

# TECHNICAL POSITIONING ON EVOLUTION OF CMAM IMPLEMENTATION

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UPDATE JANUARY 2021



## ACKNOWLEDGEMENT

The document is the result of a consultative process across Action Against Hunger network, including the research landscape review of No Wasted Lives. Senior Health and Nutrition Advisors (SHNAs: Alexandra Rutishauser-Perera, Antonio Vargas, Elise Lesieur, Hassan Ahmed, Caroline Antoine, Imelda Awino, Paul Robinson, Pawankumar Patil) determined the topic of interests, and with the support of the research working group (Ellyn Yakowenko, Pilar Charle Cuellar, Polly Walker, Myriam Ait Aissa) used the latest evidence available to draft each statement, and incorporated feedback after each step of a multi-level review. Drafts were then reviewed by the research and advocacy working groups for feedback, as well as the Technical<sup>1</sup> (Bridget Aidam, Luis Gonzales Muñoz, Naima Chowdhury and Pascal Revault) and the Advocacy International Management Group (Lucile Grosjean, Kate Munro, Kira Fischer, Manuel Sánchez, Michelle Brown, Mousumi Gupta, Stacey Sawchuk) for final comments and validation.

## PREAMBLE

Action Against Hunger's December 2019 [Research for Nutrition](#) (R4NUT) conference on the Continuum between the Prevention and Treatment of Undernutrition and the Covid 19 pandemic highlighted three critical reasons to update our technical positioning on the management of acute malnutrition:

- 1. THE MOTIVATION TO ACCELERATE PROGRESS AGAINST GLOBAL TARGETS:** To achieve key Sustainable Development Goal targets by 2030 – including for example Objective 2.1 on reduction in the prevalence of severe acute malnutrition – we must adapt our strategies and protocols. Updating our technical positioning therefore allows us to adapt our actions to most appropriate public health strategies and ensure health system strengthening.
- 2. EMERGENT RESEARCH FINDINGS ON OPTIMIZED APPROACHES:** Several important studies on innovations in the detection and/or management of acute malnutrition have recently released results. Updating our technical positioning therefore allows us to assess and articulate the evolution of our technical positioning against this new evidence.
- 3. AN URGENT NEED FOR ADAPTATION IN THE FACE OF A GLOBAL PANDEMIC:** To ensure that essential lifesaving services – such as the management of acute malnutrition – continue safely during the COVID-19 pandemic, programmatic adaptations have been required. Updating our technical positioning therefore allows us to highlight potential opportunities for adaptation, as well as consider possible limitations or risks, as the pandemic fundamentally reshapes the ways in which we work.

This document, therefore, presents Action Against Hunger's current technical positioning in the management of acute malnutrition. Each chapter re-assesses these approaches in light of evidence available as December 2020, providing updated technical and advocacy recommendations, as well as highlighting outstanding questions we hope will be addressed by future research in these areas. We do expect these positions will continue to evolve over time and we will continue to update as additional evidence emerges.

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<sup>1</sup> This included a member of the gender unit.

Finally, this document is intended specifically for Action Against Hunger's own internal use to provide updated guidance to our country teams and ensure consistency across all of our international network's technical and advocacy approaches. As such, we expect these updated positions will be used to proactively support key international policy conversations, including but not limited to the on-going revision of acute malnutrition guidelines by the World Health Organization.

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## ACTION AGAINST HUNGER'S TECHNICAL AND EXPERTISE DIRECTORS, 10 DECEMBER 2020



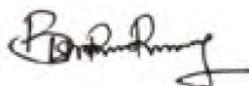
**ALISON MC NULTY**  
DIRECTOR OF OPERATIONS,  
ACTION AGAINST HUNGER – UK



**BRIDGET AIDAM**  
DIRECTOR, TECHNICAL SERVICES  
AND INNOVATION,  
ACTION AGAINST HUNGER – US



**LUIS GONZÁLEZ MUÑOZ**  
TECHNICAL ENGINEERING AND  
SOCIAL ACTION DIRECTOR, ACCION  
CONTRA LA HAMBRE – SPAIN



**HASSAN AHMED**  
ASSOCIATE DIRECTOR OF NUTRITION,  
ACTION AGAINST HUNGER – CANADA



**PASCAL REVAULT**  
EXPERTISE & ADVOCACY DIRECTOR,  
ACTION CONTRE LA FAIM – FRANCE



**PAWANKUMAR PATIL**  
DIRECTOR TECHNICAL,  
ACTION AGAINST HUNGER – INDIA



## INTRODUCTION

Globally, a total of 47 million children suffer from wasting, of which 14.3 million (~30%) were estimated to be severely wasted, before the Covid-19 pandemic<sup>2</sup>. The shift from inpatient treatment of these children to an outpatient model – community-based management of acute malnutrition (CMAM)<sup>3</sup> – was instrumental in improving both the cost-effectiveness of the treatment regimen and patient’s ability to access to treatment services. Despite these advances, CMAM coverage remains suboptimal; by last estimation, less than 30% of severely acutely malnourished (SAM) are able to access these treatment services, even in those places where CMAM has been integrated into health services<sup>4</sup>. Top barriers to access remain linked to the distance caregivers and children are required to travel in order to receive care, poor outreach activities, a lack of awareness, and a poor supply of ready-to-use therapeutic food (RUTF).

Even though the statement focuses on treatment of wasting, Action Against Hunger is highly engaged on acute malnutrition and stunting prevention. While treatment of acute undernutrition is a critical action to save lives, nutrition prevention and activities strengthening resilience are essential to having a lasting, extensive impact on undernutrition through addressing their immediate and underlying causes. Action Against Hunger is committed to implementing a prevention-treatment-prevention continuum. It means preventing the occurrence of episodes of under-nutrition but also of avoiding relapses at discharge of treatment. Recognizing that undernutrition is a complex, multifactorial problem that needs a comprehensive analysis and response is essential. To this end, Action Against Hunger is committed to working on the immediate and underlying causes of undernutrition through an integrated and multisectoral approach using our expertise in WaSH, food security and livelihood, health, mental health, care practices, protection and gender. Action Against Hunger will strive to understand the specific roots and socio cultural determinants of undernutrition of each context through LinkNCA methodology, Gender analysis and/or intersectoral need assessment. This will allow us to offer an appropriate and relevant response in terms of prevention.

