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Updating National CMAM Guidelines
Lessons from Previous Experiences

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Executive Summary

Purpose: The World Health Organization (WHO) are updating the normative guidelines on the prevention and treatment of child wasting and will be released in 2022/23. However, in order to impact practice on the ground, the new WHO guidelines will need to be translated into national guidelines. This paper explores the past experiences of developing and/or updating Community-based Management of Acute Malnutrition/Integrated Management of Acute Malnutrition (CMAM/IMAM) guidelines across a range of diverse countries to better guide the upcoming processes.

Methods: Twenty qualitative, in-depth key informant interviews (KIIs) were conducted with key informants (KIs) coming from seven different countries. The qualitative findings were grouped into themes and categories to highlight the lessons learned on how best to support the development of and updates to national guidelines. A CMAM/IMAM guideline mapping matrix was also developed to capture the name, content, language, year of development, year of the update as well as plans for any upcoming revisions of national CMAM/IMAM guidelines.

Results: The process used for developing and updating CMAM/IMAM guidelines varied greatly across the seven different countries, but five steps were consistently present: 1) identifying the need for guidelines, 2) engaging with the Ministry Of Health (MOH), 3) recruiting consultants, 4) engaging with stakeholders, 5) followed by writing, reviewing, finalizing, and disseminating the guidelines were all required. The overall time for the original development of guidelines ranged from eight to 18 months and updates took anywhere from one and a half months to two years. The rigor of development for gathering and summarizing the evidence of the guidelines varied from country to country.

The stakeholders involved in the process included relevant UN agencies, INGOs, local NGOs, foundations, donors, governments, professionals, and academics. Representation from civil society and communities was notably absent in most countries, contradicting their importance in the governance of primary health care. The MOH always led the process, however, not all stakeholders were satisfied with the process. The cost of developing and updating CMAM/IMAM guidelines was largely unknown, as were the budget line items contributing to the overall completion of this process.

Countries were predominantly motivated to complete their guideline development and update process because they wanted to align with the WHO guidelines while taking into account the local contextual challenges and differences. The most common barriers that countries faced in this process were funding and stakeholder consensus. The most popular facilitating factors included MOH leadership and commitment, an active nutrition working group, and stakeholder commitment and availability.

Concerning readiness, most countries interviewed were aware that a WHO update is imminent but some KIs were unaware. Most KIs had learned of the update through word of mouth rather than official notifications. When countries were asked if they had plans to update their CMAM/IMAM guidelines, two countries responded by saying they would need to consider what the updates were and how they would translate to their contexts, as they had just recently updated their guidelines. Two countries were actively awaiting the new guidelines ahead of making any updates.

All KIs were asked hypothetically about the different types of support they would need or like for updating their CMAM/IMAM guidelines. The following needs were identified:

1. Technical (nutrition) support
2. Financial support
3. Human resource support
4. Capacity building for health workers
5. Support from an external consultant
6. Support from guideline training packages and material
7. Support with guideline implementation
8. Support from WHO to get started, including the provision of a framework/roadmap and budget template
9. Documentation on what is new in the latest update
10. Introducing CMAM/IMAM curriculum into medical schools to build capacity
11. Remote support with documenting implementation experiences and reviewing the new guidelines

Of the CMAM/IMAM guidelines, 95 were included in the mapping matrix. Participants include 57 UNICEF employees, 22 WHO employees and 1 NGO employee and represent 72 countries across six UNICEF/four WHO regions. A detailed list of regions, countries, year of publication, guideline content/status/language, alignment with WHO, stakeholder involvement, revisions, planned updates, and requested support is provided as a separate document.

Recommendations arising: The following list of recommendations is intended for any future guideline development and update processes that National Governments, UN agencies and/or Civil Society may undertake:

Recommendations to national governments:

1. Commit to allocating one dedicated person to oversee the CMAM/IMAM guideline development and update process as existing staff do not have the bandwidth to take this on.

2. Work through the five identified "knowledge layers" of the WHO SMART Guidelines ahead of making guideline updates to encourage digital adaptations.
3. Mobilize civil society, including NGOs, to participate in the guideline development and updating process.
4. Facilitate the creation or maintenance of a CMAM/IMAM working group and ensure their participation in the guideline update process.
5. Commit to a capacity analysis of the health system to better understand how to implement CMAM/IMAM and at what cost, and to ensure contextualization of the new WHO recommendations.
6. Determine the cost of developing and updating the national CMAM/IMAM guidelines and budget funds accordingly on an annual or bi-annual basis.

Recommendations for WHO and other relevant UN agencies:

1. Conduct multiple and timely briefing sessions on the new normative guidelines for the treatment and prevention of child wasting to ensure that national stakeholders are aware of the details. This could include documents (e.g. roadmap to guideline development and updates, introduction to guidelines, an example of budget required, etc.) on how they could get started and what they should expect.
2. Create separate "Roadmap" or "Framework" process templates for both the development and updates of CMAM/IMAM guidelines. These templates should provide realistic step-by-step guidance on how to develop or update a guideline, including estimated timelines.
3. Avoid any reflection of the internal struggles, mandates, and funding allocations of each contributing UN agency in the national CMAM/IMAM guidelines process.
4. Develop effective training packages that encompass all guideline development and update processes, including flow charts with tables and diagrams, and use innovative technologies.
5. Develop a generic budget template with estimates for the development and update of CMAM/IMAM guidelines to ensure appropriate funding allocations at the onset of the process.
6. Consider developing complementary guidelines or add-ons to the existing guidelines focusing on supply chain management.

Recommendations to civil society organizations (including INGOs and local NGOs):

1. Engage and participate actively in the guideline development process as participating members of the national CMAM/IMAM Technical Working group (if present).
2. Conduct ongoing pilot tests regarding contextual adaptations and financial costs surrounding the implementation of the different components of the guidelines, to be shared with National Governments as a means of informing their guidelines.

Conclusions: The lessons learned and recommendations generated from this exercise are numerous and their application cannot be underestimated for future guideline development and update processes. Once released, most countries are motivated to consider updating their national guidelines in alignment with the new WHO normative guidance and more support can be offered to ease this process for stakeholders. Doing so would be one more positive action towards reducing the proportion of children suffering from wasting to <3% by 2030.

Introduction

The World Health Organization (WHO) is updating the normative guidelines on the prevention and treatment of wasting[1]. In anticipation of its 2022/23 release, the Global Nutrition Cluster Technical Assistance Wasting Global Thematic Working Group (GNC Technical Alliance Wasting GTWG) is working proactively to explore how national Community-based Management of Acute Malnutrition/Integrated Management of Acute Malnutrition (CMAM/IMAM) guidelines were last updated and what we can learned from this process to better support any upcoming revisions once the new guidelines are released.

WHO works with Member States and partners to develop evidence-informed guidance based on robust scientific evidence and ethical frameworks. Between 1956 and 1991, the physiological and nutritional knowledge gained from the research conducted in the Tropical Metabolism Unit in Jamaica formed the basis of the WHO guidelines for the management of severe acute malnutrition (SAM). The first guidelines were published by the Pan American Health Organization (PAHO) in the 1970s and WHO in 1981[2]. As these guidelines began to be used more widely, practical limitations became apparent and therefore new guidelines were drafted in the early 1990s, which were applied in many emergency situations, including the Rwanda genocide in 1994. Extensive revisions of this draft guideline took place throughout the 1990s, and the product was the publication of the 1999 WHO Manual entitled "Management of severe malnutrition: A manual for physicians and other senior health workers"[3]. These guidelines recommended that all severely malnourished children be hospitalized, given fortified milk, and given appropriate treatment, including antibiotics. Between 1999 and 2012, one update was published in the form of a companion guideline (to the 1999 guidelines), which focused on inpatient treatment of severely malnourished children[4].

[1] The term 'wasting' within this document incorporates severe acute malnutrition (SAM, which includes severe wasting – also known as marasmus, kwashiorkor and marasmus kwashiorkor both with and without the presence of oedema) and moderate acute malnutrition (MAM) (UN Global Action Plan on Child Wasting, 2021)

[2] World Health Organisation (1981). The treatment and management of severe protein-energy malnutrition. Geneva: World Health Organization; 1981.

[3] World Health Organisation (1999). Management of severe malnutrition: a manual for physicians and other senior health workers. Geneva: World Health Organisation; 1999

[4] Ashworth A, Khanum S, Jackson A, Schofield C. Guidelines for the inpatient treatment of severely malnourished children. Geneva: World Health Organisation. 2003.

