Simplified approaches to the treatment of wasting

Technical Brief

July 2020

Background

Rates of child wasting remain persistently high in many countries across the world. It is estimated that an average of 47 million children under five years of age suffered from the condition globally at any point in time during 2019 (UNICEF *et al*., 2020). Over the past two decades, community-based management of acute malnutrition (CMAM) has enabled scale-up of treatment services for wasting. However, coverage of treatment remains low, with approximately only 25% of all severely wasted children being admitted to treatment and an even lower proportion of moderately wasted children accessing support. Limitations to the current model of care include high costs, issues of access to treatment services for both severely and moderately wasted cases, parallel supply chains for different therapeutic food products, and treatment protocols that are managed by different agencies and are overly complex for integration into routine health systems.

As part of the solution, practitioners and experts have recognised the need to simplify approaches to wasting treatment[1] and have identified key research priorities, such as "reviewing appropriate entry and discharge criteria for treatment of acute malnutrition" and "investigating the safety, effectiveness and cost-effectiveness of reduced dosage ready-to-use therapeutic food dosages" (No Wasted Lives, 2018). The aim is to achieve greater coverage and improved efficiency of services (including cost-effectiveness) for children at high risk of illness and death, while maintaining quality of care.

This is a dynamic and evolving area of operational research and programme innovation. It has been accelerated by the COVID-19 pandemic, for which programming adaptations to simplify treatment delivery have become critical when usual ways of delivering services are being compromised (GNC *et al*., 2020; WHO *et al*., 2020).

What are simplified approaches?

Simplified[2] approaches encompass a range of adaptations to streamline how treatment of medically uncomplicated wasting is delivered. They often include a combination of some or all of the following elements:

- **Admission, treatment and discharge based on mid-upper arm circumference (MUAC) and/or presence of oedema.** WHO currently recommends that MUAC and weight for height z-score (WHZ) may be used as admission criteria for treatment. However, WHZ is more burdensome for health staff to measure in many contexts, dependent on specific and expensive equipment, and more difficult for community health workers (CHWs) to measure, especially in areas of low literacy. Use of MUAC as the primary tool for the detection, diagnosis and discharge of wasted children 6-59 months of age in the community is in line with guidance from WHO (WHO, 2013) and from a group of experts in CORTASAM[3] (CORTASAM, 2018).
- **Use of a single ready-to-use therapeutic food (RUTF) product for treatment (irrespective of severity of wasting) and a simplified and/or reduced dosage.** This adaptation has potential to ease the supply chain for treatment of both severe and moderate wasting and to make the management of nutrition products easier. This is an area of active, ongoing research to build evidence. One study has shown that two sachets/day for severely wasted children and one sachet/day for moderately wasted children met all the nutritional needs of 95% children in treatment (Bailey *et al*., 2016).
- **Engaging family members to screen and refer their children.** There is increasing evidence that families and mothers can be effectively trained to use MUAC tapes to identify malnutrition through the 'Family MUAC' approach, also known as 'MUAC for mothers' or 'Mother-MUAC' (Bliss *et al*., 2018). This improves community-level detection of wasting and early case-finding, which is crucial for improving treatment outcomes.
- **Management of wasting by CHWs.** Equipping CHWs to manage cases of wasting can increase the capacity of health systems to treat wasting and improve access to treatment. A recent review of 18 studies suggests that CHWs have the potential to improve early detection and treatment of severely wasted children, thereby reducing risk of medical complications, decreasing defaulter and death rates linked to treatment, and relieving pressure on health facilities (Lopez-

[1] While the term 'wasting' is used throughout, children with oedema and no medical complications are also treated under simplified approaches.

[2] These approaches may also be referred to as 'combined approaches' or 'expanded admission criteria' or 'integrated treatment protocols'.

[3] Council of Research and Technical Advice on Acute Malnutrition, convened under No Wasted Lives. www.nowastedlives.org/advisory-group

Ejeda *et al*., 2019). Adapted tools for use by CHWs in areas of low literacy are also showing promise for increasing access to wasting treatment in remote communities (Van *et al*., 2019).

