Adaptations to community-based acute malnutrition treatment during the COVID-19 pandemic

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What we know: The COVID-19 pandemic required that outpatient and community-based management of acute malnutrition (CMAM) programmes was adapted to reduce the risk of virus transmission.

What this article adds: Experiences and lessons learned around initial adaptations made to CMAM programmes in the light of COVID-19 were gathered through multiple surveys and interviews with programmers in over 40 countries. The adaptations implemented most frequently were Family mid-upper arm circumference (MUAC), a change in the frequency and method of follow-up visits and modified admissions and discharge criteria. This article presents initial lessons learned and recommendations for each of these adaptations. Regardless of the adaptation made, close collaboration and clear communication between caregivers, communities, partners and government entities were found to be critical. Programme implementers should continue to aim to protect staff and programme participants while continuing service provision, using personal protective equipment and capitalising on virtual trainings and meetings as much as possible. Building staff surge capacity may also mitigate unexpected shifts in staffing structures due to illness or travel restrictions. Innovations and adaptability in the face of supply chain and other programmatic disruptions require flexible funding sources and partnerships.

Introduction: A call to adapt life-saving nutrition programmes during COVID-19

Past epidemics demonstrate that disrupted health and nutrition services can be especially deadly for young children. Therefore, after the onset of the COVID-19 pandemic, guidance was quickly released by the United Nations Children’s Fund (UNICEF), the Global Nutrition Cluster (GNC), Global Technical Assistance Mechanism for Nutrition (GTAM) and the World Health Organization (WHO). This guidance suggested a range of adaptations to acute malnutrition management programmes to enable service continuity (UNICEF, 2020a; UNICEF, 2020b) while reducing the risk of virus transmission (Roberton, 2020; World Vision, 2020). In response, a variety of programme adaptations were implemented around the world yet questions remained.

Which adaptations have been implemented by whom and where? What are the operational implications and lessons learned?

An effort to document lessons learned

Action Against Hunger, with support from the United States Agency for International Development (USAID) and in collaboration with UNICEF and the United States Centers for Disease Control and Prevention (CDC), began a mixed methods study to systematically document, synthesise and analyse information regarding programmatic adaptations in the management of acute malnutrition in children under five in the context of COVID-19. Specific adaptations studied included the introduction of measurement of mid-upper-arm circumference (MUAC) by caregivers (referred to as Family MUAC measurement taken by trained individuals, Gambella, Ethiopia
interviews had been conducted. Responses to 36 semi-structured interviews for implementing organisations, semi-structure analyses of programmatic data to ex

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Combined SAM and MAM treatment in one protocol or programme: Development of acute malnutrition protocols that manage and treat cases of SAM and MAM on a spectrum, whereby both SAM and MAM cases are managed utilising one admission/discharge criteria, one therapeutic product, etc.

Modified admission and/or discharge criteria: The most common anthropometric measurements used for determining eligibility for admission into a nutrition programme are weight-for-height (WFH), mid-upper arm circumference (MUAC) and oedema. This adaptation could include a shift to using only one or two of these criteria or adjusting the thresholds for admission.

Family MUAC (also referred to as Mother MUAC): Caregivers are trained to monitor their children’s MUAC at home and to refer them to a community health worker (CHW) or health facility when they detect signs of acute malnutrition.

SAM treatment by CHWs: Initiatives such as integrated community case management (iCCM)+Nut where children presenting with SAM are diagnosed and treated through a community-based platform that does not include a facility component.

Use of low-literacy tools by CHWs: Low-literacy tools are developed to facilitate the work of CHWs who may have low literacy or numeracy skills.

MUAC), reduced frequency of follow-up visits during treatment, modified admission criteria, reduced dosage and acute malnutrition treatment by community health workers (CHWs) among others (Box 1). At the time of publication, data collection was on-going and included an online survey for implementing organisations, semi-structured interviews with programme staff and secondary analyses of programmatic data to examine trends and possible associations between different adaptations and programme indicators. It is anticipated that data collection will continue until January 2021 with full results and analysis available mid-2021.

As of November 23, 2020, 19 organisations (17 non-governmental organisations (NGOs) and two United Nations (UN) organisations) running operational programmes in 36 countries had completed the survey and 36 semi-structured interviews had been conducted. Responses to date indicate that most implementers began protocol modifications in April 2020 following the COVID-19 pandemic declaration and subsequent national and global guidance. The process of selecting which adaptations to implement typically followed traditional decision-making structures specific to each context. Decisions were most often made at the national level, with leadership and input from actors such as the Ministry of Health, the national Nutrition Cluster and NGOs. Figure 1 shows an overview of the adaptations made to outpatient and community-based acute malnutrition programming. The most frequently implemented adaptation was Family MUAC followed by modifications made to scheduled follow-up appointments for acute malnutrition treatment. While some countries have begun to return to ‘pre-COVID-19’ protocols, most are unsure when (and if) protocols will revert.