After more than a decade, the WHO guidelines were updated again in 2013 to reflect new opportunities and technologies that allow severely malnourished children who have an appetite and no evident medical complications to be effectively treated at home with specially formulated foods[5]. The groundwork contributing to this guideline began in 2000 with the introduction of the decentralized community-based model involving Ready-To-Use-Therapeutic-Foods (RUTF). Several trials using this approach were supported by Concern Worldwide, Valid International, and Save the Children. All this work and more, resulted in several publications, including the 2006 Community-based Therapeutic Care (CTC) manual[6], the 2008 Community-based Management of Acute Malnutrition (CMAM) Training Manual[7], and the 2012 Protocol for Integrated Management of Acute Malnutrition (IMAM)[8]. This collection of work informed the WHO's 2013 guideline revisions. The 2013 guidelines also include, for the first time, guidance on the management of acute malnutrition in infants less than six months. In 2015, the Sustainable Development Goals (SDGs) were developed, and Member States committed to eliminating all forms of malnutrition by 2030. This included the World Health Assembly targets that aimed to reduce the proportion of children suffering from wasting to <5% by 2025 and <3% by 2030[9]. However, despite the adoption of these targets, the rates of wasting remained unchanged. This triggered the need for a major policy shift, in which all forms of malnutrition are tackled, and a UN consultation on the prevention and treatment of wasting in children. The consultation resulted in the UN agencies[10] working together on a Global Action Plan (GAP) for Child Wasting to guide individual and collective action and accelerate progress toward the SDGs. The GAP was released in November 2021. The plan also identified WHO as the lead agency responsible for updating this normative guidance globally and regionally, while working with other UN agencies and key stakeholders to support the review and update of national guidelines. The new WHO guidelines on management and prevention of child wasting are scheduled to be released in 2022/23. It is expected that they will now include new sections on preventing wasting and managing moderate acute malnutrition (MAM), as well as updates on managing SAM in children and growth faltering in infants less than six months.

While the WHO guidelines are hugely influential, practice on the ground is dictated by each country's individual national guidelines. For the latest WHO guidelines to effectively contribute to reducing the proportion of children suffering from child wasting by 2025, they must be quickly and efficiently translated into contextualized national guidelines and subsequently into practice.

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5 World Health Organisation (2013). Guideline: updates on the management of severe acute malnutrition in infants and children. Geneva: World Health Organisation; 2013.

6 Valid International (2006). Community-based Therapeutic Care (CTC). A Field Manual.

7 FANTA (2008). Training Guide for Community-based Management of Acute Malnutrition (CMAM). Guide for trainers.

8 Golden, M., Grellety, Y (2011). Integrated Management of Acute Malnutrition (IMAM). Generic Protocol.

9 The extension of the 2025 Maternal, Infant and Young Child Nutrition targets to 2030: discussion paper. Geneva: World Health Organization, United Nations Children's Fund; 2018 (https://apps.who.int/nutrition/global-target-2025/discussion-paper-extension-targets-2030.pdf?ua=1, accessed February 1st, 2020).

METHODS

Qualitative, in-depth key informant interviews (KIIs) were conducted with 20 key informants (KIs) from seven focal countries as well as four KI independent consultants, whose countries of origin are kept anonymous. All of the seven focal countries and five independent consultants were identified by the GNC-TA Wasting GTWG. The countries were selected for global representation as well as CMAM/IMAM guideline development and/or update status. The two to three KIs per country were identified by the UNICEF and WHO Regional Offices and as people with experience developing and/or updating national CMAM/IMAM guidelines.

Table 1 shows that 77% of the KIs who were contacted agreed to participate. Although the aim was to reach 100% compliance, some KIs were either unavailable, too busy or unresponsive to emails. The mapping and interviews took place from March 8 to June 7, 2022.

Table 1 : Planned vs. actual participating Key Informants

COUNTRY	Planned	Actual
Global (Independent Consultants)	5	4
Burkina Faso	3	1
Colombia	3	2
Nigeria	3	2
Pakistan	3	3
Philippines	3	3
Uganda	3	2
Yemen	3	3
TOTAL	**26 (100%)**	**20 (77%)**

Table 2 shows that out of the 20 KIs interviewed, five were UN employees, seven were MOH staff, three were NGO staff, one was a professional or academic, and four were international consultants.

[10] The Food and Agriculture Organization of the UN [FAO], the Office of the High Commissioner for Refugees [UNHCR], the UN Children's Fund [UNICEF], the World Food Programme [WFP] and the World Health Organization [WHO] have developed the GAP on Child Wasting. More information on: Childwasting.org

Table 2: Key Informants' place of employment, per country

CURRENT EMPLOYMENT	NO. OF KEY INFORMANTS	COUNT
UN AGENCY	5	PAK (1), Philippines (1), Yemen (2), Colombia (1)
MOH	7	Burkina Faso (1), PAK (1), NGA (2), Philippines (2), Colombia (1)
NGO	3	PAK (1), Uganda (1), Yemen (1)
PROFESSIONAL/ ACADEMIC	1	Uganda (1)
INDEPENDENT CONSULTANTS	4	Independents (4)
TOTAL	20	20

Figure 1 visually represents the seven global focal countries. They include:

1. Burkina Faso
2. Colombia
3. Nigeria
4. Pakistan
5. Philippines
6. Uganda
7. Yemen

Figure 1: Map of the seven focal countries depicting global representation

Qualitative data obtained from these health professionals was based on a preliminary administrative survey provided before the interview (APPENDIX 1) as well as in-person or virtual interviews conducted using a standard interview guide (APPENDIX 2). The preliminary survey was prepared by the interviewer and made available online via Microsoft Forms and provided in French, English, and Spanish.

The interview guide was then created using an original list of key questions developed by the GNC-TA Wasting GTWG, plus relevant questions related to process (not content) coming from the Appraisal of Guidelines for Research and Evaluation II (AGREE II) Framework. Probing questions were also included alongside each key question to encourage deeper reflection.

Each interview was conducted remotely using video call software and commenced with the same introductory script that was read by the Interviewer (APPENDIX 3). This ensured that each participant was fully informed about the purpose of the project and what they could expect in regards to the interview and confidentiality. Each interview was conducted in English, French, or Spanish. Interviews conducted in Spanish were done so via simultaneous translation. With the participant's consent, each interview was audiotaped and lasted between 60 to 75 minutes. All interviews were completed using the methods of brief note taking and audio recording. All recordings were deleted after the recordings were transcribed anonymously.

Transcripts were reread to identify, highlight, and group themes and categories. Themes were identified based on the questions asked and consolidated to provide qualitative information. These qualitative impressions were then grouped into categories to highlight lessons from past experiences and insights on how best to support the development and updates of national guidelines.

To create the guideline mapping matrix, as per Objective 2, WHO and UNICEF regions were contacted to mobilize their country counterparts to complete an online survey template similar to the 2017 mapping that was completed by the MAMI Technical Working Group. The different headings of each column in the newly created sheet were transposed into a list of questions to be completed online using Microsoft Forms. Information about all 72 low-middle-income countries (LMICs) was successfully included in the mapping document.

Limitations

The unavailability or absence of some KIs was a significant limitation of the study. Reaching three KIs per country was unattainable and the total number of KIs was reduced from 26 to 20. In turn, the total number of focal countries was reduced from 8 to 7 because one country did not have any participating KIs. The legitimacy of 2 KIs' answers were also questioned because the interviewer sensed they did not want to cast shame on their country's work by answering the questions negatively.

Questions regarding methods and timelines also presented some difficulties when analyzing the data. The questions each asked for a large amount of information that spanned a long period of time. The responses of participants were varied, which means there were likely omissions and mistakes made and the clarity of the responses were compromised.

Furthermore, the terms "guideline development" vs "guideline update" might have been used interchangeably because, again, KIs could have responded to the components that they were aware of and/or engaged with and not have specified the difference. For example, if the guideline development process happened before they were in their current role, the KI would have focused more so on the guideline update. In turn, the accuracy of each answer related to timeframes and processes compromised the ability to consolidate individual country-level data into a very accurate collective presentation of the process.

Finally, there was one question that asked whether the MOH leadership was satisfactory. As seven KIs were working with the MOH, it was inevitable that this introduced bias to their responses. One MOH KI stated that they felt like they were giving themselves "a mark".

Results

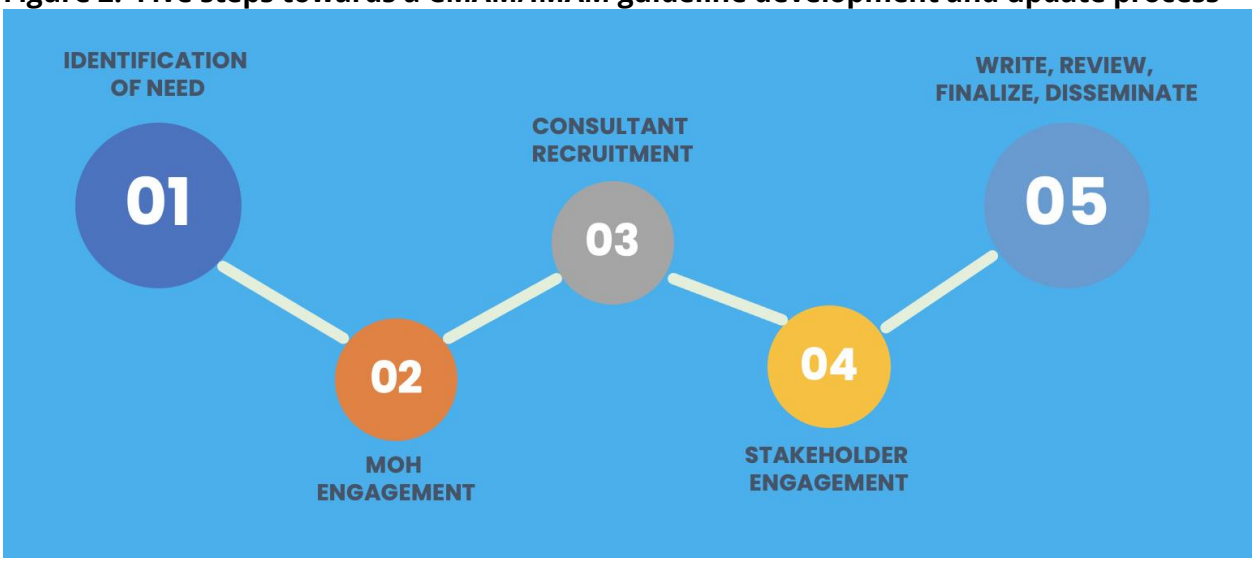
The following results describe previous experiences of national CMAM/IMAM guideline revisions, including the modality of the revision process (rigor, timelines, adaptations, stakeholders, leadership, and cost), the motivation behind any change, the barriers to change, any factors that positively facilitated change, and the lessons learned to support future updates.

