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MAMI Care Pathway Mozambique

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## Introduction

According to the conclusion of the mapping and capacity report written in May 2023, implementing

the MAMI care pathway in Cabo Delgado, Mozambique in an organized manner is possible under the

current service scheme. Some measures should be taken and monitored for the

successful follow-up of young children under 6 months of age and their mothers t nutritional risk.

Currently in Mozambique, the Nutritional rehabilitation program (PRN) protocol is that every child under 6 months with W/L < - 2 and < -3 receives inpatient care. The PRN also mentions other situations where the infants should be taken care of in inpatient care such as breastfeeding difficulties (poor latching, positioning, and sucking) or insufficient weight gain. Children are discharged once they gain adequate weight and should be followed up in the at-risk child consultation (CCR) and/or through the CHWs at the community level. However, because of a lack of effective referrals, poor communication between programs, lack of technical capacity, and long distances between health services and communities, there is a barrier for babies under 6 months to receive this support under the PRN. Often there is no support after they are discharged and there is no option to receive support near or in their communities to prevent referrals to the inpatient care.

The MAMI Care Pathway provides an option for small and nutritionally-at risk infants less than 6-months and their mothers to be treated near home as outpatients. The MAMI Care Pathway Package provides healthworkers with the tools to identify, assess, manage and support at-risk infants less than 6 months and their mothers.[[1]](#footnote-2) The Pathway proposes the assessment of five different components in order to determine the level of nutritional risk in infants under 6 months and their mothers. These five components are: (1) the infant's clinical status, (2) the infant’s nutritional status, (3) feeding practices, (4) maternal mental health, and, (5) MAMI risk factors such as prematurity, orphan, absent mother, premature, multiple birth, adolescent mother, mother with HIV, and maternal malnutrition among others. After assessing these five components, a risk classification is made for the infant-mother dyad. In case of high risk, a referral to inpatient care is made, if the risk is low it is recommended to continue with the usual care pathway, but if it is moderate risk the dyad will be enrolled in the MAMI pathway to receive outpatient support. This support will last until the infant reaches 6 months of age where a last assessment will be conducted and any required referrals to an existing program covering infants from 6 months of age will be made to ensure the continuum of care.

## Adaptation workshop

The MAMI Advisor conducted sessions with relevant stakeholders to (1) validate the mapping of the existing health and nutrition services and capacity in Cabo Delgado (CD) and (2) to provide an orientation on MAMI and the MAMI Care Pathway. Following this, another workshop was conducted in order to find a consensus on an appropriate contextualization of the MAMI Care Pathway for CD. The adaptation workshop asked the participants to work in teams, where they were provided with the MAMI Care Pathway forms (MAMI assessment form, feeding assessment form, mental health assessment form, enrolment, and follow-up form) and the rapid assessment guide. The team was asked to analyze the tools and decide if they are suitable in the Cabo Delgado context and what adaptations, if any, were required.

After analysis of the forms, participants confirmed that the MAMI assessment, feeding assessment, mental health assessment, and enrollment and follow-up forms were likely too complex for Community Health Workers (CHWs)[[2]](#footnote-3) to manage. It was suggested that there is a need to have an appropriate rapid screening tool for CHWs (APEs or ACs) to screen and identify children under 6 months and their mothers who require a full MAMI assessment to determine their nutritional risk classification and if they should be enrolled to the MAMI Care Pathway (moderate risk) or referred to inpatient care (high risk).

Participants also recognized that the MAMI assessment form collects information from different services active within the current health and nutrition care framework in Mozambique. For example, it was found that the infant clinical assessment section has some questions from the Atenção Integrada das Doenças da Infância (AIDI / IMCI).

In this section a question alluding to disability was recognized (Congenital condition/ disability causing feeding difficulty (e.g. cleft lip, tongue tie, etc.)), however, it was suggested that for future implementation in Cabo Delgado, more disability conditions that put the child at nutritional risk should be assessed, since according to the group, different types of disabilities are found in Cabo Delgado, such as a caregiver or infant cognitive disability.

In another hand, the nutritional assessment section in the MAMI Assessment Form is similar to the growth assessment conducted by the Consulta de la Crianza Sadia (CCS) except for the MUAC measurements which are currently not used in children under 6 months in the country. Participants highlighted the importance of not going against the PRN and ensuring referral to inpatient care in cases where the infant has a weight-for-length <-2.0 SD (under the MAMI Care Pathway, if no medical complications, this infant-mother dyad would not be referred and would be managed through outpatient care). It was emphasized that if the MAMI care pathway is to be implemented, it should be connected to the hospitals to ensure referral and counter-referral when cases of malnutrition in children under 6 months are discharged so that each case can be followed-up at the community level or at a health center with outpatient care.

Also, similarities were found between the MAMI enrollment and follow-up form and the tools used in the existing Consultation for Children At Risk (CCR). It was discussed that the CCR could be the space to establish the MAMI Care Pathway Assessment since the consultation is performed by qualified health workers within the current health system and they could easily be trained to apply the aspects they aren’t currently doing e.g. maternal mental health assessment and specific assessment of feeding practices. When reviewing the CCR card that is filled out for the follow-up of each patient, a space was found that could be used for the evaluation of other associated risks such as the mother's MUAC or problems such as excessive crying or sleep problems.