Box 1 Definitions of programme adaptations

Modified frequency of follow-up appointments: Adjusting the timing for when children who are enrolled on an outpatient programme (OTP) or Targeted Supplementary Feeding Programme (TSFP) return to the facility for follow-up consultations and ration distribution. For example, children enrolled on an OTP may come to a clinic every other week instead of weekly.

Modified dosage of therapeutic and/or supplementary foods: Change in the amount of ready-to-use therapeutic food (RUTF) or supplementary food (RUSF) prescribed for children’s consumption on a daily or weekly basis. For example, clinic staff may use non-standard methods to calculate RUTF/RUSF dosage or may reduce the dosage of RUTF/RUSF for each child.

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Using Family MUAC for continued screening and surveillance

During the pandemic, movement restrictions and social distancing inhibited screening and surveillance by health professionals and volunteers, significantly reducing detection and referrals of wasted children for treatment. Governments and implementing partners therefore either piloted or scaled up the Family MUAC approach, whereby caregivers are provided MUAC tapes and taught to monitor their own children’s MUAC to increase detection service coverage and timely referrals.

Overall, programme staff implementing Family MUAC reported that initiating and scaling this approach was largely successful. While the end activity of Family MUAC is consistent – training caregivers to measure children’s MUAC – programme design varied widely, with some building on existing structures (such as Care Groups) and others using a stand-alone cascading training model. Respondents interviewed had used both virtual and in-person training. Caregivers were eager to monitor their children’s health and clinic staff offered anecdotal reports of increased self-referrals. Respondents indicated that follow-up with caregivers after training may enhance measurement accuracy. A limited number of MUAC tapes was identified as a common challenge, thus many programmes targeted at-risk families such as those with children discharged from acute malnutrition treatment programmes.

Box 2 highlights a case study of scaling up Family MUAC in Kenya. Preliminary findings from this case study and other interviews include the following recommendations:

- Train mothers how to check for oedema in addition to measuring MUAC and integrate sensitisation on the causes of malnutrition and measures to prevent acute malnutrition.
- Engage with MUAC tape suppliers to procure sufficient tapes for wide distribution to maximise coverage. In the absence of sufficient tapes, target tape distribution to caregivers of children vulnerable to acute malnutrition (e.g., children discharged from acute malnutrition treatment programmes at risk of relapse).
- Clearly delineate the roles of community volunteers, clinic staff and caregivers in screening and referrals to streamline processes, maximise collaboration and assuage tensions.
- Prepare clinics for elevated caseloads that may result from an initial increase in self-referrals.
- Retrain caregivers who self-refer children with inaccurate measurements and encourage them to continue health-seeking behaviours.
- Family MUAC should complement, rather than replace, traditional community-based screenings and surveillance coverage.

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Box 2 Case study: Family MUAC in Kenya

Kenya’s Ministry of Health (MoH) and the Family MUAC Task Force accelerated Family MUAC rollout in April 2020 to promote surveillance and early case identification and referral during the pandemic. Action Against Hunger Kenya and the Kenya Red Cross (KRC), in collaboration with the MoH, scaled up Family MUAC alongside organisations such as Save the Children and Concern Worldwide, with support from the Office of Foreign Disaster Assistance (OFDA), Swedish International Development Cooperation (SIDA) and UNICEF. The National Drought Management Authority (NDMA) also incorporated Family MUAC into monthly monitoring activities in July 2020 to meet on-going demands for data for drought early warning bulletins and the National Health Information System (NHIS).

The MoH, with support from the KRC, Action Against Hunger Kenya and others, trained community health volunteers (CHVs) and NDMA field monitors virtually, who then cascaded training to caregivers at home or in small groups. CHVs continuously followed up with caregivers to encourage screenings, refresh knowledge and refer malnourished children for treatment. One respondent reported that virtual training cost less than in-person training. Small group trainings allowed for social distancing but required more time and resources.

Programme staff reported widespread acceptance of Family MUAC. Caregivers appreciated assessing their children privately, as they could face stigma if a child was publicly identified as malnourished. Using colour-coded tapes was also perceived as easier than numbers-only tapes. Implementing Family MUAC also reportedly improved relationships between caregivers and staff and volunteers. Caregivers were previously concerned that staff or volunteers would favour some children in determining eligibility and became frustrated when their children were not referred or admitted due to limited knowledge of MUAC measurement and interpretation. Expanded awareness through Family MUAC mitigated these issues. Respondents also indicated that caregivers could better track their children’s progress, reinforcing programme guideline adherence.