In order to ensure that all children affected by acute malnutrition are able to receive the care they need, more efforts and innovations are needed to expand the provision of life-saving treatment services at-scale. However, universal coverage of SAM treatment can only be achieved by ensuring treatment availability and access across all levels of health systems, especially as an integrated component of primary healthcare services. Action Against Hunger prioritizes the services, following two dimensions of the continuum of care: i) provision of treatment services at key stages in life, and, ii) provision of treatment services across all levels of the health system, including but not limited to service provision within communities. Our health activities, therefore, focus on both community health and primary healthcare, with specific focus on the continuity and quality of these services over time. We remain committed to health system strengthening and integration of acute malnutrition management into health systems to reach universal coverage.

In recent years, there has been renewed focus on developing, testing and implementing new or adapted approaches – commonly referred to as “simplified approaches” – in order to overcome the coverage gap. These efforts have aimed to simplify and/or optimize elements of the CMAM model in ways that may improve cost-effectiveness, facilitate implementation in humanitarian emergencies, or encourage integration into health systems.

<sup>2</sup> UNICEF, WHO, WFP- Joint malnutrition estimates, 2020 edition.

<sup>3</sup> Also referred to as Integrated Management of Acute Malnutrition (IMAM) in some contexts.

<sup>4</sup> NUTRIDASH 2018 (based on geographical coverage only).



Action Against Hunger, as a leading technical organization in the prevention and treatment of acute malnutrition, has and continues to play a key role in piloting these new approaches. We aim to advance the conversation on acute malnutrition policy and practice, ensuring that any programmatic and/or policy shifts are based on a robust body of evidence that clearly outlines key mechanisms to optimize treatment safely for all children affected, regardless of their gender, sex or social context.

Our 2018 [Technical Positioning on Acute Malnutrition](#) paper highlighted key connections between research and practices, bringing together elements of our 2016-2020 Research Strategy and the Research Agenda of No Wasted Lives. However, as mentioned in that paper, significant additional work – including several research studies – were anticipated to add to the conversation and evidence base in coming years.

In March 2019, a technical consultation between the World Health Organization (WHO), the Office of the United Nations High Commissioner for Refugees (UNHCR), the United Nations Children’s Fund (UNICEF) and the World Food Programme (WFP) determined that, while promising, there is not yet sufficient evidence to endorse many of these approaches, including in emergency contexts. They clarified, “the potential programmatic advantages of simplified protocols in exceptional circumstances warrant further investigation. As they currently stand, not all elements of simplified approaches align with WHO normative guidelines and the evidence available to date does not yet warrant a change in global recommendations<sup>5</sup>.”

With renewed efforts towards expanding and deepening the evidence base on these approaches, the Council for Research and Technical Advice on Acute Malnutrition (CORTASAM) released a [research landscape review](#) in February of 2020.

Most recently, many of these adapted approaches were integrated into guidance<sup>6</sup> specific to management of acute malnutrition during the COVID-19 pandemic, which simultaneously allowed for their widespread application and also confusion regarding if/when/why/how to implement them at field level<sup>7</sup>.

Taken together, these new developments – and the interest of our staff to have more guidance on how to navigate programming within this space – have warranted an update to Action Against Hunger’s prior 2018 statement on innovations in the management of acute malnutrition. This paper, therefore, is intended to be an internal document, updating the 2018 recommendations for field-level implementers within Action Against Hunger’s country offices and key messages for our advocacy teams. We believe this update will allow for clear and common alignment across the Action Against Hunger network and communication of these positions, via our advocacy teams, in internal and external fora.

5 *Simplified approaches for the treatment of child wasting An executive briefing from a technical consultation between the World Health Organization, the Office of the United Nations High Commissioner for Refugees, the United Nations Children’s Fund and the World Food Programme, Geneva 26–27 March 2019.*

6 *Prevention, early detection and treatment of wasting in children 0–59 months through national health systems in the context of Covid-19 implementation guidance; WHO, UNICEF, 2020.*

7 *Action Against Hunger has been a leader in tracking and analyzing these developments during the pandemic, with results demonstrated on the [State of Acute Malnutrition](#).*



This update is organized around the following six CMAM innovations:

1. Optimal admission criteria for SAM treatment in CMAM programs
2. Discharge criteria for SAM children
3. Reduced RUTF dosages for SAM treatment
4. Combined treatment protocols for SAM and MAM
5. Treatment of acute malnutrition by community health workers
6. Management of at-risk mothers and infants under 6-months (MAMI)
7. Digitalization in CMAM

Each section outlines what we know about the innovation, gaps in the evidence base, and therefore, Action Against Hunger's current position regarding each approach and the advocacy messages that should be used to communicate these positions.

As more evidence emerges, the positioning on the innovations will be reviewed and considered and any adaptations to the statements below will be done.





# OPTIMAL ADMISSION CRITERIA FOR SAM TREATMENT IN CMAM PROGRAMS

In regards to admission to CMAM programmes WHO recommends that children between 6 to 59 months of age with a weight-for-height (WHZ) Z-score  $<-3$  OR a Middle Upper Arm Circumference (MUAC)  $<115\text{mm}$  OR with bilateral pitting oedema OR one of the described criteria be considered as SAM and be eligible for treatment. MUAC remains the most practical and scalable diagnostic tool at community level. The Family MUAC approach - which empowers caregivers to use a MUAC tape to detect acute malnutrition in their own child - offers great potential to expand the coverage of treatment of SAM children<sup>8 9</sup>, despite being limited to screening while this section focuses on diagnosis. While measuring WHZ is often proven to be challenging at scale, it is crucial to ensure that the most at risk SAM children are prioritised for treatment.

Anthropometric measurements are proxy indicators of acutely malnourished children. While they are relatively easy to implement in the field, they lack the specificity to diagnose the complex biological deficits and syndromes that occur during malnutrition. The main goal to improve diagnosis of SAM is to identify practical indicators that identify children with the highest risk of death due to malnutrition.

One of the simplified approaches piloted over the last decade to help improve access and coverage of SAM treatment focused on the use of MUAC and edema only for admission of SAM children into CMAM programmes<sup>10</sup>.

## WHAT WE KNOW:

A growing body of evidence has demonstrated that, in certain circumstances, MUAC is a better predictor of near-term mortality in children than WHZ, in both clinic- and community-based settings<sup>11 12 13 14 15 16 17</sup>. The relative utility of MUAC compared to WHZ has been demonstrated in diverse settings including Niger<sup>18</sup>, Bangladesh<sup>19</sup>, Senegal<sup>20</sup> and the Gambia<sup>21</sup>.

In another study in Kenya, MUAC was found to be a practical screening tool that performed at least as well as WHZ in predicting subsequent inpatient mortality among children that were severely malnourished<sup>22</sup>.