- **Use of indicators other than anthropometry (e.g., single parent households, breastfeeding status, etc.) to select those moderately wasted children at higher risk of poor health for nutritional support** (Lelijveld *et al*., 2019). This could help the targeting of interventions to those most 'at risk' and therefore increase access to those in need and improve cost-effectiveness, as well as help to manage some of the capacity concerns of increased caseload for health services. Use of criteria to identify children most at risk is in line with the commitments reflected in the UN 2020 Global Action Plan on Child Wasting: Framework for Action (UNICEF *et al*., 2020a).
- **Reduced frequency of follow-up** from weekly follow-up to bi-weekly (or longer) for children who are admitted to the programme but whose condition is stable. Through task-shifting of surveillance and monitoring of cases to CHWs or caregivers, there could be considerable reduction in the burden and cost, both for caregivers needing to travel to clinics and programme implementers responding to weekly patient visits, which could help prioritise limited resources according to need (Marron *et al*., 2019).

Where and how are simplified approaches being used and what is the evidence for implementation?

Studies have shown that simplified approaches, including use of reduced RUTF dosages, can be effective in successfully treating most wasted children; evidence has been generated from pilots and studies in specific contexts mainly in West Africa. A recent WHO technical consultation (WHO *et al*., 2019) concluded that there was not yet sufficient evidence to make policy change, but that simplified approaches could be considered in certain circumstances; e.g., severe food insecurity, very weak health systems and/or extreme vulnerability, including in the context of infectious disease pandemics[4] (GNC, 2017; GNC, UNICEF, & GTAM, 2020). WHO guideline development on wasting prevention and treatment is being planned through 2020/21 (UNICEF, WFP, WHO, FAO & UNHCR, 2020). Simplified approaches to treatment is an area of active ongoing research; a selection of important studies is shared in Table 1 and a more comprehensive mapping of 'where, when and by whom' is available at acutemalnutrion.org and ongoing research mapped here.

Important knowledge gaps remain around the impacts and implications of simplified approaches for the treatment of wasting. These include financing and cost (e.g., cost-effectiveness of different treatment models and how to assess this), nutrition outcomes (e.g., adequacy of reduced dosage on wasted children infected with COVID-19), policy and decision-making (e.g., how to determine contexts where simplified approaches are appropriate), health systems (e.g., impact on health staff time and delivery of other essential health services), and coverage of quality programming (e.g., impact on case-finding, admission, defaulting and length of stay).

[4] The Global Nutrition Cluster (GNC) released an 'Interim operational guidance for CMAM programming in exceptional circumstances' in 2017 which suggests revised protocols for CMAM in exceptional circumstances to support life-saving measures in crisis situations in the absence of a full continuum of care for acute malnutrition. In 2020 UNICEF, the GNC and GTAM published a brief on the Management of Child Wasting in the Context of COVID-19 which also suggests simplified approaches for the treatment of wasting in appropriate contexts.