A limited number of MUAC tapes was a key constraint, requiring targeted tape distribution instead of full coverage. Respondents also warned that clinics must ensure adequate nutrition supply to cover increased caseloads. However, accuracy also remains an area for improvement, as turning caregivers away from a facility due to inaccurate self-referrals may discourage health-seeking practices. Consistent follow-up and refresher training with caregivers can improve accuracy.

Box 3 Case study: Modified frequency of follow-up appointments in Ethiopia

In May 2020, Ethiopia’s Ministry of Health, in collaboration with the Nutrition Cluster and the United Nations High Commissioner for Refugees (UNHCR), released guidelines for adapting community-based management of acute malnutrition (CMAM) programmes, including reduced frequency of follow-up visits. Action Against Hunger Ethiopia mainly applied these adaptations to its nutrition programmes within refugee settlements. Follow-up for children enrolled on acute malnutrition treatment programmes changed from weekly to biweekly, with larger ration sizes to cover the increased time between visits.

At first, fewer children attended their newly scheduled appointments. Staff reported caregiver confusion about the scheduling and reluctance to seek health services for fear of COVID-19. This confusion was seen primarily within refugee settlements. In contrast, surrounding host communities have stronger health extension services, ensuring clearer and more consistent messaging. Programme staff hypothesised such outreach facilitated better service utilisation within host communities as compared to settlements. Therefore, Action Against Hunger employed increased community health workers for outreach.

Staff interviewed reported anecdotal observations of increased sharing and selling of RUTF and/or RUSF, more visible in refugee settlements than host communities likely due to increased economic needs and limited alternative livelihood options during the pandemic. Additionally, caregivers from refugee settlements reported challenges storing the rations securely, leading to unintended sharing. Staff also expressed concerns that more children were either deteriorating or recovering more slowly with less frequent clinic visits which may attributed to less opportunity to assess for and treat co-morbidities. CMAM programme data (Figure 2) shows an increase in average length of stay (LOS) in both outpatient therapeutic programmes (OTP) and targeted supplementary feeding programmes (TSFP) since the start of the pandemic although this cannot be directly attributed to the programme adaptations. Given these concerns, in July 2020, weekly follow-up appointments resumed on a case-by-case basis for children at higher risk of complications.

Modified frequency of follow-up appointments during treatment to reduce crowding and travel

To reduce crowding and facilitate social distancing at clinics, implementers have adapted the frequency of follow-up visits whereby caregivers return to the clinic for their child’s nutritional and health assessment and ration distribution. While typical treatment programmes involve weekly follow-up visits, protocols during COVID-19 were adapted to include fortnightly or monthly visits.

Respondents indicated this approach successfully reduced crowding at clinics and demands on caregivers’ time. Communities with strong health extension services reported better uptake if CHWs conducted home visits and supported families during the extended period between appointments. However, staff in multiple contexts anecdotally observed increases in the selling and sharing of nutrition products, possibly due to the larger rations distributed at each visit combined with families’ livelihoods constraints. Anecdotally, respondents were also concerned that enrolled children’s nutrition status may deteriorate during the longer gaps between visits, resulting in medical complications. Staff reported varied experiences in workload, some experienced a reduced workload due to fewer children at clinics, yet others experienced increased workload to accommodate scheduling and logistical support.

Box 3 captures Action Against Hunger’s experience in Ethiopia implementing this modification. Preliminary findings from this case study and other interviews included the following recommendations:

- Provide strong community sensitisation to reduce confusion among caregivers and increase uptake of new schedules.
- Explore storage alternatives for families unable to safely manage the larger ration sizes that accompany less frequent clinic visits.
- Increase home visits to ensure robust caregiver support in dosing larger rations between appointments.
- Schedule more frequent appointments for high-risk children.
- Ensure existing supply chains can support supply prepositioning to meet increased nutrition product needs to cover extended duration between visits.

Modifying admissions/discharge criteria to reduce risk of COVID-19 transmission

To reduce contact between staff and children, some programmes reduced the number of anthropometric measurements taken (e.g., weight, height, MUAC and oedema) to assess admission eligibility. Adapted protocols most frequently included assessing only MUAC and oedema, while some also expanded MUAC thresholds after conducting a scoping assessment to capture children with low weight-for-height Z-scores (WHZ).
In multiple interviews, staff cited concerns about no longer admitting children with low WHZ upon discontinuing weight and height measurements. However, staff appreciated the reduced workload associated with eliminating these measurements although this may ultimately be offset by an overall increased workload associated with expanding MUAC thresholds. Eliminating these measurements also reduced caregivers’ time at the site. Respondents interviewed expressed concerns regarding insufficient supplies to meet the increased caseload due to implementing expanded MUAC thresholds.