The OptiDiag<sup>23</sup> research done by Action Against Hunger aimed at better describing the nutritional and clinical status, and the acute risk of mortality and morbidity, in the various types of SAM children: those identified only by  $\text{MUAC}<115\text{mm}$ , those identified only by  $\text{WHZ}<-3$ , and those combining low WHZ and low MUAC. It demonstrates that SAM children with low WHZ alone have deficits in nutritional status, hydration, and iron balance as or more severe than those in SAM children with low MUAC alone and have lower levels of leptin, a marker of mortality risk in SAM.

The studies conducted in the last five years on the topic were largely implemented in sub-Saharan Africa with some diversity in terms of food security and levels of wasting<sup>24</sup>.



We know that MUAC and WHZ are correlated<sup>25</sup> but often MUAC and WFZ-based indicators identify distinct groups of children<sup>26 27 28 29</sup>. However, one recent study demonstrated that the subpopulation of SAM cases combining both deficits displayed the highest vulnerability<sup>30</sup> and should in fact be considered as SAM at high risk. There is a large body of evidence demonstrating that MUAC-only admission and discharge may not identify some children at increased risk of wasting-related mortality that are identified by weight-for-height (WHZ)<sup>31 32 33 34 35 36</sup>.

There is still limited research on how to improve MUAC cut-offs to identify boys and girls only identified by WHZ<sup>37</sup> and several Asian countries where Action Against Hunger works are following the WHO recommendations on using both criteria to detect acute malnutrition in health facilities.

In Bangladesh, a 2013 prospective cohort study concluded that relying on MUAC as a single assessment tool for case finding and for admission of children with SAM to nutritional programs would seem acceptable<sup>38</sup>. However, in 2020 a secondary data analysis explored the concordance between WHZ and MUAC to identify wasting in 12 districts of Bangladesh and the impact of different MUAC thresholds to capture low WHZ children. The analysis found poor and varied concordance between the two indicators with WHZ identifying the highest proportion of wasted children<sup>39</sup>.

Analysis on multiple cohort datasets suggest that a combination of MUAC<115mm and weight-for age z-score (WAZ) <-3 can identify the majority deaths associated with WHZ <-3 and concurrent wasting-stunting (WaSt)<sup>40 41</sup>. Therefore, it has been proposed that the programmatic use of low MUAC and/or low WAZ offers a way to identify children with the highest risk of death<sup>42</sup>. However, in practice, low WAZ is not yet currently used as an independent indicator for admission to CMAM programs. Furthermore, easier tools can be used for health workers to measure weight and check the WHZ in an easier and more accurate way<sup>43</sup>.

### WHAT ARE THE GAPS IN RESEARCH?

There are still important evidence gaps as it relates to MUAC and edema-only admission and its ability to identify all children most at risk of mortality. Future research should explore this topic in various contexts, especially those outside of Sub-Saharan Africa, and focus on how current WHO standard MUAC admission criteria might be adapted (e.g. expanded) to identify children most at risk in particular those identify by WHZ. Finally, research should not solely focus on MUAC and edema-only criteria, but should also explore the potential of other anthropometric criteria, such as WAZ, to better capture these high-risk children.

More fundamentally, there is a need to further describe the functional severity with different anthropometric constitutions.

All additional research should take into consideration gender, sex, vulnerable conditions such as HIV/AIDS and disability<sup>44</sup>.

Action Against Hunger will strive to take an active role in the generation of missing evidence on the (cost)-effectiveness and coverage of MUAC-only approaches in all contexts. Action Against Hunger will also strive to generate missing evidence on MUAC only approaches, including its social impact as well as other ways to diagnose acute malnutrition such as with SAM photo-diagnostic or the new SMART +.



## POSITION

In light of the current available evidence, Action Against Hunger is not yet able to advocate for a change to the current standard admission criteria. Where possible, Weight for Height and MUAC should both continue to be used for SAM diagnosis at the health facility level. While at the community level MUAC only is accepted due to logistical constraints.

While it is desirable to have a fuller understanding of the mechanism behind the discrepancy between MUAC and WHZ, research in this area should not delay the implementation of programs aiming at improving the coverage of treatment by prioritising the detection and treatment of children with low MUAC in the specific circumstances below<sup>45</sup>:

- National protocols including MUAC-only programming
- Programmatic adaptations done to reduce the burden of outbreaks when Infection Prevention and Control materials/measures are insufficient
- Or sudden increase of caseload: up to 50 SAM cases or PHC consultations a day per health worker outside of a regular seasonal peak
- Or transportation system constraints preventing or delaying the teams to carry the equipment necessary for weight and height measurements for mobile services
- Or in difficult situation where access endangers personnel/assets (minimal staffing protocol in place)

When the situation stabilises, WHZ and MUAC should both still be used in health facilities for the detection of SAM in addition to the presence of bilateral pitting oedema as it has been done during the Covid 19 crisis.

Furthermore, the use of MUAC only is deemed acceptable for screening at community level in order to expand the possibility of covering more SAM children with CMAM treatment.

## ADVOCACY MESSAGE

Action Against Hunger will consider promoting use of MUAC-only approaches for the admission to SAM treatment in circumstances where WHZ measurement is difficult to undertake as specified above. Action Against Hunger will ensure that the latest evidence is being used before advocating for any changes in policy towards the adoption of MUAC-only protocols in health facilities. During the circumstances stated above, Action Against Hunger will strive to reinforce all aspects of the health system and support service delivery in order to allow for the use of weight for height at admission.

### COMPLEMENTARY STATEMENT ON SURVEILLANCE AND DESCRIPTION OF THE NUTRITIONAL STATUS AT POPULATION LEVEL:

The Action Against Hunger network continues to support and advocate for the inclusion of all three indicators (WHZ, MUAC, bilateral pitting oedema) in cross-sectional surveys to establish population-level prevalence of acute malnutrition (i.e. SMART surveys) and in classifications of vulnerability of the population (e.g. Integrated Phase Classification and Cadre Harmonisé)<sup>46 47</sup> as well as coverage surveys.



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# CRITERIA OF DISCHARGE FOR SAM CHILDREN

Currently, different countries are using different discharge criteria for SAM treatment despite the WHO recommendations stating that:

Children with severe acute malnutrition should only be discharged from treatment when their:

- weight-for-height/length is  $\geq -2$  Z-scores and they have had no oedema for at least 2 weeks, or
- mid-upper-arm circumference is  $\geq 125$  mm and they have had no oedema for at least 2 weeks.