In relation to the mental health status assessment format, it was not recognized by the participants and although they acknowledged that there is a need in relation to the care of mental health difficulties, they also accepted that it is not something they have explored yet and that with the future implementation of MAMI pathway, its use could be explored.

The MAMI consultant shared a mental health assessment form obtained in a health center in order to share with the participants that from the local health system, some mental health activities are being done. It was agreed that if they want to implement the MAMI care pathway they should contact the health cluster so that they can provide guidance regarding the relevance of the tool, adaptation if necessary, referral routes, and training to be able to apply this assessment.

## MAMI Pathway Mozambique Who, Where, What

### First pilot

As the local health authorities were part of the adaptation workshop, they highlighted the importance of avoiding new components/services since this requires prior approval from the Ministry of Health. To start a pilot of the MAMI Care Pathway in Mozambique, the current services and guidelines must be followed, focusing on strengthening the services rather than proposing new approaches.

A first approach is proposed below for the pilot implementation of the MAMI Care Pathway, using the consultation platform offered by the Mozambican health system, as well as its community components.

APE - Elementary polyvalent agent - CHW

AC – Activist - CHW

CCS – Healthy Child Consultation (Includes growth and development follow-up, vaccination, supplementation, and IYCF counseling)

CCR – At-risk Child Consultation

AIDI - Integrated Management of Childhood Illnesses - IMCI

TDA - Outpatient treatment of malnutrition

TDI - Inpatient treatment of malnutrition

PRN - Nutritional rehabilitation program

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Screening** |  | **Assessment** |  | **Support and Management** | | |  | **6 months of age outcome review** |
| **What?** | **What?** | **MAMI Inpatient Care** | | | **What?** |
| Risk factors\*:  -Born preterm  -Low birthweight (<2500g)  -Mother absent or dead  -Multiple birth  -Receiving other food instead of exclusive breastfeeding  -Breastfeeding difficulty  *\*From the At-risk child card* | At Healthy Child Consultation (CCS\*):  -Any danger sign -> AIDI/ IMCI  -Growth assessment:   * W/L <-2 or <-2 🡪 referral to inpatient care * W/A <-2 &/or any risk factor 🡪 At-risk children consultation (CCR)   If to CCR, re-assess:   * Danger signs * Clinical signs and symptoms * Growth   Assess:   * MAMI risk factors * Feeding * Maternal mental health   *\*Repeat the process with vaccination calendar (2 months, 3 months, and 4 months)* | **What?** | | | -Growth monitoring  -Feeding assessment  -AIDI / IMCI  -Nutritional status of the mother |
| Clinical stabilization and/or treatment under the breastfed or non-breastfed infant classification according to the PRN (Nutritional rehabilitation program) | | |
| **Where?** | **Who?** | |
| Inpatient care | Hospital staff (e.g. doctors, nurses, nutritionists) | |
| **Guides and Forms** | | |
| Nutritional rehabilitation program -PRN  *(Refer to CCR after discharge as usual)* | | |
| **Where?** | **Where?** |  | | | **Where?** |
| -Community  -Mobile Health Brigades  -Newborn care appointments  -Maternity wards | -Health Centre  -Mobile Health Brigade | **MAMI Outpatient Care** | | | CCR |
| **Who?** | **Who?** | **What?** | **Who?** | **Where?** | **Who?** |
| -APEs  -ACEs  -Nurses from the newborn care service or maternity wards | At-risk child consultation (CCR) Nurse | **1.** Counselling on core issues  **2.** Personalized counselling and actions to address specific risk factors and issues as needed:  - Clinical care  - Counselling & feeding support  **3.** Mental Health screening and referral if needed  **4.** Monitoring the progress of mothers and infants (adjust frequency of follow-up as appropriate) | - CCR nurse  - Mental Health Staff | - Health Centre  - Mobile Health Brigade | CCR nurse |
| **Referral to other available support services as needed** | | | **Continuum of care** |
| -Referral to mental health services for the mother and follow-up  -Referral to malnourished pregnant and lactating women supplementation (PRN)  -Follow-up referrals to vaccination services | | | - Malnutrition treatment (TDA or TDI)  - IMCI  - CCS (IYCF counseling, micronutrient supplementation/Vitamin A, vaccination) |
| **Guides & Forms** | **Guides & Forms** | **Guides & Forms** | | | **Guides & Forms** |
| -Healthy Child card  -At-risk children card | -Healthy Child card  -At-risk children card  -MAMI feeding assessment form  -Local form mental health assessment | -At-risk children card  -At-risk children register book  -MAMI counselling cards (core and specific topics) | | | - Healthy Child card  - At-risk children card |

### Capacity building

The training of trainers for the MAMI care pathway package was held on May 10, 11 and 12. This training was attended by representatives of the organizations that validated the MAMI care pathway (Nutrition Cluster partners), and the objective was to leave the capacity to be able to subsequently offer the workshop to the staff that will implement the first pilot among which should be considered CCR, CCS, TDI, AIDI staff. These staff should receive this training so that they understand the MAMI care pathway and that it seeks to better connect the services already available. It is important to ensure that they understand the importance of referrals and that referrals are effective.

