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 treatment¹ 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?

Simplified² 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 CORTASAM³ (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 default and death rates linked to treatment, and relieving pressure on health facilities (Lopez-

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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 (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 acutemalnutrition.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).

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### Table 1

A selection of studies on simplified approaches to wasting treatment

<table>
<thead>
<tr>
<th>Name &amp; Organisation</th>
<th>Description (elements used)*</th>
<th>Country</th>
<th>Evidence</th>
<th>More Info</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Optimising Malnutrition Treatment (Optima)</strong></td>
<td>RUTF for all MUAC &lt; 125mm and/or presence of oedema</td>
<td>Burkina Faso</td>
<td>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.</td>
<td><a href="https://www.acutemalnutrition.org/en/Simplified-Approaches-OPTIMA">www.acutemalnutrition.org/en/Simplified-Approaches-OPTIMA</a></td>
</tr>
<tr>
<td><strong>Alima</strong></td>
<td>Admission and discharge based on MUAC and/or presence of oedema</td>
<td>Niger</td>
<td>Individually randomised study in Mali, DRC and Niger: Study results due late 2020</td>
<td><a href="https://www.ennonline.net/fex/60/simplifiedapproachesinafrica">www.ennonline.net/fex/60/simplifiedapproachesinafrica</a></td>
</tr>
<tr>
<td><strong>RUTF dosage reduced according to the degree of wasting</strong></td>
<td>RUTF dosage reduced according to the degree of wasting</td>
<td>DRC, Mali</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>The Combined Protocol for Acute Malnutrition Study (ComPAS)</strong></td>
<td>RUTF for all MUAC &lt; 125mm and/or presence of oedema</td>
<td>Kenya, South Sudan</td>
<td>Cluster-randomised non-inferiority trial in both countries: Study results due 2020</td>
<td><a href="https://acutemalnutrition.org/en/Simplified-Approaches-ComPAS">https://acutemalnutrition.org/en/Simplified-Approaches-ComPAS</a></td>
</tr>
<tr>
<td><strong>IRC</strong></td>
<td>Admission and discharge based on MUAC and/or presence of oedema</td>
<td>Chad</td>
<td>Operational pilots: running 2020 (tbc)</td>
<td><a href="https://www.ennonline.net/fex/60/compasatrialsouthsudankeyna">https://www.ennonline.net/fex/60/compasatrialsouthsudankeyna</a></td>
</tr>
<tr>
<td><strong>Reduction of frequency of follow-up</strong></td>
<td>RUTF dosage reduced and dosage calculation simplified</td>
<td>Somalia</td>
<td>Operational pilots: one clinic only. Completed in 2018</td>
<td><a href="https://www.nutritioncluster.net/sites/default/files/2020-04/simplifiedprotocol2_pager_23_April_2020.pdf">https://www.nutritioncluster.net/sites/default/files/2020-04/simplifiedprotocol2_pager_23_April_2020.pdf</a></td>
</tr>
<tr>
<td><strong>Integrated protocol in response to an emergency</strong></td>
<td>Full dose of RUTF for all children with weight-for-height (W/H) ratio &lt;80% median (NCHS), and/or MUAC &lt;110 mm</td>
<td>Niger</td>
<td>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</td>
<td><a href="https://www.ennonline.net/fex/31/rutfinniger">www.ennonline.net/fex/31/rutfinniger</a></td>
</tr>
<tr>
<td><strong>MSF</strong></td>
<td>MAM and SAM distinction abandoned in favour of complicated vs uncomplicated distinction</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Simplified approaches to treat acute malnutrition

<table>
<thead>
<tr>
<th>Name &amp; Organisation</th>
<th>Description (elements used)*</th>
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<th>Evidence</th>
<th>More Info</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simplified approaches to treat acute malnutrition</td>
<td>RUTF for all MUAC &lt; 125mm Admission and discharge based on MUAC and/or presence of oedema RUTF dosage reduced and dosage calculation simplified Reduced frequency of follow-up</td>
<td>NE Nigeria</td>
<td>Programme response 2016-17. Data not yet evaluated</td>
<td><a href="http://www.ennonline.net/fex/60/simplifiedapproaches">www.ennonline.net/fex/60/simplifiedapproaches</a></td>
</tr>
<tr>
<td>Integrated Protocol for acute malnutrition</td>
<td>RUTF for all MUAC &lt; 125mm Admission and discharge based on MUAC and/or presence of oedema RUTF dosage reduced according to the degree of wasting</td>
<td>Sierra Leone</td>
<td>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</td>
<td><a href="https://acutemalnutrition.org/en/Simplified-Approaches-SierraLeone">https://acutemalnutrition.org/en/Simplified-Approaches-SierraLeone</a> <a href="https://acutemalnutrition.org/en/resource-library/3w6gi2ydyMy08RCs6OmYOGS">https://acutemalnutrition.org/en/resource-library/3w6gi2ydyMy08RCs6OmYOGS</a></td>
</tr>
<tr>
<td>Modelling an alternative nutrition protocol generalisable to outpatient (MANGO) study</td>
<td>RUTF for all MUAC &lt; 115mm and WHZ &lt;-3 RUTF dosage reduced according to the degree of wasting</td>
<td>Burkina Faso</td>
<td>Randomised controlled non-inferiority trial using individual randomisation to allocate patients to either the intervention arm or control arm: study results due in 2020</td>
<td><a href="http://www.ennonline.net/fex/60/mangostudy">www.ennonline.net/fex/60/mangostudy</a></td>
</tr>
<tr>
<td>‘Hi MAM’ RUTF for ‘high-risk MAM’ only</td>
<td>RUTF for all MUAC &lt; 115mm and for children at high risk with MUAC ≥ 115mm &lt; 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</td>
<td>Sierra Leone</td>
<td>Cluster-randomised controlled trial: study results due by end 2020</td>
<td><a href="https://acutemalnutrition.org/en/Simplified-Approaches-HiMAM">https://acutemalnutrition.org/en/Simplified-Approaches-HiMAM</a> <a href="http://www.ennonline.net/fex/60/himamstudy">www.ennonline.net/fex/60/himamstudy</a></td>
</tr>
</tbody>
</table>

### 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. 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.

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*For the latest programming adaptations in this regard, see: https://docs.google.com/document/d/16T2ZbVj6SGT6bymzxxhi5VjpxK-EM-LTUz50X9DA-M/edit*
References