## WHAT WE KNOW:

An analysis was done in India on the switch from weight gain improvement as a discharge criteria to the WHO ones showing that the latest criteria tends to keep longer in the programme children who are younger and/or have poorer anthropometry at admission<sup>48</sup>.

However, in a study with 753 children cured from a Médecins Sans Frontières outpatient nutrition program in North Sudan it was found that MUAC could be used as discharge criteria, as having a longer duration of treatment and a higher percent weight gain for the most malnourished is highly desirable<sup>49</sup>. This was also shown in another study<sup>50</sup>. Another secondary analysis in Gambia<sup>51</sup> suggests that MUAC can be used as a standalone tool for monitoring nutritional recovery but recommends to assess follow-up data. An additional study done in Burkina Faso<sup>52</sup> recommends avoiding premature discharge before a MUAC of  $\geq 125$ mm.

Following the reasoning of the position on MUAC only programming as well as new evidence based on a simulation research done in India suggests that discharging SAM children as cured, based on MUAC only methods, without consideration of their WHZ status, leads to discharging children too early. These children could still be defined as cured while they are, in fact still MAM or even SAM, which may have implications resulting in their relapse<sup>53</sup>.

It is considered that the use of the MUAC alone could have a weight in the relapses, but there is consensus that more studies are needed.

## WHAT ARE THE GAPS IN RESEARCH?

We are lacking evidence on the optimal discharge criteria to be used in SAM treatment to prevent relapses and mortality. All additional research should also take into consideration gender, sex, vulnerable conditions such as HIV/AIDS and disability



## POSITION

Action Against Hunger will continue recommending the use of the WHO recommendations on the anthropometric criteria for discharge.

This means that if a child was admitted with :

- Either a WHZ <-3, the child will need to have weight-for-height/length  $\geq -2$  Z-scores and no oedema for at least 2 weeks to be discharged.
- Or a mid-upper-arm circumference of <115mm, the child will need to have a MUAC  $\geq 125$ mm and no oedema for at least 2 weeks to be discharged.
- Or only bilateral pitting oedema, the child will have to wait to have weight-for-height/length  $\geq -2$  Z-scores and no oedema for at least 2 weeks to be discharged.
- Action Against Hunger will strive to take an active role in the generation of missing evidence on the use of non-anthropometric criteria for discharge as well as reasons for relapse.

## ADVOCACY MESSAGE

Action Against Hunger will advocate for national guidelines to follow the WHO recommendations for the discharge criteria of SAM children. The exit criteria for a malnourished child should not solely rely on anthropometric indicators and should be accompanied by an assessment of the child's socioeconomic situation to prevent him from falling back into malnutrition.

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# REDUCED RUTF DOSAGE FOR SAM TREATMENT

Ready-to-use therapeutic food (RUTF) is a key element of treatment for SAM among children and represents a major part of the treatment costs. RUTF supply and cost remain a major challenge for the complete integration of SAM treatment within the health system. A reduced dose of RUTF, if proven as effective as standard treatment, could be an efficient avenue to overcome financial and logistical constraints.

## WHAT WE KNOW:

It is first and foremost important to remember that the optimal weight gain velocity and corresponding therapeutic feeding regimen required to achieve complete physiological recovery both in the short term and a sustained healthy growth in the mid-term is still unknown, despite being clearly acknowledged as a research priority by WHO since 2013.

In the absence of such evidence, the current dose recommended by most protocols was advised by experts in this field and corresponds to energy intakes of 150-200 kcal/kg/day<sup>54</sup>, which were initially meant to enable an estimated weight gain velocity up to 20 g/kg/d. However, these high rates of weight gain are not observed in practice in community-based treatment.

One of the reasons for this suboptimal response to treatment is due to the sharing of RUTF within the household. Furthermore, even if family food is currently advised against during treatment, field based observations suggest that nearly all children (both boys and girls) are consuming family food in addition to RUTF treatment.

Several recent initiatives investigated the feasibility, safety, efficacy and economical benefits of more optimised and alternative approaches to SAM treatment involving the reduction of RUTF dose used.

In the MANGO study, the clinical efficacy of a reduced dose was tested among SAM children. The research hypothesis was designed on the basis that 1) a reduced dose was found effective in 2009 in enabling recovery for both boys and girls in an emergency program in Myanmar<sup>55</sup>, and 2) sharing RUTF within a family is common practice. Through the MANGO research, Action Against Hunger demonstrated that the reduction of the RUTF dosage after 2 weeks<sup>56</sup> of treatment is possible and resulted in similar recovery rates<sup>57</sup>, similar body composition at recovery<sup>58</sup>, and similar vitamin A & iron status at discharge<sup>59</sup> to the standard protocol (control arm). These results were found in non-emergency contexts with stable food security, quality supervision of the programme, and admission was based on MUAC and WHZ, at the exclusion of oedema.

Other studies such as OPTIMA<sup>60</sup> have tested another type of reduction associated with the simplification of the diagnostic criteria (MUAC and oedema only) and combining the treatment of SAM and MAM using RUTF to treat both. The study did not have a control arm to compare the effectiveness of the program with the standard protocol. While the study provided promising programmatic outcomes that in general exceeded the SPHERE Standards, there was a low (64%) recovery rate among children with MUAC<115mm. Without a comparison group, it is not possible to know whether the reduced dosage has any impact on the low recovery rate among SAM children. The study suggests that the reduced dose might have been insufficient among the most severely malnourished children.



The COMPAS<sup>61 62</sup> study, another recent initiative, tested an alternative SAM treatment protocol with 1) using only MUAC and oedema as diagnostic criteria, 2) combining MAM and SAM in the same program, 3) using RUTF to treat both SAM and MAM children and 4) prescribing either 1 or 2 RUTF sachets to MAM and SAM patients respectively, displaying severe or moderate anthropometric deficits.

The study<sup>63</sup> first estimated that for 95% of children with a MUAC 100 to <125mm who were successfully treated, energy needs derived from observed weight gains could be met with 1,000 kilocalories a day. However, they also estimated that older children (over 24 months) or larger children would have higher needs.

The protocol tested was then declared as non inferior to standard protocols in countries. The recovery rate did not reach the [Sphere standards](#) in both arms especially for SAM children which may be mainly because of high defaulter rates for both new protocols in both arms and the control arm. The combined protocol cost less per child recovered than the standard protocol, especially for treatment of children with SAM with a 12% savings per child.

A major limitation to what we know is that these studies (except for MANGO) tested several modifications to treatment protocols at once, therefore it is difficult to draw conclusions and even evaluate separately the efficacy of their dosage reduction.

