

Special Section on MAMI: Management of at risk mothers and infants under six months



Field research officers measure the MUAC of an infant under six months in Barisal, Bangladesh, 2016

Save the Children

This issue of *Field Exchange* features six articles on managing nutritionally vulnerable infants under six months of age. This MAMI¹ section provides a snapshot of developments involving research, evaluation, programme experience and guidance development. Together they tell a story of progress, challenges and direction of travel that we reflect on here.

In 2015 Emergency Nutrition Network (ENN), London School of Hygiene and Tropical Medicine (LSHTM), Save the Children and a group of agencies and researchers developed the C-MAMI² Tool; a much-needed framework and approach to help guide programmers on how to manage malnourished infants under six months of age. Agencies have been utilising the Tool, notably Save the Children in Bangladesh and GOAL in Ethiopia. The C-MAMI Tool has now been updated to produce Version 2, shared in this issue, greatly informed by these and other programming experiences, most notably an evaluation of the Bangladesh and Ethiopia programmes also summarised in this issue. Key developments in the latest version include strengthened content on managing at-risk mothers as part of an infant-mother pair; assessment of nutritionally vulnerable infants under six months old beyond acute malnutrition parameters; and greater emphasis on health considerations. These reflect an understanding that assessment and management of vulnerability must include adequacy of infant growth, clinical care and the wellbeing of mothers.

Significant gaps of knowledge remain around the caseload of at-risk infants in different contexts and how to quantify caseload accurately. Research by Save the Children in Barisal district, Bangladesh, also summarised in this edition, examined this, investigating prevalence, risk factors and outcomes of infants with severe acute malnutrition (SAM) in a prospective cohort study. Unsurprisingly, the researchers found that existing treatment services that rely on inpatient care were poorly accessed – only 17% of severely malnourished infants reported for care. While at first glance it looks like a high proportion of infants had ‘recovered’ by six months of age, it emerged that nearly one quarter were still severely malnourished, 3.9% had died and, compared to the cohort of non-SAM infants, the SAM group was significantly more stunted and underweight at six months. These findings highlight the limitations of only considering SAM as a measure of risk (and recovery) and support the need for early identification and accessible interventions for nutritionally vulnerable infants. Informed by this study, Save the Children is now

trialling the C-MAMI Tool in this setting, with results due late 2018.

Save the Children's research in a stable context in Bangladesh proved a valuable springboard for its response to the Rohingya crisis in 2017/18. Infants under six months old were identified as a concern on the ground and the C-MAMI Tool was adapted and piloted in the response with UNICEF support; lessons learned are shared in a field article and have informed both Version 2 of the C-MAMI Tool and programme adaptation. A critical impediment to programme planning, monitoring and scale-up, highlighted in this experience, is a lack of field-friendly indicators to identify at-risk infants at community level, both in surveillance and for assessment by community level workers – there are no MUAC thresholds for this age group and weight-for-length (the current measure recommended for risk assessment) is impractical. Scale-up is being planned as part of the response, but without clear quantification of caseload, making planning and impact assessment problematic.

As programmers get deeper into MAMI programming, they encounter challenging cases. When it comes to vulnerability, we know that low birth weight (LBW), premature and disabled infants are at greater risk of malnutrition and death, but this is poorly quantified and typically becomes a hidden burden. Neonatal interventions focus on survival of these infants, but what happens afterwards to their growth and development? When a child is admitted to a CMAM programme at seven months of age, we have no idea of their birth history and growth trajectory up to that point. An article by Partners in Health (PIH) in Rwanda gives some insight into the burden and challenges of managing this subset of infants and again highlights the need for earlier intervention than is currently typical. District hospitals in Rwanda are increasingly including neonatal care units (NCUs), which means there is increasing survival of LBW/premature infants and infants born with disability. Cross-sectional follow-up data by PIH on infants discharged from NCUs found prevalence of malnutrition way above that of the general child population; children had significant feeding difficulties and were anaemic, stunted and wasted. In response, several paediatric development clinics (PDCs) were developed – a medical-home model to provide more comprehensive and specific medical/nutritional follow-up. Subsequent analysis of follow-up data on referred cases again showed they still weren't doing well, which has led to significant programme developments to address gaps around skilled capacity and assessment.

This intervention is unusual in a low-resource setting in terms of the specialist input and capacity needed to deliver this level of service. If it might be difficult to implement or sustain in many settings, why have we included it in this issue? Its relevance is that it provides a valuable insight into the burden, complexities of management and possible approaches to address management of a complex sub-set of infants that currently are invisible but that programmes will increasingly encounter once they start to manage infants under six months of age. We know that the burden of LBW/prematurity/disability in developing countries is high and underestimated. These infants are contributing to the CMAM programme burden, the stunted population, sick children and those who die. Shouldn't we be intervening early and figuring out how we do that? There is no magic bullet and it does need skilled support that takes investment in staff and time. One key challenge is to determine a quick and simple means of identifying the most at-risk of these infants, so that interventions are targeted to those where it will make the greatest difference – a focus area of the MAMI Special Interest Group³. In Rwanda they are ‘feeling’ their way through an approach that can work in their context; we can learn from them. Different approaches will be needed in other settings.

A critical question is whether MAMI interventions are cost-efficient and cost-effective. Save the Children calculated the cost-efficiency of a protocol based on the C-MAMI Tool in Bangladesh compared to the standard, inpatient-based protocol. The cost of C-MAMI to the healthcare provider was higher than the standard, but more cost-efficient per infant treated. If fully integrated into the national health system, the cost of C-MAMI would be halved. Costs to caregivers were lower for the C-MAMI Tool. More data are needed on the costs of such interventions that include the societal costs of not intervening – sick, chronically undernourished and developmentally delayed infants cost systems and lives.

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¹ Management of At risk Mothers and Infants under 6 months. Formerly ‘Management of Acute Malnutrition in Infants under 6 months’, this was revised in 2017 by the MAMI Special Interest Group to reflect the profile of infant-mother pairs being identified, their associated risks, and consequently the wider scope of interventions needed to cater for/support them; these include but are not limited to nutrition.

² Community Management of At Risk Mothers and Infants under six months.

³ www.enonline.net/ourwork/research/mami