MODALITY

PROCESS

The process of developing and updating CMAM/IMAM guidelines differed from country to country. Five steps were connected and interwoven throughout each country for both the guideline development process as well as the updating process. Figure 2 shows these steps, which include: 1) Identification of need; 2) MOH engagement; 3) Consultant recruitment; 4) Stakeholder engagement; and 5) Write, review, finalize, and disseminate.

Figure 2: Five steps towards a CMAM/IMAM guideline development and update process



In three out of seven countries, the need for a guideline and/or updating a guideline was identified as the first step in the overall guideline development process. In two countries, this need was identified either upfront by the MOH or triggered by a natural disaster and the high rates of acute malnutrition that ensued.

Once the need for guidelines was identified, three out of seven countries identified different approaches to MOH engagement as the second step of the process. In two countries, it was the MOH itself who identified the need and provided leadership right from the beginning. Whereas in the third country, other stakeholders advocated for the need for guidelines and then sought MOH approval before initiating the guideline development process.

Hiring consultants was the third step of this process and was conducted in all seven countries. In four of the countries, it was specified that the international consultants were hired from the company Valid International. In the remaining three countries, the consultant was identified as "international". In four countries, local consultants were hired and in one country, it was specified that the decision to hire locally was due to a limitation of funding. International and local consultants were hired for both the guideline development and update processes.

When international consultants were hired, a typical, non-identical pattern of activities took place in each country. The consultancy would always start with a country-drafted Terms of Reference (TOR) that was typically reviewed and finalized while the consultant was still in their home country. They were usually identified as the lead for the guideline development or update process and this was their main responsibility. In some TORs, consultants were mobilized to conduct capacity building activities as well as vet the final guidelines. The consultant's main contact was always MOH and/or UNICEF, but they usually worked collaboratively with an identified in-country guideline committee, such as the CMAM/IMAM technical working group.

Sometimes the consultant's work began in the home office of their country of origin where they would review the documents that were provided to them. At that time, they would flag the necessary work that would be required to either develop or update the guideline, which would initiate the in-country guideline development and/or update process. Then, they would travel in-country and meet with relevant colleagues to begin the in-country process. In two countries, the consultant would participate in a field visit to gain further contextual understanding.

The fourth step is stakeholder engagement. Although the total number of stakeholder engagement meetings or workshops per country varied or was not specified, each country reported at least two to five meetings. The first stakeholder meeting or workshop usually included the consultant, a guideline development committee (e.g. CMAM/IMAM technical working group) and select members, including the MOH, UN agencies, INGOs, academia and/or civil society. The duration of the first meeting amongst stakeholders ranged from three days to two weeks. This meeting included activities such as presenting the consultant's findings from their document review and a proposed way forward. The participants would subsequently discuss the issues and determine what works best for the different levels of government in their country. In a consultative manner, they would work towards consensus decision-making as well as seek endorsement on solutions to these issues from the government. In one country, there were stakeholder meetings that took place every 15 days for one year. In another country, the stakeholder meetings repeated themselves due to the difficulties of bringing the same people together for each meeting. As a result, the consultant conducted the meetings as training of trainers (TOT) for guideline development to ensure all participants equally understood the issues that were discussed and had the capacity to contribute to this exercise. Finally, intensive clinical trainings were conducted as a precursor for these new learnings and translated into the guideline development process.

In tandem with the fourth step, the writing process was initiated. It was recognized that it was very challenging to draft a guideline with 15-20 people in one room, and as such, it was important to identify a smaller group (three to four people) to work through the details separately and then take the draft back to the larger group for validation. In one country, UNICEF drafted the guidelines in collaboration with an international consultant. In another country, it was UNICEF, MOH, and the consultant who drafted the guidelines together and then sought feedback from the CMAM/IMAM technical working group and the nutrition cluster. Finally, in two different countries, the draft was developed by unidentified entities at the national level, but extensive efforts were put into sourcing provincial inputs for both technical and contextual feedback. Ongoing technical reviews were provided by UN agencies (WHO, UNICEF, and WFP) and INGOs (Save The Children (STC), Concern, and Action Against Hunger (ACF)).

Finally, the fifth step included writing, revising, finalizing and disseminating the guidelines. The final approval was usually conducted by the MOH to ensure quality assurance. For example, in one country, once the draft was completed, it was finalized by the government before it was designed, printed, and disseminated. In another country, it was sent to the health bureau secretary for their sign-off. Finally, another country conducted a three-day "finalization and validation" meeting where all nutrition stakeholders were involved in a chapter-by-chapter review of the guidelines before the government signed off and it was disseminated.

The overall time for guideline development ranged from eight months to one and a half years. The guideline updates took less time (one to eight months) except for one two-year update provided by one country.

RIGOR OF DEVELOPMENT

Table 3 provides a snapshot of gathering and summarizing the evidence of the guidelines. More specifically, it states whether a procedure for updating the guidelines was provided, if WHO guidelines were used, if a capacity analysis of the health system needs was conducted, and if an external expert review was conducted before its publication. Further discussion below indicates the criteria for selecting the evidence and whether the views of the target population were sought.

Table 3: Key points surrounding the rigour of development for CMAM/IMAM guideline development and/or updates

COUNTRY	Was there a procedure provided?	Were the WHO guidelines used?	Was the process based on a capacity analysis of the health system needs?	Was the guideline reviewed externally by experts prior to its publication?
Burkina Faso	NO	YES	YES	YES
Colombia	NO	YES	YES	YES
Nigeria	YES	YES	YES	NO
Pakistan	NO	YES	NO	NO
Philippines	YES	YES	YES	YES
Uganda	NO	YES	NO	YES
Yemen	NO	YES	YES	YES

In five out of seven countries, there was not a procedure (or "framework" or "roadmap") provided that outlined the work required for developing or updating the guideline. However, all countries did use the WHO guidelines as a reference for their guideline development and update processes. Furthermore, most countries (five out of seven) conducted a capacity analysis of the health system needs before the guideline development process but details regarding the content of this needs assessment were not provided. Needs assessments must include the costs of implementing different components of the guidelines to ensure affordability surrounding implementation and scaling up of activities. Finally, the guideline was reviewed externally by experts prior to its publication. The different external experts engaged in this review included UN agencies (UNICEF, WFP, and WHO), professional societies, and international consultants.