### WHAT ARE THE GAPS IN RESEARCH?

Action Against Hunger doesn't have enough evidence at this stage on the safety of dosage reduction. Action Against Hunger believes that further evidence is required on:

- what could be the most optimal dosage and when the reduction should occur,
- the impact and effectiveness of dosage reduction in both emergency (including within food insecurity context) and non-emergency contexts.

More research is also needed to identify the impact of the reduced dosage on the most severe and vulnerable cases and how might these cases relapse.

In addition, we need to understand how the use of family food during the treatment of SAM influences the recovery and need for therapeutic food (dosage of RUTF). If caregivers give family foods to children, could a reduced dose of RUTF thus be sufficient and results in similar weight gain?

Further study on gender, social-cultural, specific vulnerabilities and economic conditions will also be needed in both stable and emergency contexts.

## POSITION

While initial research shows promise that a reduced dosage of RUTF may be safe and effective, sufficient evidence on the optimized dosage has yet to be established. . As a result, Action Against Hunger will continue to take a leading role in exploring the feasibility, safety and viability of potential dosage optimizations and impact of reduced RUTF dosage for SAM treatment on the speed of weight recovery and relapses through our research and continue to monitor for any additional studies that are undertaken in this area. **We will promote reduced-dosage programming during circumstances of exceptional shortages of therapeutic food. In such a situation, the dosage reduction will be calculated according to the latest evidence available and a solid monitoring system will have to be put in place.**



## ADVOCACY MESSAGE

Due to evidence gaps on the topic, Action Against Hunger, at this time will not advocate for the scale up of and change in policy towards reduced-dosage programming outside of contexts experiencing exceptional shortages of RUTF. Action Against Hunger will ensure that the latest evidence is being used before advocating for changes in policy on reduced dosage. Where RUTF is recommended in the national protocols, Action Against Hunger will advocate for the improvement of the supply chain to ensure adequate supply of RUTF for SAM children treatment.

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# COMBINED TREATMENT PROTOCOL FOR SAM AND MAM

Acute malnutrition has a spectrum ranging from very mild to extremely high severity. Generally, the severity of the condition corresponds to the risk of mortality, with the most severe corresponding to the highest risk of mortality.

The current classification of the disease has two clear distinctions. These classifications are (i) “Severe” acute malnutrition (SAM) and (ii) “Moderate” acute malnutrition (MAM). Children categorized as suffering from SAM are considered to have a higher risk of mortality than those categorized as MAM. However, globally MAM represents a larger burden. The treatment protocols for SAM and MAM are different (nutritional product, medical treatment and management, and follow up) despite both categories of malnutrition actually being a continuum of the same disease<sup>64</sup>. SAM children require a specific nutritional and medical protocol and management of complications. WHO recommends to treat MAM children with nutritional products only in settings where there is a high prevalence of wasting or food insecurity (based on Integrated Phase Classification) at community or household level<sup>65</sup>. There are however, some studies that have shown good results with MAM treatment in non-emergency settings<sup>66 67</sup>. The rationale for this distinction of SAM and MAM and their corresponding treatment protocols was also anchored on the need to prioritize limited resources for those at the highest risk of death.

Many aid organizations and some Ministries of Health are exploring ways to address the inefficiencies, poor coverage and gaps and challenges in CMAM protocol implementation. Based on some research studies and anecdotal evidence from field practitioners, it has been proposed to improve the continuum of care along the acute malnutrition spectrum through a combined treatment protocol in order to increase coverage, improve adherence to full treatment, reduce costs, and improve logistical constraints, among other reasons<sup>68</sup>. According to this combined protocol, SAM and MAM children are treated with an integrated protocol in the same location and with the same nutritional product.

In this positioning paper, “combined protocols” means SAM and MAM treatment is offered under one combined protocol in the same location and with the same nutritional product. Even if combined protocols are often defined to include other simplified approaches on diagnosis or dosage reduction, this definition will not be considered here. Combined protocols at this stage are only considered in emergency settings where MAM girls and boys are treated with nutritional supplementation.

## WHAT WE KNOW:

A recently published study (ComPAS), which was a cluster-randomized controlled trial in Kenya and South Sudan indicated that combined treatment for SAM and MAM is non-inferior to standard care<sup>69</sup>. This suggests an integrated treatment protocol for severe and moderate acute malnutrition is as effective as the currently practiced standard treatment, leading to the same number of children recovered. In this study the recovery rate for the combined treatment was 47.6% for MAM and SAM, while the rate for the control arm was 43.8%. However, the control arm deviated significantly from the WHO recommendation and different cured criteria were applied in the 2 arms of the study. Defaulter rates were high in the 2 arms. Coverage results were similar for both protocols. The recovery rate per protocol was 76.3% for the combined treatment and 73.5% for control.



In another cluster-randomized controlled trial in Sierra Leone the integrated management of acute malnutrition was found to be an acceptable alternative to standard management, providing greater community coverage. However, problems of homogeneity between the 2 arms in this study limit the conclusions<sup>70</sup>.

In another study in Burkina Faso the OptiMA single-arm trial<sup>71</sup> applying a combined SAM and MAM protocol using one product has achieved program outcomes that in general exceeded SPHERE standards except for children with MUAC <115mm with a low (64%) recovery rate.

In grey literature, MSF utilized the model from CompAS trial (Phase 1) in northeastern Nigeria, treating children with MUAC <115mm with two RUTF sachets per day and children with MUAC ≥115mm with one RUTF sachet per day without control arm. In a FEX publication<sup>72</sup>, MSF reported that they reached international standards by applying the combined model and identified an increase in caseload as a major challenge. In this program, 70% of admission were MAM and the management of MAM with complications required the opening of an IPD department.

Of note, in all these studies, using the same platform and same product for MAM and SAM was not the only modification as compared to standard care; changes were made to admission criteria, definition of recovery and RUTF dosage. In all of them, concerns were raised on the cure rate of most severe cases (SAM) possibly linked to dosage reduction and/or use of different transfer criteria from SAM to MAM management.

Also, evidence shows that MAM children treated with RUTF gain muscle mass rather than excess fat<sup>73</sup>. However, the WHO recommendations of not providing any supplement by default to MAM children is linked to the lack of evidence-informed recommendations on the composition of supplementary foods used to treat children with moderate acute malnutrition<sup>74</sup>. It must be compared to several trials that have been published on the treatment of MAM that showed positive results on weight gain. One systematic literature search in October 2018 showed that the majority of studies in the review found that food products resulted in greater anthropometric gains than counselling or micronutrient interventions<sup>75</sup>.