Table 1 A selection of studies on simplified approaches to wasting treatment

Name & Organisation	Description (elements used)*	Country	Evidence	More Info
Optimising Malnutrition Treatment (Optima) Alima	RUTF for all MUAC < 125mm Admission and discharge based on MUAC and/or presence of oedema Family MUAC RUTF dosage reduced according to the degree of wasting	Burkina Faso Niger DRC Mali	Single-arm proof-of-concept trial in Burkina Faso: Programme outcomes exceeded Sphere standards. Further study needed to determine if increasing dosages for the most severely malnourished will improve recovery. Individually randomised study in Mali, DRC and Niger: Study results due late 2020	www.acutemalnutrition.org/en/Simplified-Approaches-OPTIMA https://bit.ly/2xEQSvn www.ennonline.net/fex/60/simplifiedapproachesinafrica
The Combined Protocol for Acute Malnutrition Study (ComPAS) IRC	RUTF for all MUAC < 125mm Admission and discharge based on MUAC and/or presence of oedema Family MUAC (Chad, Mali only) RUTF dosage reduced and dosage calculation simplified Reduced frequency of follow-up	Kenya South Sudan Chad Mali Somalia	Cluster-randomised non-inferiority trial in both countries: Study results due 2020 Operational pilots: running 2020 (tbc) Operational pilots: one clinic only. Completed in 2018	https://acutemalnutrition.org/en/Simplified-Approaches-ComPAS www.ennonline.net/fex/60/compastrialsouthsudankenya https://bit.ly/347Zfvt www.nutritioncluster.net/sites/default/files/2020-04/simplified protocol 2 pager_23 April 2020.pdf
Integrated protocol in response to an emergency MSF	Full dose of RUTF for all children with weight-for-height (W/H) ratio <80% median (NCHS), and/or MUAC <110 mm MAM and SAM distinction abandoned in favour of complicated vs uncomplicated distinction	Niger	Operational programme in 2006, response to high burden. Data suggests effective treatment of MAM with RUTF, low defaulting, and reduced admissions for SAM due to earlier treatment	www.ennonline.net/fex/31/rutfinniger

Name & Organisation	Description (elements used)*	Country	Evidence	More Info
Simplified approaches to treat acute malnutrition MSF	RUTF for all MUAC < 125mm Admission and discharge based on MUAC and/or presence of oedema RUTF dosage reduced and dosage calculation simplified Reduced frequency of follow-up	NE Nigeria	Programme response 2016-17. Data not yet evaluated	www.ennonline.net/fex/60/simplifiedapproaches
Integrated Protocol for acute malnutrition Project Peanut Butter	RUTF for all MUAC < 125mm Admission and discharge based on MUAC and/or presence of oedema RUTF dosage reduced according to the degree of wasting	Sierra Leone	Cluster randomised trial 2013-14: GAM recovery in the integrated protocol was 83% and 79% in the standard therapy protocol. Coverage was 71% in the communities served by integrated management and 55%in communities served by standard care	https://acutemalnutrition.org/en/Simplified-Approaches-SierraLeone https://acutemalnutrition.org/en/resource-library/3w6gI2ydyMy08C6sOmYOGS
Modelling an alternative nutrition protocol generalisable to outpatient (MANGO) study Action Against Hunger	RUTF for all MUAC < 115mm and WHZ <-3 RUTF dosage reduced according to the degree of wasting	Burkina Faso	Randomised controlled non-inferiority trial using individual randomisation to allocate patients to either the intervention arm or control arm: study results due in 2020	www.ennonline.net/fex/60/mangostudy
'Hi MAM' RUTF for 'high-risk MAM' only Project Peanut Butter	RUTF for all MUAC < 115mm and for children at high risk with MUAC ≥ 115mm < 125mm Admission and discharge based on MUAC and/or presence of oedema and 'at risk' indicators (for MAM group) RUTF dosage calculation simplified for MAM only Family MUAC	Sierra Leone	Cluster-randomised controlled trial: study results due by end 2020	https://acutemalnutrition.org/en/Simplified-Approaches-HiMAM www.ennonline.net/fex/60/himamstudy

In summary

Development of simplified approaches has been catalysed by programmers to address the challenges they see on a day-to-day basis to improve continuity of care, efficiencies and scale-up of services. These challenges are particularly urgent in contexts that are affected by high levels of nutritional vulnerability, food insecurity and/or wasting. Active evidence-generation needs to continue that takes into consideration national programme and policy priorities and contexts. Innovation and documentation of programming and quality operational research is critical to continued progress. Using simplified approaches to deliver wasting treatment in the COVID-19 response presents a valuable opportunity for real-time learning.[5] A dynamic process for updated guidance and dissemination is essential to ensure that emerging evidence is rapidly appraised and that it informs practice. Simplified approaches to treatment are an important dimension to include in upcoming WHO guideline update on wasting prevention and treatment.