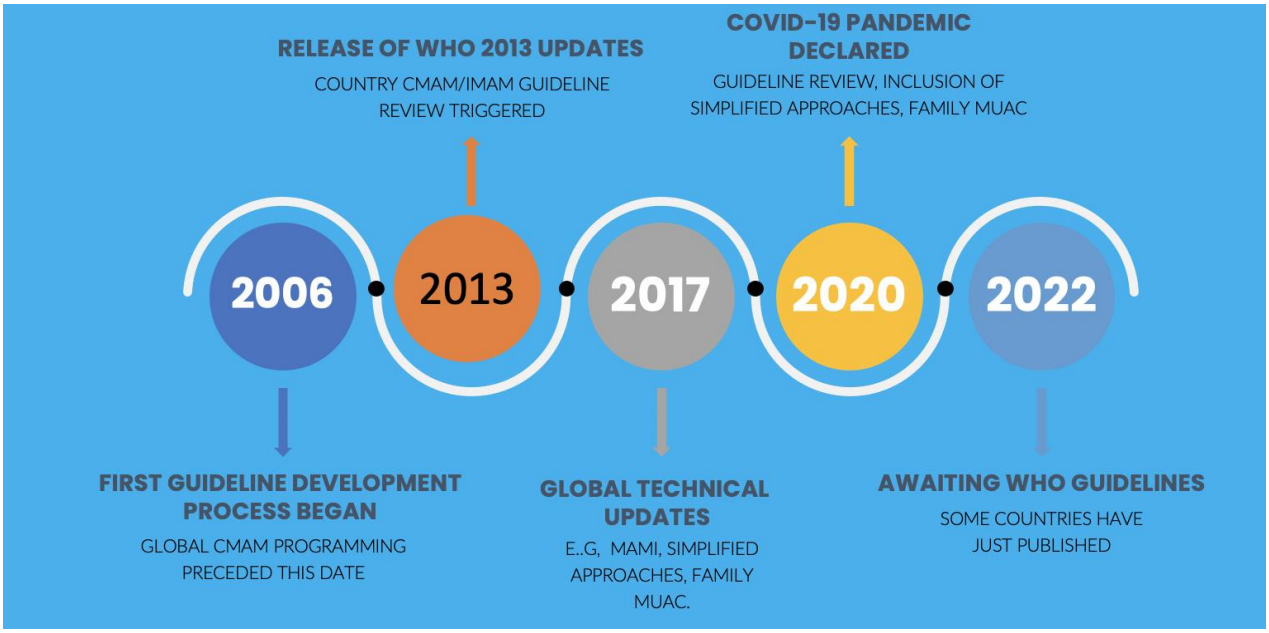
The search for evidence was different in each country. In two countries, academics, universities, and research institutes "that had a lot of experience with malnutrition" were involved in searching for and presenting the latest and most relevant evidence to include into their respective guidelines. This included local evidence provided by key experts. In two other countries, expert consultants were mobilized as they gathered the evidence and UN agency recommendations for consideration and inclusion in the drafting of their guidelines. Different publications, articles, global guidelines, WHO guidelines, FANTA and MAMI tools were all used. Finally, routine CMAM data was also used for making recommendations and updating existing guidelines.

When asked whether the views of the target population were sought, there was only one country that responded with any indication of some effort being made in this regard, but it was done so indirectly. They stated that the views of all pediatric doctors were communicated via the pediatricians in this process. All other countries mentioned that the views of the people and patients were never sought, and one KI stated, *"It would not happen. You're talking about a mother who has a malnourished child. It is a survivor-type experience. These types of questions would be asked in the West."*

TIMELINE

Although the details of each country's timelines differed in their guideline development processes, Figure 3 shows that five main chronological events impacted all seven countries' guideline development processes and updates.

Figure 3: Five chronological events that impacted the timelines of CMAM/IMAM guideline development and/or updates



In 2006, CTC/CMAM programming had been initiated in a handful of countries and national guideline development processes had just begun. Out of the seven focal countries, Uganda was the first to initiate its guideline development process in 2006. Soon thereafter, Nigeria, Pakistan, Yemen, Burkina Faso, Colombia, and the Philippines initiated their national guideline development processes in 2010, 2012, 2013, 2014, 2015 and 2015, respectively. Two countries undertook a second guideline development process because they completed their MAM guidelines separately. Yemen developed their MAM guideline in 2013 and the Philippines developed their Order of Operations and Administrative Order for MAM in 2016.

In 2013, WHO released its publication of the updates on the management of severe acute malnutrition in infants and children. This release prompted four countries to update their existing national guidelines. In 2014, both Burkina Faso and Pakistan revised their guidelines to include the community approach, the use of MUAC, and revised outpatient criteria. They also conducted an analysis on health facility dropout rates for inclusion in guideline updates. In 2015, Uganda conducted a guideline update to include the use of MUAC and revised inpatient and outpatient criteria. Finally, in 2017, Pakistan also revised their admission/exit criteria and made provisions for outpatient care when there's an absence of a Targeted Supplementary Feeding Programme (TSFP). They also made recommendations on multiple micronutrient supplementation (MMS) that were aligned with the latest WHO guidance.

In 2017, it was noted that many countries were using new information that was coming from different global tools. These tools included the Food and Nutrition Technical Assistance III (FANTA) project guidelines and job aids, the MAMI updates, an introduction to simplified approaches and the release of the WHO guidelines. At that time, some countries were only using the new information without updating their guidelines, but other countries decided to include this new information into their national guidelines by conducting an update. Yemen included this new information coming from the different tools as well as solutions to program implementation challenges in 2018 and Uganda updated their guidelines using the MAMI data, new HIV guidance and l programmatic gaps in 2019. Colombia and Nigeria also updated their guidelines in 2019, but these updates were related to programmatic lessons learned and the addition of MAM and Pregnant and Lactating Women (PLW) treatment. Burkina Faso did not update their 2014 guidelines, but they implemented the simplified approaches and family MUAC.

In 2020, the global COVID-19 pandemic was declared. There were immediate changes made to CMAM/IMAM programming, and these modifications resulted in timely updates to national guidelines. In Nigeria, a new chapter entitled "Emerging Public Health Issues" was added to their guidelines to accommodate the COVID-19 inputs and they included small-quantity lipid-based nutrient supplements (SQ-LNS) into their programming. In the Philippines and Uganda, some of the simplified approaches were included in their guidelines, including family MUAC. Burkina Faso did not update their guidelines, but emphasized the use of family MUAC in the most insecure regions. In 2021, Pakistan also included some of the simplified approaches in their guidelines, and aligned with the newly developed Global Action Plan (GAP) on Child Wasting, inclusive of the CASH program (social development).

In 2022, many countries identified themselves in a holding pattern as they await the release of the new WHO normative guidance on the prevention and treatment of wasting.

ADAPTATIONS

The guideline development and update processes used existing guidelines that were adapted to meet the needs of a country, including high-quality recommendations that were contextually specific. When the seven focal countries were asked if the guideline development and update processes included any adaptations to the country's context, there was a range of responses. Altogether, it was generally identified that adapting to the health system was crucial and cannot be underestimated.

"It is about knowing, integrating, and aligning with the health system to ensure sustainability," said one participant.

General examples of country adaptations included specifications surrounding equipment, staffing and identifying the location of the health care facility while others included step-by-step clinical guidance, such as giving a child antibiotics. In the seven focal countries, adaptations included developing alternative recipes for therapeutic milks and RUTFs (two countries), the inclusion of MUAC-only admission criteria for difficult-to-access regions (one country), the presence of all admission criteria (weight, height, MUAC) independent of the availability of equipment (one country), the inclusion of guidelines for HIV and acute malnutrition (one country), the inclusion of country-specific information on (in)security, nutrition and climate change (one country) and ensuring extra RUTF is available to mitigate against family sharing in insecure health regions (one country).

STAKEHOLDERS

Stakeholder engagement and participation are the backbone of guideline development and update processes. Their individual and collective contributions, complemented usually by a wealth of knowledge and experience, pave the way for the development or updating of high-quality guidelines and lead further to their successful implementation. Although there were many stakeholders involved, civil society engagement, including communities, was largely absent in almost all countries. However, their role is very important for governance and enhancing primary healthcare.

Table 4 below indicates the breakdown of the different stakeholders that were involved in the development and/or update process:

Table 4: List of stakeholders based on employment and country

STAKEHOLDERS	Burkina Faso	Colombia	Nigeria	Pakistan	Philippines	Uganda	Yemen
UN Agency	UNICEF, WFP, WHO	PAHO, UNICEF	UNICEF, WFP, WHO	UNICEF, WFP, WHO	UNICEF, WFP, WHO	UNHCR, UNICEF, WHO, WFP	UNICEF, WFP, WHO
INGO	ACF, Helen Keller International, MSF, Nutrition International, Red Cross	No	ACF, Civil Society SUN, International Health Partners, Plan International, Save The Children	ACF, Concern Worldwide, Merlin, Save The Children	International Care Ministries, Plan International, Samaritan's Purse, Save The Children, World Vision	ACF, MSF Denmark, World Vision	ACF, MSF, Mercy Corps, International Medical Corps, Save The Children
Local NGO	No	No	No	Yes	Yes	No	Yes
Foundation and Donor	No	No	Aisha Buhari, Clinton Foundation	Shifa Foundation	No	USAID	No
Government	MOH actors (Director of Nutrition, Director of Public Health), Regional Directors	MOH, National Institute of Health	MOH, Education, NAFDA, NPHCDA, Budget and National Planning, Agriculture, Water	MOH, Provincial Departments of Health	Health Emergency Bureau, HF Development Bureau, health promotion and comms, DOH, Philippine Coordination Office, Epidemiology Bureau, Social Welfare and Development, Interior, and local government	Nutrition experts	Director of Nutrition Department; Governorate Level - Nutrition Coordinator
Professional	Clinicians, Pediatricians	Nutritionists, Pediatricians, Neonatologists	Nutritionists, Pediatricians, Pediatric Nurses, Community Health Practitioners	No	Integrated Midwife Association, Dietician Association of the Philippines, Gastroenterology Association, Hepatology, Association of Health Officers	Pediatricians from National and Referral Hospitals	No
Academia	School of Public Health, universities, Research Institute	Professors in Epidemiology, Infectious Disease, Intensive Care	Yes	Yes	No	Universities: Makerere, Kyambogo, Islamic	Universities: Aden and Sana'a

Notably, UNICEF, WHO, and WFP were consistently identified as UN stakeholders in six out of seven countries, except for PAHO who replaced WHO in Colombia and UNHCR who was added in Uganda. The most identified INGOs across the seven countries included ACF, Médecins Sans Frontières (MSF), Plan International, Save The Children, and World Vision. Individual countries that represented INGOs included Concern Worldwide, Helen Keller International, International Care Ministries, International Medical Corps, Mercy Corps, Merlin, Nutrition International, Red Cross, and Samaritan's Purse. Different local NGOs and foundations were also identified in several countries. Colombia was one country that had neither stakeholder representation from local or international NGOs nor any foundations. The professional stakeholders across the seven countries included nutritionists, pediatricians, pediatric nurses, community health practitioners, neonatologists, midwives, gastroenterologists, hepatologists and health officers. Finally, academics included professors representing different national universities in Colombia, Uganda (Makerere and Kyambogo) and Yemen (Aden and Sana'a).

