INFANT AND YOUNG CHILD FEEDING IN EMERGENCIES

GIFA/ENN PROJECT (2003-2004)

Final report – Severe Acute Malnutrition in infants <6 months section

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Secondly, a critical issue emerged regarding the most appropriate management of malnourished infants less than six months – an area already identified by the Core Group as lacking in evidence. A number of field practices were identified, with individual experiences and effectiveness of interventions varying between countries and programmes. A comparative review was made of recommendations/field practice, to identify common ground, gaps, and conflicts, review the supporting evidence and determine the implications for the development of technical guidance within module 2.

Managing malnourished infants under six months – a review

Protocols and practices to review were selected based on contacts made during collation of case studies of field activities. Protocols and practices from MSF (Afghanistan and Burundi), ACF (Afghanistan, Liberia, Burundi), Merlin (Sierra Leone), Concern (Bangladesh), and recommendations from MSF, ACF, WHO and the Ethiopian Framework for severe malnutrition were included. Two hospital/academic institutions were also approached (Tahmeed Ahmed, International Diarrhoeal Centre, Bangladesh and Hanifa Bachou, Norway and Makere University, Uganda), however due to timing and communication restraints, available information was not sufficient to include in the review.

A summary of the specific differences between protocols and practice regarding infants less than six months is included in appendix 3. The majority of guidelines aimed to re-establish breastfeeding in the young infant, if necessary using supplementary suckling, and relied on breastmilk to achieve subsequent catch-up growth. In contrast, draft WHO recommendations for infants less than six months advise that breastfeeding cannot be relied upon for treatment. Supplementary milk (F75, then F100) is recommended by WHO before each breastfeed, which they feel is necessary to ensure the survival of the infant.

Varying sources and levels of evidence supported current recommendations and practice. Many field activities and agency protocols have been guided by the ACF guidelines[1], developed on the basis of documented interventions in Liberia[2] and operationalised in many programmes since. In many cases, however, reported evidence based on

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[1] Assessment and Treatment of Malnutrition in Emergency Situations, *Manual of Therapeutic Care and Planning for a Nutritional programme.* Written by Claudine Prudhon*, published by Action contre la Faim (2002)

[2] Field Exchange, Issue 9, Infant feeding in a TFP, MSc thesis, Mary Corbett, p7

programme experiences has not been fully documented, or has not been widely disseminated. Also, the context of emergency programmes has a significant influence on outcomes and is critical in interpreting effectiveness of interventions.

Evidence behind technical sources of guidance is also variable. The lack of substantial research in this area means that limited data may be given a higher credence than it merits. As it stands, there is scope for considerable confusion as to appropriate practice in the field. Conflicting recommendations may undermine the perceived value of guidance, and have a detrimental effect on the management of malnourished infants.

Other key issues that emerged from field staff were:

- Feeding infants under six months who have been separated from their mothers.
- HIV/AIDS in the Southern Africa crisis
- Infant feeding and HIV: *"the decisions are not "black and white", hence it is difficult to give straight forward advice on what to do in the field, e.g. in Southern Africa" -ACF*
- Including infants under six months in surveys – what to measure. Infants under six months have been included in some surveys (not systematically, and more opportunistic measurement of infants rather than random sampling).
- Assessing infant feeding practice in surveys. Established criteria, such as rates of exclusive breastfeeding and complementary feeding rates, are included in surveys of practice. However guidelines are needed on more comprehensive qualitative and quantitative assessment of infant and young child feeding practice.
- How to strengthen/build local capacity, of health centre staff and mothers. *"Often the use and availability of supplementary foods, in the clinics risks undermining mothers' belief that they can do things themselves, within the capacity of their own resources (e.g. increase feeding frequency). Mothers reported that they don't go to the clinics when they know that there are no supplementary foods being distributed." Margaret McEwan and Helen Chiwra, Care International, Zambia.*
- Use of locally manufactured products in feeding programmes
- Use of locally and seasonally available foods in feeding programmes
- Provide a holistic service to the malnourished child. "*Health centre staff do not see nutrition as a priority. A child presenting with malaria is not assessed for malnutrition, and the link between illness and malnutrition has not been emphasized/understood. Feedback from the district and regional trainings using the integrated management of child illnesses approach has helped to make that link."- Margaret McEwan and Helen Chiwra, Care International, Zambia.*
- Appropriateness of the general food ration for older infants and young children
- Limitations of using height as a proxy for age when targeting infants 6 months – 5 years. This criteria will exclude infants who may be older but are chronically malnourished and stunted, and may be particularly vulnerable.
- In terms of including infants under six months in surveys, we still lack the capacity to accurately measure young infants, and the growth charts on which to interpret findings. Thus, in practice, community workers come across infants who are visibly malnourished but they lack the criteria by which to target them, or the manner in which to practically manage them.