On the other hand, RUTF supply and cost remain a challenge in the field and can be a major constraint to implementing the combined protocol<sup>76</sup>.

In summary, the evidence on the combined treatment approach is growing but is still presenting important gaps.

### WHAT ARE THE GAPS IN RESEARCH?

Despite the findings from a few rigorous research studies that have been undertaken so far, further evidence on this subject is needed. Many unanswered questions remain from these studies, such as the effect on coverage and the practicalities of implementation at large-scale.



Further research should focus on operational practicalities, cost, caseload and context. Some questions that merit further research (not exhaustive) are:

1. How should the children with SAM be prioritized with limited resources and higher caseloads of MAM children?
2. How does cost and/or cost-savings for implementing a combined treatment change at scale?
3. How does the caseload of SAM change with the combined treatment approach?
4. Does the combined SAM and MAM treatment approach increase program coverage?
5. How does the combined treatment approach affect ease of access and bring more benefits from the perspective of the family/caregiver?
6. How does the combined treatment approach at scale impact upon defaulting, length of stay, early detection?
7. How can we prioritize the treatment of children with the highest risk of mortality given that resources are not sufficient to meet the demand of all children with acute malnutrition?
8. How does this combined treatment protocol impact the use of treatments (e.g. antibiotics) added to the RUTF product?

All further studies should also include components on gender, social-cultural, specific vulnerabilities and economic conditions.

## POSITION

Combined treatment protocol may prove to be effective in emergency contexts and epidemics such as COVID-19, reducing strain on already overwhelmed health workers and health system resources<sup>77</sup>. This protocol can also improve access to moderately malnourished children in vulnerable/food insecure context who are also at risk of dying, and to prevent further deterioration to severe malnutrition.

Action Against Hunger will support the building of evidence related to combined protocols with the same product and the same service providers in emergency settings. Even in the context of epidemics, the implementation of combined protocol needs to be adequately monitored and documented. At this stage, Action Against Hunger does not promote scale up of combined treatment protocol as defined above (same product, same location). Further evidence is required on the effectiveness, cost-effectiveness, and coverage of the combined approach in emergency settings, before wider implementation or scale up is undertaken with combined treatment protocol.

Action Against Hunger will ensure that access to RUTF is prioritized to SAM cases where there is limited supply of the product.



## ADVOCACY MESSAGE

Following the current evidence, Action Against Hunger will continue to advocate with UN agencies, national governments and donors to minimize inefficiencies in the delivery of MAM and SAM treatment and increase the effectiveness of the response.

Action Against Hunger will not advocate for the scale up of and change in policy towards combined protocols (same product, same location) at this time. Action Against Hunger will strive to develop research in various contexts to better understand the full implications of scaling up the combined treatment for SAM and MAM children in one program, in both emergency and non-emergency settings.

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# TREATMENT OF ACUTE MALNUTRITION BY COMMUNITY HEALTH WORKERS

WHO is supporting Universal Health Coverage (UHC), meaning that all individuals should receive the health services they need without suffering financial hardship, with the objective of doubling health coverage by 2030 while ensuring quality of services and cost-effective interventions<sup>78</sup>. To contribute to this target, WHO has made a strong recommendation to support the integration of Community Health Workers (CHWs) into health systems as human resources that contribute in reducing infant mortality ([ii]). Geographic and economic barriers to access to health facilities (HF) are mainly responsible for the low coverage of treatment of severe acute malnutrition (SAM) and in consequence of its high mortality rate.

## WHAT WE KNOW:

The integrated Community Case Management (iCCM)<sup>79</sup> is an equity-focused intervention based on the training and support of non-medical staff (Community Health Workers: CHWs) to give primary health care closer to all families at community level including excluded ones. Within the iCCM initiative, there is evidence regarding the effect that these CHWs have on the reduction of infant mortality related to malaria, diarrhoea and respiratory infections and the treatment coverage of these diseases<sup>80</sup>. The evidence of how these CHWs can treat SAM and their effect on treatment coverage, effectiveness and mortality is emerging.

Between 2014-2016 a pilot study was carried out in Mali and Pakistan. The innovative model in Mali resulted in doubling treatment coverage, CHWs reached sphere standard in Treatment outcome, the quality of care was ensured and the intervention was cost-effective<sup>81 82 83</sup>. In Pakistan the Lady Health Workers (LHWs) also reached sphere standards and they are able to identify uncomplicated SAM, and a majority can provide appropriate nutrition and medical treatment in the community. However, the findings also show that their ability to provide the complete package with an acceptable level of care is not assured. Supervision and training are key to ensure quality. The cost-effectiveness of LHW delivered care complemented by outpatient facility-based care in this setting was found to be poor, but the cost to the beneficiary household of outpatient facility-based care was double that of LHW-delivered care<sup>84 85</sup>.

In both countries, the study demonstrated that this approach resulted in a reduction in default rates, high cure rates with higher quality of care and lower cost for families and community.

A review of operational experience of CHWs treating SAM including 9 countries and a systematic review of frontline workers diagnosis and treating SAM, has evidence in 2019 that most of the intervention with CHWs reached cured rates around 90% or above, all achieved default and death rates below 7% and they increase diagnosis and treatment of SAM. These results have generally been achieved by small scale projects<sup>86 87</sup>.

A recent peer review in 2020 highlighted that the addition of SAM treatment into the curative tasks provided by the CHWs results in a reduction in the severity of the cases admitted and fewer defaulters during the course of the treatment compared to standard CMAM care provided at health facilities<sup>88</sup>.



Preliminary results from two pilot studies in Mauritania and Niger has shown similar results in terms of effectiveness of CHW during 2017-2019<sup>89</sup>. During the same period in Mali, a second phase of the study has been developed to evaluate the effect of supportive supervision and training in this model of intervention. Results are expected in 2021<sup>90</sup>.

The implementation of iCCM+ requires a joint effort with the ministry of health and partners to adapt the model to the specific context at a country level. The current evidence tells us that the implementation of this intervention needs three key steps: 1) context analysis in each country of pertinence and feasibility 2) pilot study in a limited area and/or pilot study in humanitarian context 3) scaling up at a district level to adapt the model of intervention.

### WHAT ARE THE GAPS IN RESEARCH?

Despite the success results of the intervention, Action against Hunger agrees that further analysis is needed to adapt the intervention in different contexts and to evaluate: the impact on the health system on reducing complicated cases that need inpatient treatment as well as the social impact at community level. In this process of adaptation, it is necessary to add to the research the need and possibilities for a closer process of supervision of health staff. There is also a special interest to evaluate the effect of using a combined treatment protocol with CHWs and of the social impact of the intervention.