When asked if the process included individuals from all relevant professional groups, all seven countries responded extremely positively. When asked if anyone was missing, the key informants identified representatives from other sectors, ministries, and departments (e.g. agriculture, education, and social development) as outstanding. Furthermore, it was mentioned that the district (subnational) level representation could be improved. One participant stated

> **"If we were to rewind the clock, other ministries, departments, and authorities should be included to address the national nutrition action plan. This was a missed opportunity as it was just MOH included at that time."**

The different stakeholders were selected using a variety of methods. In three countries, there was a pre-existing list of stakeholders that were already engaged in a nutrition committee or CMAM/IMAM technical working group. By default, these stakeholders were automatically selected for the guideline development process. In another two countries, UNICEF and/or the MOH drafted the initial list, and then cross-referenced it with an existing MOH directory of professional organizations and partners they had already worked with to determine who should be included. Altogether, a combination of technical capacity, involvement in the cluster and previous experience with nutrition programming were some of the criteria that the MOH used to identify who would be included.

When asked how the UN agencies worked together, the responses revealed three different scenarios. In the first scenario, UNICEF worked alone in the guideline development process and did not engage with other UN agencies. In the second scenario, two countries expressed difficulties with UN working relationships as each UN agency was possessive of their different sections, reflecting their respective mandates and funding. This working structure set the stage for very separate working relationships, resulting in the creation of separate guidelines for inpatient, SAM, and/or MAM care.

"Each UN agency had their own funds and their own mandate related to the guidelines that they were working on. The availability of funds drove the process. The guidance should be [based on] a standard and not related to whether implementation funds were available," shared one participant.

In the third scenario, there were constructive working relationships between all UN agencies when developing the guidelines, despite separate funding allocations, and KIs identified good teamwork independent of mandate-specific contributions. For example, UNICEF focused on SAM, WHO focused on inpatient care and WFP focused on MAM.

"It was not a perfect process, but there were never any opposing forces. The UN agencies worked together," another participant stated.

STAKEHOLDER SATISFACTION

Stakeholder satisfaction is a good measure of the process' overall success. The provision of evaluations can also highlight specific areas of improvement as well as strengthen the relationship between participants and the process. Table 8 shows which country stakeholders were satisfied with the process and whether they received participant evaluations of the process.

Table 8: Participant satisfaction and evaluations

COUNTRY	Were stakeholders satisfied?	Were stakeholder evaluations conducted?
Burkina Faso	YES	NO
Colombia	YES	NO
Nigeria	YES	NO
Pakistan	YES	NO
Philippines	YES	YES
Uganda	YES	DON'T KNOW
Yemen	YES	NO

Reportedly, stakeholders in each of the seven countries were satisfied with the process, but evaluations were only confirmed to be conducted in one country (Uganda). It was revealed that stakeholders were satisfied because they were able to discuss the technical issues together and agree upon how any adaptations will take place for the guidelines. Everyone was given an equal opportunity to express their opinions and the process was very consultative. Inputs that were provided at the last minute and/or coming from remote regions were always considered and included. However, in the end, it was always consensus decision-making that drove the agreement to the finalization stage.

LEADERSHIP

The CMAM/IMAM guideline development and update processes were led by the MOH in all seven countries. The majority (five out of seven) of the KIs stated that their leadership was satisfactory. It was generally understood that a satisfactory process resulted in an agreeable product:

> **"It's natural because when you have a final agreed upon guideline with consensus, it means that the leadership went well."**

Alternatively, two countries were not satisfied with their MOH leadership. Reasons for this poor scoring included limited human resource capacity and the absence of a final guideline that was endorsed by the MOH.

> **"If they did a good job, they would have an endorsed document by now," shared one participant.**

COST

The total cost of developing and/or updating the guidelines was largely unknown to all KIs. There was also no information provided on cost-effectiveness or financial modeling of the financial costs under consideration when developing or updating the guidelines. It was recognized that the availability of funds determines how far and how in-depth one could either develop or update the guidelines. It was mentioned that without sufficient funds, there is only so much that can be accomplished in the long term. Therefore, the process needs to be affordable. Finally, it was recommended to not stretch funds in order to complete the guidelines, but rather to take the time to understand the situational analysis and then properly allocate funds.

> **One participant said, "We don't want to cut and paste from previous guidelines. They need to be contextualized and based on something that will make a difference."**

Four out of seven countries stated that they "do not know" how much the process costs or it was a "very difficult question". The remaining three countries provided a breakdown of budget line items, but nothing was uniform across the countries. The breakdown of different budget line items included costs for: 1) international consultancy, 2) local consultancy, 3) workshop costs (venue, meals, etc.), 4) individual salaries, and 5) launch of guideline costs (printing, dissemination, etc.). A total figure of $97,000USD was provided by one country, which encompassed all these costs. Individual figures varied, but three countries responded that international consultancies (on varying time frames) cost between $20,000-57,000USD while one country reported a local consultancy cost between $10,000-20,000USD. Participant salaries were identified as an indirect cost because many stakeholders were already on salary and their involvement was seen as a percentage of their overall time.

UNICEF was consistently the funding body contributing to the guideline development and update processes, but other contributing donors included a national university, the government, ACF, WHO and WFP. Four out of seven countries mentioned that the funding body did not influence the guideline development or update processes, but the remaining three countries had a different experience. One country stated that the funding body's influence was positive and it moved the development process forward. However, two countries stated that the funding body's influence was negative as it reflected the individual UN agency mandates and funding allocations and resulted in a compartmentalized approach to guideline development and update processes.

MOTIVATION

Motivation drives individuals and countries towards identifying the need to complete, work through, and ultimately finalize a task. There were many reasons why individual countries and independent consultants were motivated to develop and update the CMAM/IMAM guidelines. Table 5 shows a list of both positive and negative motivations identified by the KIs for completing the guideline development or update. Each checkmark in the count column reflects one expressed interest by either a country and/or independent consultant. There was no limit to the number of interests expressed by a KI.

Table 5: List of reasons and motivations for developing and/or updating the CMAM/IMAM guidelines, counted per KI

MOTIVATION	Count
Funding available	✓✓✓
Capacity available	✓
Determination of a need for a guideline	✓✓✓✓
Alignment with WHO guidance	✓✓✓✓✓
Alignment with other global guidance (e.g. MAMI, simplified approaches, family MUAC, etc.)	✓✓✓✓
Alignment with country commitments (e.g. GAP on child wasting, multi-sectoral integration, humanitarian/development nexus, etc.)	✓
Account for local context and challenges	✓✓✓✓✓
UN agency motive drove the process	✓

The count column shows that the most popular motivation for guideline development or update was to align with WHO guidelines and to account for the local contextual challenges and differences. The second most popular reasons were the need for a guideline and to ensure alignment with global guidance, such as MAMI, and the simplified approaches like family MUAC. The third most popular reason was funding being available to complete this task. Finally, capacity availability, individual UN agency motivation, and alignment with country commitments (e.g. Global Action Plan on Child Wasting) were not as populous, but still identified as motivations for developing and updating the guidelines.

BARRIERS

Barriers are obstacles that prevent individuals and countries from completing a specific task. The CMAM/IMAM guideline development and update processes presented itself with many barriers in the completion of this task. Table 6 lists the most common barriers provided by all KIs. Each checkmark in the count column reflects one expressed interest by either a country and/or independent consultant. There was no limit to the number of interests expressed by a KI.

Table 6: List of barriers encountered when developing and/or updating CMAM/IMAM guidelines, counted per KI

BARRIERS	Count
Funding	✓✓✓✓
Language Translation	✓
Stakeholder consensus	✓✓✓✓
Technical challenges (e.g. lack of evidence, different schools of thought, etc.)	✓✓✓
Contextual challenges	✓
Lengthy administration required for completion	✓
Government buy-in	✓
Timeline constraints	✓✓
Low on the priority list (e.g. the onset of Covid-19 pandemic)	✓
Guideline is seen as dogma	✓
Lack of program integration	✓
Wanting a guideline when you know you do not have the supplies	✓
Fear of product sitting on a shelf	✓

Funding and stakeholder consensus were identified as the most common barriers held by the majority of KIs. This was followed by technical challenges and timeline constraints. Single opinions related to language translation, contextual challenges, lengthy administration processes, government buy-in, low prioritization, perceptions of the guideline as dogma, the absence of program integration, fear of the inability to deliver on the supplies, and having the new guidelines sit on a shelf were also identified as obstacles. Although they weren't as popular in numbers, these barriers are still important to factor into future guideline development and update processes.