The case study in Box 4 highlights Action Against Hunger’s experience in Uganda implementing this adaptation. Preliminary findings from this case study and other interviews include the following recommendations:

- Consider conducting assessments and scenario planning to determine if higher MUAC thresholds would capture children otherwise identified by WHZ, as well as whether there is sufficient capacity (e.g., staffing, supplies, etc.) to meet a potentially increased caseload.
- If expanding admissions thresholds, coordinate with donors and suppliers to ensure that supply chains can meet increased needs for RUTF/RUSF and other nutrition supplies, as well as sufficient staff and space to accommodate potential caseload growth.
- Emphasise staff and community sensitisation on the revised clinical definitions of malnutrition when modifying admissions and/or discharge criteria to address a new perception of what acute malnutrition is and promote community acceptance of the changes. Also, consider the potential long-term consequences of switching thresholds, potentially back and forth, which could potentially undermine the work because of repeated redefining of what is a “malnourished” child.
- Provide additional training to staff and caregivers to ensure proper implementation of adapted classifications of at-risk or malnourished children under new criteria.
- Develop guidance for organisations implementing both expanded thresholds and Family MUAC to align MUAC cut-offs and referral processes.

**Continuing treatment of acute malnutrition when facilities are inaccessible**

COVID-19 lockdowns and movement restrictions forced many health and nutrition providers to find alternative methods for reaching malnourished children to ensure service continuity. In locations with sufficient telecommunications infrastructures, phone and/or video calls were conducted to follow up with enrolled children and to counsel caregivers. In other locations, programme staff and CHWs conducted home visits to deliver health and nutrition services.

Overall, respondents reported that phone-based counselling allowed for continued contact with children in acute malnutrition treatment programmes despite movement restrictions. Clinic staff were sometimes able to engage with caregivers more fre-
Box 5 Case study: treating acute malnutrition when health facilities are inaccessible in India and Nepal

In India, the government restricted movement and closed community-based clinics and other nutrition service delivery platforms for several months. To treat acute malnutrition during the mandated closures, Action Contre la Faim India (ACF-IN), among other adaptations, shifted to telephone counselling to reach children at home. ACF-IN called families directly or through other community members’ phones. Phone-based counselling continued for the duration of the lockdowns and will continue for children in hard-to-reach areas or whose caregivers lack transportation.

Respondents reported that phone-based counselling successfully maintained and sometimes increased contact and was well-received. Although children identified as deteriorating were referred for treatment as available, relying on caregivers to self-assess their child’s nutritional status was not ideal. The costs associated with phone-based counselling were reportedly lower than those associated with home visits; however, each individual call lasted longer. Depending on other responsibilities, adding phone-based counselling notably increased the workload of CHWs. Although health facilities did not close in Nepal, lockdowns and travel restrictions limited mobility. In April 2020, Action Against Hunger Nepal (ACF-NE) therefore reduced the frequency of follow-up visits and engaged with caregivers over the phone to check children’s status. ACF-NE coordinated with the District Administration Office and local police to allow willing caregivers to visit health facilities for follow-up visits. Additionally, ACF-NE mobilised staff to conduct home visits for those restricted from travelling to the nutrition treatment centres or reluctant to go to health facilities for fear of contracting COVID-19. During these visits, staff monitored children’s progress using MUAC and distributed rations using dosage based on the last recorded weight.

Staff reported that some caregivers preferred home visits although others declined these for fear of COVID-19. Staff also expressed that conducting home visits was challenging and time consuming, particularly for children in hard-to-reach areas. The programme’s low caseloads during this period (likely due to suspended community screenings) enabled this approach’s success as staff could allocate more time to each child. After restrictions relaxed, caregivers were requested to resume visiting facilities for treatment.

Conclusions

As the pandemic continues, so will nutrition programmes continue to innovate and adapt. While data collection is expected to continue until January 2021, participants have already highlighted several key takeaways related to the most frequently implemented adaptations: Family MUAC, frequency and method of follow-up visits and modified admissions and discharge criteria. Final results from the project will be available mid-2021.

Family MUAC was the most widely implemented adaptation, with positive feedback from both caregivers and clinic staff. Respondents indicated that this approach, above all others, would likely continue beyond the pandemic. Increased supply of MUAC tapes and developing guidance and standard monitoring and evaluation indicators would facilitate successful implementation and scaling.

References