A review of nutrition-specific and nutrition-sensitive approaches to preventing MAM

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**Background**

**CMAM Forum Technical Briefs**

Aim to summarise current thinking and highlight gaps in research / programming on key topics related to acute malnutrition.

**MAM Technical Briefs**

Series of 3 briefs commissioned to review current experience and evidence relating to

- The management of acute malnutrition
- Nutrition-specific prevention of acute malnutrition
- Nutrition-sensitive prevention of acute malnutrition
Acknowledgements

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Nutrition-specific interventions reviewed

Pregnancy

- Folic acid supplementation
- Multiple micronutrient supplementation
- Calcium supplementation
- Provision of nutrition supplements

Infants and children

- Provision of nutrition supplements
- Exclusive breast-feeding
- Complementary feeding
- Vitamin A supplementation
- Preventive zinc supplementation

Others

Iron supplementation, measles vaccination, cash transfers, deworming, counselling, education, group education, GMP, mental health and SBCC.
Nutrition-sensitive interventions reviewed

Food security and livelihoods

- Agricultural interventions
- Addressing seasonal food insecurity
- Early warning and resilience
- Social protection and safety nets
- Conditional and unconditional cash transfers
- Dietary quality and diversity

Water, Sanitation and Hygiene (WASH) interventions

- Management of diarrhoea
- Environmental enteropathy
- Promotion of hygiene behaviours and practices
- Hygienic and sanitary environment
- Drinking water – quality, distance and source
- Improved sanitation facilities
- Reduction and elimination of open defecation

Early Childhood Development and Positive Caregiving
Some findings..
Interventions during pregnancy to prevent MAM

Interventions to prevent LBW, SGA and pre-term

• Recent evidence\(^1\) shows LBW, SGA and pre-term births are associated with 2 x increase in risk of developing wasting in children 12-59 months.

• Lancet review demonstrated that energy-protein supplementation of pregnant women increased birth weight by average of 73g and reduced risk of SGA by 34%, with more pronounced effects in malnourished women.

-> Interventions to prevent LBW, SGA and preterm births likely to have impact on preventing MAM.

Provision of nutrition supplements (blanket SFP)

• Current recommended practice to prevent MAM.

• Limited / conflicting evidence on effectiveness & impact on GAM.

• More evaluation on impact needed.

• Difficult to attribute impact directly.

• Costly at scale.

• SHOUHARDO II Multi-year assistance programme (CARE, Bangladesh) – greater impact through targeted approach to specific wealth groups.

Effectiveness of nutritional supplementation

- Evidence suggested using RUSF in BSFP most effective in preventing MAM

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Infant and Young Child Feeding

• 16% selective feeding programme admissions - children < 6 months. 

• Recent evidence focuses on importance of complementary feeding in prevention of stunting (not wasting).

• Provision of appropriate complementary food -> significant weight increases (6-23 months)

• Use of LNS in complementary feeding =/> mixed results: RUSF as complementary food in Malawi associated with weight gain

• Study of home fortification of complementary foods -> no effect on weight for length

Cash transfers

• Varied evidence..

• Systematic review\(^8\) -> cash transfers improved calories consumed and dietary diversity, mixed impact on child nutritional status.

• Study in Niger\(^9\) - food supplements for children PLUS cash transfers for households more effective than food supplements only or cash only.

• Need for more evidence on nutritional impact and cost-effectiveness of cash transfer interventions.

• Evidence that vouchers are better at increasing calories and dietary diversity, but less preferred option\(^{10}\).

Food security / livelihoods - dual approach

- **Short-term food security interventions to relieve seasonal / sudden shocks**
  - Social protection
  - Seasonal employment opportunities

- **Long-term interventions:**
  - Improving agricultural productivity
  - Diversification of livelihoods / income sources
  - Increasing resilience to shocks / seasonality
  - Improving quality of diet / dietary diversity
Diarrhoea and MAM

- Acutely malnourished children have more frequent & longer episodes of diarrhoea\(^{11}\)
- Acutely malnourished children without diarrhoea improve their nutritional status more rapidly\(^{12}\)
- Zinc supplementation important in reducing incidence of diarrhoea and pneumonia\(^{14}\)
- Vitamin A supplementation can reduce diarrhoea mortality by 30%\(^{15}\)

• Recent evidence-> primary causal pathway to stunting from poor sanitation from Environmental Enteropathy rather than diarrhoea\textsuperscript{16}

• Need to consider in prevention of acute malnutrition

\textit{->'the failure of nutritional interventions in the developing world may be attributed to environmental enteropathy'}\textsuperscript{17}

\textsuperscript{16} Humphrey, J.H. 2009.
\textsuperscript{17}Poonum S. Korpe PS, Petri WA, 2012.
WASH Interventions as a preventive strategy for MAM

- Clean and sanitary environment for infants and young children.
- Improved behaviours and practices.
- Reduction / elimination of open defecation.
- Improved sanitation facilities.
- Improved quality, distance and source of drinking water.
Condition of women / caregiving

• Women’s empowerment linked to 50% of stunting reduction 1970-1995\textsuperscript{19} Recent evidence shows condition of women & HH wealth related to both stunting and wasting

• Changes in a woman’s time allocation -> adverse effects on health and nutritional status

• Maternal mental health - significant indicator of sub-optimal caregiving and health-seeking behaviours\textsuperscript{20}

• Study in Brazil\textsuperscript{21} found common mental disorders in mothers doubled risk of moderate and severe malnutrition in children.

Conclusions

Key findings / evidence:

• Very limited rigorous evidence on effect of specific and sensitive interventions

• Prevention of LBW, SGA and pre-term births likely to have impact on MAM.

• Importance of diarrhoea prevention and management in MAM prevention.

• Importance of improving condition of women in MAM prevention.

• Effectiveness of cash transfers + nutrition supplements.

Programming needs:

• Dual approach to food security.

• Need to boost WASH as key preventive intervention.
Conclusions cont’d

More evidence needed

• Effectiveness (and cost-effectiveness) of BSFP.

• Most effective social protection approaches.

• Need for more evidence on relationship between different morbidities and MAM.

• Need for understanding of link between acute malnutrition and environmental enteropathy.
• Are most preventive interventions for MAM to be ‘subsumed’ within stunting prevention strategies – as many of above interventions relevant to both?

• Is it a case of including indicators of MAM reduction in broader strategies to prevent undernutrition – or MAM-specific interventions?

• Do we target specific population groups for MAM prevention? Are these the same as for stunting prevention?
Collaborating to improve the management of acute malnutrition worldwide

Thank you!
References


17 Poonum S. Korpe, William A. Petri Jr., Environmental enteropathy: critical implications of a poorly understood condition, Trends in Molecular Medicine, Volume 18, Issue 6, June 2012, Pages 328-336, ISSN 1471-4914.