FACILITATING FACTORS

KIs did not hesitate to list all of the facilitating factors that aided them in the creation or update of CMAM/IMAM guidelines. Table 7 is a list of everything that was mentioned by the interviewed KIs. Each checkmark in the count column reflects one expressed interest by either a country and/or independent consultant. There was no limit to the number of interests expressed by an individual KI.

Table 7: List of facilitating factors that enable the development and/or update of CMAM/IMAM guidelines, counted per KI

FACILITATING FACTORS	Count
UN and/or NGO engagement	✓
A commitment of one person for one year to complete this task	✓
MOH leadership and commitment	✓✓✓✓
Effective revision process	✓
Availability of evidence	✓
Presence of experts	✓
Motivation to reach the end product	✓
Active Nutrition Working Group and/or CMAM/IMAM Working Group	✓✓✓
Technical ownership	✓
Availability of finances	✓
Guided by a common goal	✓
Stakeholder availability and commitment	✓✓✓
Existing relationship with stakeholders	✓
Per diems	✓
Guideline dissemination plan	✓
Hotel accommodation provided to complete the work	✓

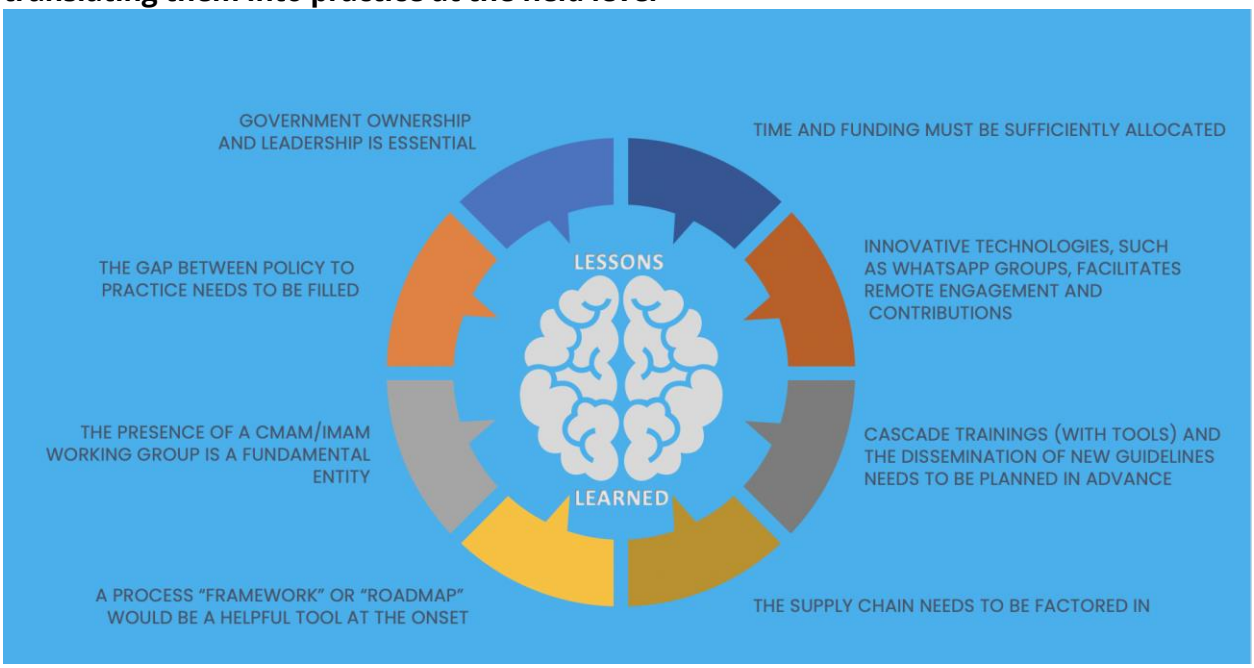
Although this long list of facilitating factors was generated, three facilitating factors stood out among the majority of KIs, including: 1) MOH leadership and commitment, 2) an active nutrition working group and/or CMAM/IMAM working group, and 3) stakeholder commitment and availability.

LESSONS LEARNED

MAKING THE CHANGES AND TRANSLATING THEM INTO PRACTICE

The knowledge gained from past guideline development and update processes should actively be considered for any future guideline changes. These lessons learned were reported by KIs during the guideline development or update process and when translating them into practice at the field level. Figure 4 shows the different categories of lessons learned.

Figure 4: Lessons learned categories from the development and updating process and when translating them into practice at the field level



The lessons learned included:

- **Ownership and leadership from the government is essential** to ensure guideline completion.
- **The large gap between policy and practice needs to be filled** with reflective analysis of what is in the national guidelines and how this content can be translated into field practice using friendly tools (e.g. charts, posters, and easy-to-use data collection tools).
- The commitment, dedication and sustained energy of **the CMAM/IMAM working group is essential for the completion of the guideline**.
- **A process "framework" or "roadmap" would be a helpful tool at the onset of guideline development**. Step-by-step directions on how to develop and/or update guidelines could facilitate a more efficient and effective process.
- **Sufficient time and funding are required to complete the guideline satisfactorily**. Funds should not be dependent on funding availability, but must be allocated for regular guideline updates.
- **Innovative technologies, such as WhatsApp groups, are an excellent way to facilitate remote engagement in the development of guidelines**.
- **Cascade training (with tools) and the dissemination of new guidelines need to be planned in advance**. It cannot be assumed that this will just be done. The plan needs to deliberately ensure everyone is properly trained and aware of the new or updated guideline.
- **The supply chain is weak and needs to be improved**. Although it is unclear on how this relates to guideline development and updates, it is suggested that this should be discussed and considered in tandem with this process to ensure everyone has the proper supplies to carry out the different activities.

RECOMMENDATIONS

The following list of recommendations is provided for any future guideline development and update processes that national governments, UN agencies, and civil society may undertake:

Recommendations to national governments:

7. Allocate one dedicated person to oversee the CMAM/IMAM guideline development and updating process from start to finish. Existing staff do not have the bandwidth to take this on and complete it well.
8. Take time to work through the five identified "knowledge layers" of the WHO SMART Guidelines. This will lay the foundation for greater digital adaptation and encourage more guidance to be translated into systems that connect, communicate, and share these guidelines across different devices and digital platforms to maximize their effectiveness.
9. Mobilize civil society, including NGOs, to participate in the guideline development and updating process.
10. Facilitate the creation and/or maintenance of a CMAM/IMAM working group and ensure they participate in the guideline development and updating process.
11. Thoroughly analyze the health systems' capacities, needs, and bottlenecks in order to understand better how to implement CMAM/IMAM and at what cost. Additionally, it should be considered what needs to be included in the guidelines to contextualize and adapt the new WHO recommendations to the local context.
12. Determine the cost of developing and updating the national CMAM/IMAM guidelines and budget funds accordingly on an annual or bi-annual basis.

Recommendations for WHO and other relevant UN agencies:

7. Mobilize WHO to conduct multiple and timely briefing sessions on the new normative guidelines for the treatment and prevention of child wasting. They should be provided for all relevant global staff to ensure that they are aware of the details. Participants should also be provided with a document pack (e.g. roadmap to guideline development and updates, introduction to guidelines, an example of budget required, etc.) on how to get started and what they should expect in the uptake of these new findings within a future guideline revision process.
8. Create separate "Roadmap" or "Framework" process templates for both the development and updates of CMAM/IMAM guidelines. These templates should provide realistic step-by-step guidance on how to develop or update a guideline, including estimated timelines. The timelines need to specify that the process is lengthy and each step along the way cannot be ignored, while also generic and useful for country-level adaptations. Partner involvement needs to be specified in terms of time, commitment as well as the decision-making process that is required before dissemination and uptake of the new guidelines.
9. Avoid reflecting the internal struggles, politics, and mandates of each contributing UN agency in the national CMAM/IMAM guidelines. All issues related to mandates and funding allocations

should be discussed and one collective goal should be clearly and transparently communicated across all UN stakeholders before the start of any national guideline development or update process. The mandate of the National Government is to create one collaborative CMAM/IMAM guideline that encompasses all program components, independent of who executes what at the field level.

10. Develop effective training packages that encompass all guideline development and update processes. These need to be creative, clear, and easy-to-follow tools. They should include flow charts with tables and diagrams. As most health workers are young and able to view this information, including videos, from their phones, innovative technologies should be considered when developing these training packages.
11. Develop a generic budget template with estimates for the development and update of CMAM/IMAM guidelines. This should align with the "Framework" or "Roadmap" and be subsequently contextualized to ensure appropriate funding is allocated at the onset of the process or in advance with consideration of government budgeting cycles.
12. Mobilize the UN Supply Division to discuss the creation of a complementary guideline on supply chain management. This separate guideline should be considered for inclusion in the national CMAM/IMAM guideline.