[5] For the latest programming adaptations in this regard, see: https://docs.google.com/document/d/16TZQbBj65GT6bjmzxkhISVjzxK-EM-LTUztsO69DA-M/edit

References

Bailey, J., Chase, R., Kerac, M., Briend, A., Manary, M., Opondo, C., & et al (2016). Combined protocol for SAM/MAM treatment: The ComPAS study., Oxford: Emergency Nutrition Network, Field Exchange Issue 53.

Bliss, J., Lelijveld, N., Briend, A., Kerac, M., Manary, M., McGrath, M., Weise, P. Z., Shepherd, S., Marie, Z. N., Woodhead, S., Guerrero, S., & Mayberry, A. (2018). Use of Mid-Upper Arm Circumference by Novel Community Platforms to Detect, Diagnose, and Treat Severe Acute Malnutrition in Children: A Systematic Review. Glob. Health Sci. Pract. 6, 552-564, doi:GHSP-D-18-00105 [pii];10.9745/GHSP-D-18-00105 [doi].

CORTASAM (2018). Recommendations on the use of Mid-Upper-Arm-Circumference (MUAC) in the community: A statement from the Council of Research and Technical Advice on Acute Malnutrition (CORTASAM), London: No Wasted Lives.

Global Nutrition Cluster (2017). Moderate Acute Malnutrition: A Decision Tool for Emergencies. Annex D: Options for exceptional community based management of acute malnutrition programming in emergencies, New York: Unicef.

GNC, UNICEF, & GTAM (2020). Management of Child Wasting in the Context of COVID-19 New York.

Lelijveld, N., Hendrixson, D., & Manary, M. (2019). Defining and treating "high-risk" moderate acute malnutrition using expanded admission criteria (Hi-MAM Study): A cluster-randomised controlled trial protocol, Oxford, UK: Emergency Nutrition Network, Field Exchange Issue 60.

Lopez-Ejeda, N., Charle, C. P., Vargas, A., & Guerrero, S. (2019). Can community health workers manage uncomplicated severe acute malnutrition? A review of operational experiences in delivering severe acute malnutrition treatment through community health platforms. *Matern. Child Nutr. 15,* e12719, doi:10.1111/mcn.12719 [doi].

Marron, B., Onyo, P., Musyoki, E. N., Adongo, S. W., & Bailey, J. (2019). ComPAS trial in South Sudan and Kenya: Headline findings and experiences, Oxford, UK: Emergency Nutrition Network, Field Exchange Issue 60.

No Wasted Lives (2018). A Research Agenda for Acute Malnutrition. A Statement from the Council of Research and Technical Advice on Acute Malnutrition (CORTASAM), London.

UNICEF, WFP, WHO, FAO, & UNHCR (2020). Global action plan on child wasting: a framework for action to accelerate progress in preventing and managing child wasting and the achievement of the Sustainable Development Goals.

UNICEF, WHO, & World Bank Group (2020). Levels and Trends in Child Malnutrition: Key Findings of the 2020 Edition of the Joint Child Malnutrition Estimates, Geneva: WHO.

Van, B. E., Zhou, A., Tesfai, C., & Kozuki, N. (2019). Performance of low-literate community health workers treating severe acute malnutrition in South Sudan. *Matern. Child Nutr. 15 Suppl 1*, e12716, doi:10.1111/mcn.12716 [doi].

WHO (2013). Guideline: Updates on the Management of Severe Acute Malnutrition in Infants and Children, Geneva: WHO.

WHO, UNHCR, UNICEF, & WFP (2019). Simplified approaches for the treatment of child wasting. An executive briefing from a technical consultation between the World Health Organization, the Office of the WHO & UNICEF (2020). Prevention, Early Detection and Treatment of Wasting in Children 0-59 Months through National Health Systems in the Context of COVID-19.

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Produced by Emergency Nutrition Network (ENN) supported by the Eleanor Crook Foundation. July 2020.

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