

Community-Based Management of At-Risk Mothers and Infants (C-MAMI): Preliminary Results from Save the Children's Pilot of C-MAMI in Bangladesh

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1. BACKGROUND AND APPROACH

In 2015, Save the Children collaborated with ENN and the London School of Hygiene and Tropical Medicine (LSHTM) in the development of an innovative C-MAMI tool. The C-MAMI Tool provides a format for community health workers to identify vulnerable infants <6m and their mothers at risk of malnutrition. Putting the latest WHO technical guidance into practice, it was developed as a first step to fill a gap in programming guidance for outpatient treatment of infants <6 mo. and is modeled after the IMCI approach. This fulfils a current evidence gap translating the high-level WHO Guideline into something that is practical and effective in the field.

- STUDY AIM:** To field test the C-MAMI guidelines and tool (Version 1) in a rural setting in Sadar upzila in Barisal district, Bangladesh.
- Secondary research aim: Calculate the cost and cost-efficiency of this new treatment method by highlighting cost differences between standard inpatient protocol and the C-MAMI model from a societal perspective, considering costs to both the healthcare provider and caregivers.



A MAMI officer supports a mother to solve a breastfeeding challenge in Barisal, Bangladesh.

2. METHODOLOGY

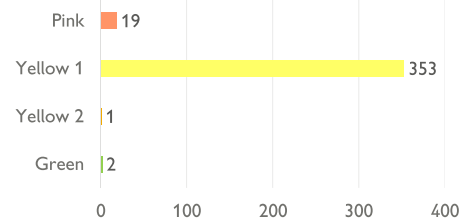
- Operational research study, with the aim to estimate the C-MAMI protocol's effectiveness (intervention group) compared to the current standard inpatient protocol (control group).
- All infants under 6 months in the intervention group were included as part of an initial screening for identification of Severe Acute Malnutrition (SAM) by MOH&FW community health workers at every health contact point (EPI posts, PNC visits and at all medical consultations at community clinics). All infants u6m identified with SAM were considered part of the intervention group, and assessed and treated per instructions in the C-MAMI Guidelines.
- The C-MAMI Assessment for nutritional vulnerability in infants under 6 months, includes assessment and classification of both the infant and mother to identify appropriate management activities. **Figure 1** outlines the framework and color code schemes used to classify infants.

1 C-MAMI Tool: Assess, Classify and Act Framework (Version 1)

ASSESS		CLASSIFY	ACT (MANAGE)	Colour codes*
Ask, Listen	Identify, Analyse			
		Inpatient referral and care		Pink
		Priority 1 enrolment into C-MAMI outpatient-based care		Yellow 1
		Priority 2 enrolment into C-MAMI outpatient-based care		Yellow 2
		Reassurance and discharge with general advice only		Green

*Colour Codes are in line with IMCI colour classifications. The C-MAMI Tool has also sub-classified into Yellow 1 and Yellow 2 to aid prioritisation.

2 Overall C-MAMI Tool Assessment Results



3 Results from Infant Breastfeeding Assessment

Infant breastfeeding assessment – Infant	% of study participants who reported problem/condition (n=373)
Pink	
Structural Problem	0 (0.0)
Abnormal tone/ posture/ movement	0 (0.0)
Excessive jaw opening or jaw clenching	0 (0.0)
Not willing/able to suckle	3 (0.8)
Coughing / choking while BF	2 (0.5)
Yellow 1	
Not well attach	273 (73.2)
Not suckling well	12 (3.2)
<8 breastfeed in 24 hour	174 (46.6)
Gets other foods or drinks	198 (53.1)
Yellow 2	
Breastfeeding difficulties based on mother's breast condition	0 (0.0)
Respiratory difficulties	0 (0.0)
Green	
No feeding problem	58 (15.5)
No other issues	56 (15.0)

Infant Breastfeeding Assessment Mother questions – Yellow 1	% of study participants who reported problem/condition
Infant breastfeeding assessment, n (%)	
Yellow 1	
For breastfeeding mothers N= 192	
Re-lactating	4 (2.1)
Discharged from Supplementary Feeding Programme	4 (2.1)
Needs to express breast milk and cup-feed	9 (4.7)
Breast conditions e.g. engorgement; mastitis; nipples sore/cracked/large/flat; thrush	8 (4.2)
Perception of not having enough breast milk	156 (81.2)
Other concerns	106 (55.2)
For non-breastfeeding mothers N=1	
Concerns about meeting the nutritional needs of her infant	0 (0.0)
Working away from home	0 (0.0)
Delegating infant feeding and care to another	1 (100)

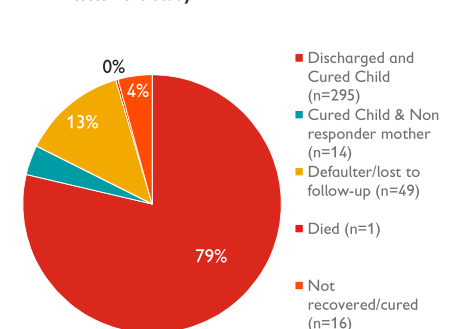
3. KEY FINDINGS

- In total, 1,452 infants under 6 months of age were screened in the intervention areas.
- 375 infants (25% of those screened) were identified as having SAM and enrolled as participants in the study.
- Out of the 375 infants assessed using the C-MAMI Tool (Version 1), the vast majority (95%) were categorized as "Yellow" in the Overall Assessment Category, which brings together three assessment areas: Anthropometric assessment, Breastfeeding Assessment and Clinical Assessment. These results are pictured in **Figure 2**.
- Figure 3** shows the results from the infant breastfeeding assessment.
- Out of the 375 infants enrolled, 79% were cured and discharged by the end of the study period.** Full outcome results for all participants are pictured in **Figure 4**.

4. KNOWLEDGE CONTRIBUTION

- This study showed that the C-MAMI Tool can be an effective tool used to aid health workers to identify vulnerable infants under 6 months of age and their mothers at risk for malnutrition. Results will soon be collated from the Control group to compare outcomes for infants treated as per the local standard of care.
- Results from the costing aim of the research showed that the absolute cost per clinic of the C-MAMI intervention is higher from a healthcare provider perspective than the cost of the standard control protocol, but is more cost-efficient per child treated and less costly to caregivers.
- Along with the Barisal C-MAMI Tool pilot, the CMAM-I Tool was also piloted during the Rohingya Response, and this research, along with another evaluation by GOAL in Ethiopia, collated practitioner experiences and peer review, informed the revisions to Version 2.0 of the C-MAMI tool.

4 Participant Study Outcomes for infants in C-MAMI Assessment Study Arm



Every day and in times of crisis