Recommendations to civil society (including INGOs and local NGOs):

1. Engage and participate actively in the guideline development process as participating members of the national CMAM/IMAM Technical Working Group (if present).
2. Conduct ongoing pilot tests regarding contextual adaptations and financial costs surrounding the implementation of the different components of the guidelines. The results of the pilot tests need to be shared with national governments as a means of informing their national guideline development and update processes. Modeling the impact of scaling up activities could be further supported to understand the financial impact and necessary means of potential adaptation.

MOVING FORWARD INTO 2022/23

FORECASTING READINESS

In anticipation of the upcoming release of the new WHO normative guidelines on the prevention and treatment of child wasting, KIs were asked whether they were aware of these new guidelines and if they had any further comments regarding the uptake of the new guidance. The question elicited mixed responses. Most countries were aware, but some KIs were unaware. For example, in one country, they stated that they had learned about the new guidelines indirectly through an email they had received on an unrelated topic.

When countries were asked if they had plans to update their CMAM/IMAM guidelines, two countries said that they had just completed updating their guidelines and would need to consider the possibility further before making a decision. This included some immediate brainstorming of ideas on how they would do this and what this update would look like for their specific country. Two countries defined the upcoming release as opportunistic because they already have revisions they want to incorporate into their guidelines and this would allow them to couple their changes with the uptake of the WHO guidance. However, of these two countries, only one country was aware of the new guidelines and stated that they would like to incorporate these new changes "one last time" to minimize the overall cost and expense.

SUPPORT

All KIs were asked hypothetically about the different types of support they would need or like for updating their CMAM/IMAM guidelines. In one country, it was expressed, *"We could use all the help we can get."* Both country representatives and independent consultants identified the following list of support needs:

1. Technical (nutrition) support (e.g technical review, drafting, designing, and support for rollout)
2. Financial support
3. Human Resources support
4. Capacity building for health workers
5. Support from an international consultant or expert
6. Support in developing guideline training packages
7. Support in developing training materials
8. Support with implementing guidelines
9. Support from WHO to get started (on guideline development or updating)
10. Introduce CMAM/IMAM curriculum into medical schools to ensure sustainability

11. Translate evidence into policies and then ultimately into practice
12. A framework/roadmap on how to develop and update guidelines as well as a budget
13. A template for guideline development and update
14. Documentation of what's new and what's changed in terms of CMAM/IMAM guidelines
15. Remote support in documenting simplified approaches and a review of the guidelines.

TECHNICAL ALIGNMENT

All seven countries were asked if their existing guidelines included any of the areas of focus included in the new WHO guidelines. Table 9 shows whether existing country guidelines include WHO's guidelines technical areas of focus.

Table 9: 2022 WHO normative guidelines areas of focus

The new WHO normative guidelines on the prevention and treatment of wasting – area of focus	Burkina Faso	Colombia	Nigeria	Pakistan	Philip pines	Uganda	Yemen
Were there guidelines on growth faltering/failure in infants below 6 months?	Yes	Yes	Yes	No	No	Yes	No
Were there guidelines on moderate wasting in infants and children 6 months and older?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Were there guidelines on severe wasting and edema in infants and children 6 months and older?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Were there guidelines on the prevention of wasting?	Partially	No	Yes	Partially	Yes	Yes	Yes

Most of the new WHO guideline areas of focus have already been included into existing country guidelines. Two areas of focus have not been included across all countries, including guidelines on growth faltering and failure in infants below six months in three countries and the absence or partial absence of guidelines on the prevention of wasting in one and two countries, respectively. The content details of the different guideline specifications were not asked.

The SMART guidelines are the new WHO approach to systematizing and accelerating the consistent application of recommended, life-saving interventions in the digital age. It is hypothesized that using digital interventions to deliver guidelines could amplify their impact on the health and wellbeing of populations and could be beneficial for the release of the new WHO guidelines. There is a five-step pathway to advance the adoption of best clinical and data practices. Table 10 shows that six countries have not developed digital adaptation kits and one country does not know whether they have or not.

Table 10: Countries stating whether they have reached the second step of the SMART pathway

The SMART Guidelines and the second step of the SMART Pathway.	Burkina Faso	Colombia	Nigeria	Pakistan	Philippines	Uganda	Yemen
Has the country reached the second step within the SMART Pathway – the development of digital adaptation kits?	No	No	No	Don't know	No	No	No

CMAM/IMAM Guideline Mapping Matrix

Ninety five CMAM/IMAM guidelines were included. Employees from UNICEF (57 total), WHO (22 total), and one from an NGO completed the survey on behalf of 72 countries across six UNICEF/four WHO regions. There were 54 countries overlapping with the MAMI map and 14 were added for the first time because of this mapping exercise. Four countries (Burkina Faso, Central African Republic, Senegal, and Guinea Bissau) did not participate in this mapping exercise, but were included in the MAMI map.

A detailed list of regions, countries, year of publication, guideline content/status/language, alignment with WHO, stakeholder involvement, revisions, planned updates, and requested support will be provided as a separate document.

CONCLUSIONS

Altogether, the guideline development and update processes across the seven countries in focus have been very fluid for at least the past decade. Countries have been mobilized to develop and update their national guidelines and they have banded together with some very committed and tireless stakeholders to make this happen, sometimes under some very difficult and extenuating circumstances. They also went the extra mile to ensure the different levels of government input were captured and the guidelines were not signed off without group consensus.

Although the processes and timelines varied across each country, woven throughout were a few common trends. Clearly defined steps in the process and relevant timelines greatly helped facilitate the translation of all information into clear and concise, but generic time-bound steps applicable to most countries. With further consideration and elaboration, these steps with timelines can help inform the foundation of a roadmap for future guideline development and updates. Even the adaptations that were articulated by each country could be considered for other countries with further discussion. This would enhance the richness of each country's guideline as all relevant country adaptations should be considered.

The cost of the overall process needs to be dissected and looked at more closely in the future. A budget template for both developing and updating guidelines should be drafted and included as part of a guideline development/update package. As participants mentioned, they were not aware of the process' individual or total expense. This is crucial moving forward as funding availability was expressed as a barrier, a facilitating factor, and a motivating piece to executing guideline development or updates.

The lessons learned are numerous and cannot be underestimated. It is the improvement of these pieces that will make all the difference in ensuring a high-quality guideline is both created and implemented. We can no longer ignore the need for a Framework or Roadmap to assist in guiding countries through this experiential process, innovative training tools to support the new guidelines, and an effective supply chain that supports this overall process.

In general, countries are ready to move forward with updating their guidelines to reflect the new, upcoming WHO normative guidelines. However, they need immediate support to ensure effective and timely uptake of the guidelines. This support must begin with WHO briefings and sensitization on these guidelines to ensure everyone is aware of the details and what they can expect. They also need information on what steps need to be taken and how each country can promote the uptake of these guidelines. This includes the possibility of dedicating one full-time position to this task for a full year. Furthermore, there must be more cohesion between the UN agencies who play an important role in these guideline updates with any existing challenges regarding mandates between agencies identified and rectified before the overall process commences. Otherwise, these separations will be reflected in the quality of the guideline updates. Finally, the role and contributions of civil society, MOHs, and INGOs cannot be underestimated. They need to be engaged in the overall process to ensure the new guidelines are properly rolled out at all levels.

Countries are motivated to consider these new changes even if they just completed an update to their guidelines. The different stakeholders recognize that the prevention and treatment of child wasting guidelines have always been a process of "building a ship while it sails", and our current moment is no exception to this commonly understood notion from the past two decades. Finally, as rates of child wasting have not seen any global shifts, the release of these new guidelines is perceived as one more chance to save and improve the lives of children and families in many countries and communities and reduce the proportion of children suffering from wasting to <3% by 2030.

APPENDIX ONE: Preliminary administrative survey provided to health professionals

	QUESTION TYPE	QUESTION STATEMENT	ANSWER OPTIONS
1	Short Answer	What is your name:	write answer
2	Short Answer	Name the [country] of origin of the national CMAM/IMAM guideline whose development you were involved with. Note: Moving forward, this country will be referred to as [country].	write answer
3	Multiple Choice	What is your current position?	Ministry of Health employee Health professional associate Government employee Civil society employee Policy think tank employee International consultant Other: write answer
4	Short Answer	What is your current place of work or institution?	write answer
5	Multiple Choice	Were you involved in the development of [country]'s national CMAM/IMAM guideline?	Yes No
6	Long Answer	Could you please describe your role in the development and/or update of [country]'s national CMAM/IMAM guidelines?	write answer, if applicable
7	Short Answer	What is the name of [country]'s national CMAM/IMAM guideline?	write answer
8	Checkboxes	What is included within [country]'s CMAM/IMAM guideline (Check all that apply)?	CMAM/IMAM Treatment of SAM Management of MAM Management of under 6m Inpatient care Prevention of acute malnutrition Community treatment Other: write answer I don't know
9	Multiple Choice	What is the status of [country]'s national CMAM/IMAM guideline?	Draft Interim Final
10	Multiple Choice	Is [country]'s national CMAM/IMAM guideline in the public domain?	Yes No I don't know
11	Short Answer	PLEASE SKIP THIS QUESTION IF YOU WROTE "NO" TO QUESTION #10. If [country]'s CMAM/IMAM guideline is in the public domain, please provide a link here.	Write link here
12	Multiple Choice	What is the targeted age group of [country]'s CMAM/IMAM guideline?	0-59 months 6-59 months Adolescents (10-19 years)