## POSITION

Action Against Hunger is engaged in providing a quality response to the low coverage of SAM programmes and the mortality associated with malnutrition.

With the current evidence generated, Action Against Hunger is promoting the treatment of acute malnutrition by CHWs in areas with high prevalence of SAM and low SAM treatment coverage. Its development requires prior analysis, adaptation to the context-situation and health system and piloting in each country. This intervention contributes to improving health equity for the most vulnerable families at community level.

## ADVOCACY MESSAGE

Action Against Hunger aims to adapt the management of acute malnutrition policies by integrating SAM treatment into the package of ICCM activities where its piloting has been successful.

To accompany the adoption of the adaptation, Action Against Hunger will ensure that :

1. CHWs integrates into the health system or into a community-based system, to ensure their motivation/salaries
2. The treatment of uncomplicated acute malnutrition is integrated within the ICCM package by making it ICCM+.
3. The RUTF supply chain will be reinforced especially at community level and ensure the inclusion of RUTF in the Essential Medicines List at country level.



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# MANAGEMENT OF ACUTE MALNUTRITION IN INFANTS UNDER 6 MONTHS

Infants <6m have traditionally been considered less vulnerable to malnutrition due to the protective factors of exclusive breastfeeding; however, only two in five infants <6m are exclusively breastfed globally (UNICEF, 2018) and infants in this age group are often exposed to risky feeding practices such as unsafe artificial feeding, prelacteal feeds and early introduction of complementary foods. There is now evidence that acute malnutrition is a serious public health concern in the <6m age group. A 2011 secondary data analysis in 26 high-burden countries estimated that 23% of overall SAM cases were infants <6m<sup>91</sup>. The management of acute malnutrition in Infants currently lags behind successes in treating older malnourished children.

Nowadays, the acronym MAMI means Management of At risk Mothers and Infants under 6 months and that concerns the identification and care of at risk mothers and infants under 6 months, with particular interest in nutrition vulnerability. Within the MAMI approach, we do not distinguish SAM and MAM but at risk infants and growth failure.

The vision for MAMI is that every infant <6m is nutritionally assessed and appropriately supported to survive and thrive at every community and health-service contact.

The core components of the MAMI package are: timely support to feeding, child health and maternal wellbeing. Skilled breastfeeding support is essential in that it is central to infant nutrition and early childhood development as well as providing immunity against infection.

## WHAT WE KNOW:

In 2013, World Health Organization (WHO) Updates on the Management of Severe Acute Malnutrition in Infants and Children recommends for the first time that infants <6m with uncomplicated malnutrition are managed as outpatients, while also acknowledging the low level of evidence to identify and manage cases. The definitions of acute malnutrition in infants <6 months mirror those in older children, focusing on anthropometry.

In the age group of <6M, it is recognized the assessment of nutrition vulnerability is not limited to anthropometric indicators. Ability to feed, medical condition, and maternal mental, physical, and social circumstances are also of primary importance<sup>92 93</sup>. Indeed, risks associated with low anthropometry may not be nutrition related.

In terms of identifying at risk infants, anthropometric indicators have definite practical benefits. For infants under six months, Weight for Length (WLZ) is still recommended in WHO guidance for assessment, which has major practical drawbacks and is poorly evidenced in this age group. The MAMI Special Interest Group aims at building the evidence on how to best identify at risk infants (including adapted anthropometric measures WAZ, MUAC, WLZ)<sup>94 95</sup>.

Recognizing the more complex nature of infant <6 months malnutrition, and thus the need for more comprehensive assessment, the C-MAMI tool<sup>96</sup> ([tool here](#)) translates the WHO 2013 technical guidelines into an operational handbook for use by field-level health care workers. The assessment goes through key areas: anthropometry, feeding practice, clinical condition, and maternal well-being (mother's physical, mental, and nutritional health).



## WHAT ARE THE GAPS IN RESEARCH?

Through the collective effort, great progress has been accomplished over the last 10 years. Shifts in policy were achieved with the WHO SAM guidance update in 2013 including community based management and an explicit section on infants U6m for the first time.

Programming informed by the C-MAMI Tool is being implemented in several contexts. However, while we have seen progress at global guidance level, it is not yet reflected in national guidance uptake. Almost no national guidelines on SAM include community-based management for infants, all still relying on inpatient care.

Countries are demanding more robust evidence:

- How to best identify SAM and determine eligibility to MAMI?
- What interventions work and how in different contexts?
- How are they integrated within existing systems and services?
- What are the implications for cost and capacity?
- Is what it's proposing scalable and sustainable?

## POSITION

Action against Hunger was a lead partner with ENN in the original MAMI Project undertaken to investigate the management of malnourished infants under six months of age. Action Against Hunger needs to learn from the successes and challenges of CMAM, having implemented it as a parallel NGO-led nutrition intervention, and has been working since then to achieve health system integration and thus scale. As an operational agency, Action Against Hunger should help to realise the MAMI vision within the health system.

**Action Against Hunger wants to be engaged to realise the MAMI vision in the building and collating of evidence as part of the collective effort being undertaken. Action against Hunger networks encourage the piloting of the C-MAMI tool and see that as a key opportunity to embrace more holistic maternal and infant health and its social environments. We want also to involve the Ministries of Health with a view to integrating identification and case management into existing services and seeing what can and needs to be leveraged or strengthened. Action against Hunger networks encourage the systematic documentation of the pilots that will be put in place to better understand what interventions work and how in different contexts and how are they integrated within existing systems and services? Given, the well-being of an infant is intimately linked with that of a mother's physical and mental health and nutrition, Action against Hunger network stresses the importance of caring for the health of women. It is a great opportunity to consider a wider ecosystem of growth and health during pregnancy that involves not only nutrition and health but also mental health and care practices.**



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## ADVOCACY MESSAGE

Action against Hunger wants to involve the Ministries of Health with a view to integrating identification and case management into existing services and identifying what can be leveraged and what needs to be strengthened.

Action Against Hunger reaffirms the importance of a holistic response to women's health (physical, mental, social, economic) to reduce child malnutrition.

Action against Hunger considers the MAMI approach as essential to go beyond the anthropometric aspects to detect, manage and ensure the recovery of acutely malnourished children.