In addition, the nurses and nutritionists of the CCR service should receive an additional block of MAMI training to be able to assess feeding practices and to know and practice the MAMI-related counseling topics proposed in the MAMI Care Pathway package. They should also receive sensitization on mental health issues. In case the Pemba mental health technical group considers it feasible, they should receive training to apply the Maternal Mental Health assessment tool and to activate the referral pathway when a mental health challenge is identified.

The APEs and ACs should receive shorter and more focused training since they cannot extend their functions in the current pilot. Among the points to be strengthened is their ability to identify at-risk children under 6 months of age and their mothers, through the review of the well-child card or established screening questions related to breastfeeding that they can ask mothers to be able to invite them to the CCS and later to the CCR.

## Assumptions

* There is sufficient staff for the CCR service
* Adequate means of communication are in place to ensure referral
* Strong inter-service relationships are built to secure referrals
* Feeding practice assessment forms can be used to support the CCR service
* Counseling cards on core issues and specific difficulties are translated and can be used as support material for the CCR service
* APEs and ACs are in contact with the person responsible for the CCR service closest to their community in order to support the follow-up process

## Recommendations

For the start of the first pilot, it is recommended that a workshop session be held as part of the training so that participants can propose ways to ensure referrals between the different services are effective and functioning. Studies related to HIV care show that the loss of patients is frequent and it is therefore recommended that follow-up be reinforced[[3]](#footnote-4). While HIV treatment is not the same as nutritional risk monitoring, what is related is the need for follow-up and monitoring of patients.

With the intention of integrating MUAC measurements for infants less than 6 months, it is recommended that the Infant Feeding Technical Working Group prepare and propose a protocol to the Ministry of Health to generate evidence on the use of anthropometric measurements in infants less than 6 months that are feasible to be done by CHWs at the community level e.g. MUAC. During the remainder of 2023, a window of opportunity will open with the publication of the new WHO guidelines for the treatment of acute malnutrition where MUAC will most likely be included as a measure in infants less than 6 months[[4]](#footnote-5).

It is highly recommended to establish a monitoring system that keeps a record of the referrals of children W/L < - 2 and < -3 that are referred to inpatient care, the number of children with W/L < - 2 and < -3 that are admitted to inpatient care, the time that children with W/L < - 2 and < -3 pass at the inpatient care, the breastfeeding difficulties on admission to inpatient care, and the discharge criteria, including the Standard Deviation for the W/L indicator and the progress of the breastfeeding difficulties. This data can support future advocacy activities related to the efficacy and efficiency of inpatient treatment for all W/L < - 2 and < -3 cases.

Regarding disability, it is recommended to establish linkages with technical working groups if they exist, and with health authorities, to determine if is possible to add to the MAMI assessment specific questions that may help to identify difficulties, while the referral routes for support are built or reinforced.

Another opportunity to explore would be to strengthen the curriculum of the CHWs so that they could provide closer accompaniment at the community level after the comprehensive evaluation by the CCR service. In this sense, it would be interesting to explore whether community midwives would like to be part of the CHWs as ACs, in order to receive training and be able to provide screening and/or assessment and support to the women in their communities.

The issue of mental health is fundamental so it should be followed up through the technical working group on infant feeding. Before starting the pilot, the assessment tool to be used should be defined, as well as the referral routes. In addition, the people who will apply the mental health tool must be sensitized and trained.

Finally, attention should be paid to infant formula donations since, although it is recognized that they are sometimes necessary as a last resort for feeding, and the PRN has a section for the care of non-breastfed infants it is important to establish communication with the different actors such as religious groups and social protection authorities, in order to develop adequate delivery protocols to avoid an increase in morbidity and mortality due to the use of breast milk substitutes in crisis environments without the management of the risks.

1. [MAMI Care Pathway Package, Version 3 (2021) | ENN (ennonline.net)](https://www.ennonline.net/mamicarepathway) [↑](#footnote-ref-2)
2. In Mozambique there are 2 types of Community Health Workers: Elementary Multipurpose Agents (APEs) and Activists (ACs) [↑](#footnote-ref-3)
3. Vieira L, Mahumane AM, Napua M, Chale F, Manuel JL, Cowan JG, Sherr K, Chapman RR, Pfeiffer JT. HIV-exposed infant follow-up in Mozambique: formative research findings for the design of a cluster randomized controlled trial to improve testing and ART initiation. BMC Health Serv Res. 2020 Mar 18;20(1):226. doi: 10.1186/s12913-020-5051-8. PMID: 32183779; PMCID: PMC7079378. [↑](#footnote-ref-4)
4. https://www.ennonline.net/updatingnationalcmamguidelines2022 [↑](#footnote-ref-5)