			Adults (18+) Pregnant Lactating Women (PLW) All age groups Other: write answer I don't know
13	Multiple Choice	What year was [country]'s national CMAM/IMAM guideline published?	2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 I don't know Other: write answer
14	Multiple Choice	In which language was [country]'s national CMAM/IMAM guideline written?	English Bahasa Portuguese French Spanish Other: write answer I don't know
15	Long answer	Was [country]'s national CMAM/IMAM guideline translated from one language into another? Please specify any translation of languages and explain further.	Write answer
16	Checkboxes	Who was involved in the development of [country]'s CMAM/IMAM guideline? (Check all that apply)	Myself MOH WHO UNICEF WFP International NGO National NGO Academic institution(s) International consultant(s) Other I don't know

17	Long Answer	Please explain if there are any ongoing revisions, later drafts, or partial updates taking place, such as those due to Covid-19?	Write answer
18	Multiple Choice	Has [country]'s national CMAM/IMAM guideline been updated since it was first developed?	Yes No I don't know Other: write answer
19	Short Answer	PLEASE SKIP THIS QUESTION IF YOU ANSWERED "NO" TO QUESTION #18. If "YES", what year was [country]'s national CMAM/IMAM guideline updated?	2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 I don't know Other: write answer
20	Checkboxes	PLEASE SKIP THIS QUESTION IF YOU ANSWERED "NO" TO QUESTION #18. If "YES", who was involved in the update of [country]'s CMAM/IMAM guideline? (Check all that apply)	Myself MOH WHO UNICEF WFP International NGO National NGO Academic institution(s) International consultant(s) Other I don't know
21	Multiple Choice	PLEASE SKIP THIS QUESTION IF YOU ANSWERED "NO" TO QUESTION #18. If "YES", what is the status of this updated guideline?	Draft Interim Final I don't know
22	Multiple Choice	PLEASE SKIP THIS QUESTION IF YOU ANSWERED "NO" TO QUESTION #18. If "YES", is this updated guideline in the public domain?	Yes No I don't know

23	Short Answer	PLEASE SKIP THIS QUESTION IF YOU ANSWERED "NO" TO QUESTION #22. If "YES", please provide a link here.	Write link here
24	Long Answer	PLEASE SKIP THIS QUESTION IF YOU ANSWERED "NO" TO QUESTION #18. IF "YES", please briefly summarize the main updates that were included.	Write answer
25	Multiple Choice	Are you aware WHO is updating the normative guidelines on the prevention, early detection, and treatment of wasting?	Yes No Other: write answer
26	Checkboxes	Is [country] planning to revise their CMAM/IMAM guideline?	Yes No I don't know Other: write answer
27	Short Answer	PLEASE SKIP THIS QUESTION IF YOU ANSWERED "NO" TO QUESTION #26. If "YES", what are the reasons for updating [country]'s CMAM/IMAM guideline?	Write answer
28	Long Answer	PLEASE SKIP THIS QUESTION IF YOU ANSWERED "NO" TO QUESTION #26. If "YES", what is the timeline that [country] has identified for updating their CMAM/IMAM guideline (e.g. month(s), annual quarter, trimester, etc.)?	Write answer
29	Long Answer	Please provide the name(s) and contact detail(s) of any additional Key Informants that you feel would be relevant for us to talk to regarding updates that were conducted towards [country]'s CMAM/IMAM guideline.	Write answer

THANK YOU!

APPENDIX TWO: Standardized Interview Guide

Analysis Domain	Question	Prompt Questions
Introductions	Welcome key information, state purpose of the interview	
	Review relevant answers to the Microsoft Forms preliminary questionnaire that was sent out to the key informant prior to this interview.	Is there anything that you had difficulty answering?
		Do any of your responses require further clarification?
Introductions	The following questions will be asked with reference to the information that you provided on updating your national CMAM/IMAM guidelines in the Microsoft Forms survey. Based on this information, it is my understanding that you updated [insert name of guideline(s)] on [insert date(s)].	Is this correct?
Modality	What timeline did you use for developing, updating and/or observing the process of the national CMAM/IMAM [insert name of guideline(s)] development?	How long did it take to update the national guideline on wasting?
Modality	What process did you use to develop and/or update the guidelines? If you observed this process, what process did you observe?	Was there a procedure provided for developing and/or updating the guideline?
		Were you guided by the WHO guidelines during this process?
		Was the process based on a situational (capacity) analysis of the health system and the system's needs?
		How did you search for and select the evidence?
		Was the guideline reviewed externally by experts prior to its publication?
Modality	Did the guideline development and/or update process include any adaptations to the country's context?	What were the adaptations at the national level?
		What were the adaptations at the subnational level?
		Overall, did you feel as though the country context specificities were captured in this guideline development and/or update process?
Modality	Who were the stakeholders that were involved in this development and/or update process and at what levels?	Did the process include individuals from all relevant professional groups?
		How were the stakeholders selected to participate in the development and/or updating process?
		Were there any stakeholders that were missed? If yes, why?
		Who led the CMAM/IMAM guideline development and/or updating process? Was it the MOH? If not, why? Was their leadership in this specific process satisfactory?

		Were the views and preferences of the target population (patients, public, etc.) sought out?
Modality	How did the relevant UN agencies (e.g. WHO, UNICEF, WFP, and UNHCR) work together in your country for the development and/or update of the CMAM/IMAM guidelines?	If yes, how? E.g. did they divide up the different tasks? Did some agencies work more closely together over others?
		If no, why not?
Motivation	What was the reason/motivation for updating these guidelines?	Was it to align with the latest WHO guidelines?
		Was there a time lapse since the last update?
		Was funding and/or capacity available?
Barriers	Were there (or do you anticipate) any barriers that had to or need to be overcome to make the guideline updates?	
Facilitating Factors	What were the facilitating factors?	
Lessons Learned	Were the participants involved in the guideline development and/or update process satisfied with the overall process and outcome?	Were evaluations done? If yes, what did you learn from these evaluations?
	What were the lessons learned from 1) the revision process for making these changes, and 2) translating them into practice at the field level that are useful for future revision processes?	What went well and what can we learn from that?
		What did not go so well and what can we learn from that?
		What should we do to improve the next guideline development and/or update?
Support	What kind of support do you (or the country) want when it comes to developing and/or updating your national guidelines?	
Technical	Did your guidelines include (either before or after update) any of the soon to be released 2022 WHO normative guidelines areas of focus?	Were there guidelines on growth faltering/failure in infants below 6 months?
		Were there guidelines on moderate wasting in infants and children 6 months and older?
		Were there guidelines on severe wasting and edema in infants and children 6 months and older?
		Were there guidelines on the prevention of wasting?
	SMART Guidelines are a new WHO approach to systematize and accelerate the consistent application of recommended, life-saving interventions in the digital age. There is a five-step pathway to advance the adoption of best clinical and data practices.	Has the country reached the second step within the pathway: the development of digital adaptation kits? Note: the first step is the development of narrative guidelines.
Recommendations	What recommendations can be retained for future revision processes?	
Concluding	Is there anything else you would like to say or share?	

APPENDIX THREE: Introductory script read by Interviewer

Hello _____.

My name is Sarah Carr, and I am a consultant working on behalf of UNICEF and the GNC-TA Wasting Sub-WG.

Thank you for taking the time to participate in this interview regarding your experience with developing, updating and/or observing/receiving feedback on CMAM/IMAM Guidelines. Your time today will help us further understand how best to support individual countries and their specific needs for guideline uptake once the new WHO normative guidelines on the prevention and treatment of wasting are released.

This interview will take about 60-75 minutes.

Your participation in this study is voluntary. You do not have to answer every question, and you can stop the interview at any time.

To keep your responses anonymous, I will be coding them in a way in which the link between your name and the code are kept in a separate, secured location.

Are you ok with recording this interview? This ensures that I capture everything that you say today. I will delete the recording as soon as I have transcribed my notes.

I will start by asking you several quick questions about yourself and your experience with CMAM/IMAM guidelines.

I will then move on to questions about the modality, motivation, behaviour, barriers, lessons learned, and support required for developing and updating CMAM/IMAM guidelines.

Altogether, I would like to gain insight into the trends of thoughts, attitudes, and perceptions that you and others involved in developing/updating CMAM/IMAM guidelines hold.

Do you have any questions before we continue?

OK, let's start with Part 1, the administrative questions. This part should take about 10 minutes and the questions are meant to be relatively short and quick. Your answers to these questions will help me set the stage for the remaining questions of the interview.

The remaining questions in Part 2 of the interview will be conducted in a manner that resembles a conversation among acquaintances. We welcome a free flow of ideas and information. In general, I will have questions framed, but I will probe for further information based on your responses.

Are you ready?