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## DIGITALISATION IN CMAM

The World Health Assembly Resolution on Digital Health<sup>97</sup> unanimously approved by WHO Member States in May 2018 demonstrated a collective recognition of the value of digital technologies to contribute to advancing toward universal health coverage (UHC) and other health related Sustainable Development Goals (SDGs). M-Health is recognized to play a major role in increasing access to quality health services, promoting maternal, child and neonatal health<sup>98</sup> for example by registering patients electronically, monitoring of patients, improved diagnosis of diseases, improving care through protocol adherence, and increasing the availability of data for real-time analysis and programme responsiveness. A range of issues within health systems can be addressed using mobile technology, in particular those related to gaps in the quality and implementation of community based acute malnutrition programmes including adequate diagnostics, supply chain, high defaulter rates and patient tracking, and tracking macro-trends for early detection of famine.

Challenges remain high: there is a proliferation of mHealth pilots with NGOs leading their development with unsustainable funds and inadequate planning and capacities for scale up. Ministries of Health often have inadequate systems and infrastructure to establish large-scale mobile health technologies and manage them effectively. Even when the market penetration of mobile technology is high, the most vulnerable often don't have access to mobile phones, network coverage in remote areas remains low, and there is a lack of power sources. Mhealth programme requires time and means.

Action Against Hunger wants to take advantage of the technology to improve the quality and coverage of CMAM, working closely with partners and governments to ensure sustainable integration of digital health in the health system.

### WHAT WE KNOW:

Digital health interventions have demonstrated impacts on a wide range of outcomes, including reducing loss to follow-up, improving adherence to antenatal care visits<sup>99</sup> and increasing adherence to life-saving medications and immunization schedules<sup>100</sup>.

Several systematic reviews have also documented the impact that digital health interventions have had on health outcomes, including improvement of service utilization, as well as clinical outcomes through behaviour change, and enhancement of patient adherence and compliance with treatment. Quality of care and information, support clinical diagnosis and/or decision making, as well as reduction of supply stock-outs<sup>101</sup> are additional positive outcomes that were identified.

On the demand side, the beneficial impact of mHealth through SMS text messaging was observed in chronic disease management, reducing hospitalizations; improving chronic pulmonary diseases symptoms; adherence to treatment; improving glycemic control in diabetes patients; and reducing weight in overweight and obese patients<sup>102</sup>.

On the offer side, there is strong evidence that mobile device-based (mHealth) apps can improve frontline health workers' ability to apply treatment protocols more effectively and to improve the provision of supply chain management. For example: An application called LeDa co-created by Terre des Hommes and the Ministry of Health in Burkina Faso has digitized the WHO medical protocol (IMCI) for guiding health personnel to diagnose sick children accurately.



This application showed significant improvements in quality of care, a high acceptance of the approach from all levels of the health system and cost reduction after initial investments. Results show a reduction between 6% to 15% of antibiotics prescription and a 50% improvement in adherence to the IMCI protocol when leDA is used<sup>103 104</sup>.

### WHAT ARE THE GAPS IN RESEARCH?

Despite the increase of evidence, the digital health intervention still has limited geographic scale. Effectiveness still needs to be demonstrated in details (health outcomes, use of services, coverage). Concerning digital health in CMAM, despite numerous pilot initiatives, evidence is still lacking including on its potential for nutrition information management, nutrition surveillance and monitoring of CMAM programmes.

## POSITION

Action Against Hunger is involved in 3 major programs in utilization of digitalization application:

### 1. SMART+

SMART+ is an end-to-end digital infrastructure that will provide simplified and improved collection, analysis, dissemination and use of malnutrition and multi-sectoral data. This innovation will revolutionize the emergency humanitarian and development sectors by eliminating cumbersome manual methods and associated human errors, standardizing multi sectoral indicators, improving the identification of need and subsequent access to services, and equipping global decision makers with real time vital data. High quality data will therefore be made available and seamlessly tracked without any losses while facilitating faster and more efficient delivery of life-saving services. The core innovation of SMART+ is the provision of a secure, transparent and complete end-to-end digital infrastructure that incorporates the entire data collection and reporting chain.

Action Against Hunger will continue to develop the SMART+ infrastructure and pilot the innovation primarily in East Africa and other regions and countries where SMART initiative has existing projects.

### 2. SAM Photo project:

Together with the EPINUT group and the company Tyris within a program, an application is being developed for use in mobile phones for the diagnosis of malnutrition. The method used is morphometry which allows the generation of an algorithm and its application to the image of a specific part of the body of children between 6 and 59 months to know their nutritional status<sup>105</sup>.

The project is in its pilot phase in Senegal for diagnosing the acute form of malnutrition by the community health agents using this diagnostic tool. The pilot phase has also begun in Guatemala to assess whether this methodology can also be used for the diagnosis of other forms of malnutrition such as chronic malnutrition.

In the coming years, the project has defined two main objectives. One is to incorporate it as a tool for rapid SMART surveys and the second is to take the app to the countries with the highest prevalence of acute malnutrition, thus enabling an improvement in the quality of the diagnosis and an increase in the coverage of nutrition-related services.



### 3. AleDIA:

An alliance between Action Against Hunger, Terre des Hommes, and World Vision International for the development of a common digital solution named AleDIA. The principle is based on the integration of the Integrated Management of Childhood Illnesses (IMCI) and Community-based Management of Acute Malnutrition (CMAM) protocols and existing mobile applications to address the most deadly childhood diseases and manage acute malnutrition to reduce child mortality.

The application will aim at reducing the workload of healthcare workers and allow for CMAM patients to be included for daily consultations. This application will facilitate the identification of children with SAM and other childhood illnesses and, most importantly, those at highest risk of death and in need of more advanced treatment, but also help with decision-making. This ambitious vision will work on the patient's journey and ultimately on how to implement the quality of CMAM. Action Against Hunger sees this project also as a unique chance to materialize SAM integration within Health.

**Action Against Hunger highly encourages other initiatives at mission level on utilization digital health, especially m-health.** Gender and inclusion should be systematically taken into consideration in such programs.

There is a pathway to follow in designing a digital transformation. Key elements need to be taken into consideration such as: the existing ecosystem (what exists, what works); the national digital strategy, interconnectedness, demands from beneficiaries (design with user; increase accountability); the feasibility: (choice of technologies and costs); partnerships including with local partners ; respect of ethical aspect and confidentiality. All the projects should be designed for scale.

**Action Against Hunger recommends to implement the different steps of the digital transformation pathways to succeed in such innovation.**

## ADVOCACY MESSAGE

Action Against Hunger encourages digital solution utilisation as a mean to reach better nutrition and health outcomes.

Action Against Hunger recognizes the existence of a high number of pilots and apps and reminds that actors of digital health should avoid fragmentation and use what is existing and functioning.

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