- Correct mineral and vitamin supplementation and requirements for severely malnourished infants and children at different ages and different stages of recovery

3.0 Recommendations

There are many individuals and agencies with a wealth of experience to share in infant feeding in emergencies. Some means of collating field experience on an ongoing basis, would not only capture experiences otherwise lost but also help to continue the process of updating the modules and identifying field issues and needs in training.

It is recommended that artificial feeding of infants, including unaccompanied infants, groups of infants (e.g. orphanage feeding) and at a population level, is addressed in greater depth and on a practical level within the technical guidance of module 2.

Resolution of issues regarding the management of malnutrition in young infants is critical, but requires involvement of a wider network of technical experts and practitioners outside the Core Group. An urgent consultation involving agencies active in the field and technical individuals/bodies is required to achieve consensus.

Annex 3 Comparison of guidelines for managing malnutrition in infants under six months

Significant principles and details on the management of infants under six months were available from:

- MSF revised guidelines (draft, March 2003)
- Mike Golden, National Framework for Ethiopia, February 2003
- ACF "Assessment and Treatment of Malnutrition in Emergency situations"
- WHO draft WHO document: Nutrition in Emergencies, Part 2: Prevention and treatment of malnutrition and micronutrient deficiencies in emergencies
- MSF Afghanistan TFC protocol
- Concern Bangladesh TFC protocol
- MSF Burundi TFC protocol

Information on principles of practice and guidelines used was supplied by CRS Angola, Merlin Sierra Leone, Save the Children Sudan.

Comparisons

Principles of management

1. There appears to be a fundamental difference in the over-riding principle which governs the management strategy of all the protocols and activities compared to the WHO protocol.

- The Golden protocol states that the objective of treatment in these patients is DIFFERENT than for other age groups. Here the objective is to re-establish full and exclusive breast feeding of a quality that allows for catch-up growth on breast milk alone.
- The goal of the ACF guidelines is to achieve recovery and rehabiliation through breastfeeding, and thus treatment focuses, when necessary, on systems to support breastfeeding, eg supplementary suckling.
- The WHO draft protocol states that the principles of management are the SAME as for older infants and children, with additional priority given to maintenance of frequent breastfeeding. It states that malnutrition in a breastfed child is a sign that breastfeeding has been inadequate and thus, breastfeeding cannot be relied upon for treatment.

2. The draft WHO protocol recommends maintenance amounts of supplementary formula to be given *before* breastfeeding the malnourished infant, and breastfeeding is offered afterwards to stimulate suckling. All of the remaining guidelines and field practices reviewed advice and practice giving breastfeeds before any other supplementary formula in the management of these infants.

3. With the exception of the WHO draft protocol, all of the remaining guidelines and field practices reviewed recommend or practice the supplementary suckling technique in these infants.

Admission and discharge criteria

4. The importance of the infant birth, medical and feeding history as well as current clinical condition, feeding capacity and maternal capacity and state are fundamental to determining whether to admit a young infant to a TFC. This is emphasized in the ACF, MSF and Golden guidelines and was related in the field practices.

5. There are a number of differences in admission criteria, largely due to how infants under six months are defined for this purpose (ie whether height or weight take priority over reported age). Along with medical criteria, feeding criteria, and clinical state, infants under six months are considered those who are

MSF:	Less than six months or less than 65cm in height
ACF:	Less than six months or less than 4kg
Golden:	Less than 65cm or less than 3kg
MSf Afghanistan:	Less than six months in age
MSF Burundi:	Additional criteria if <49cm in height, then < 2.1kg are admitted

6. A number of the protocols/practices use anthropometric criteria for discharge. In others, discharge is independent of anthropmetric indicators but based on progressive weight gain (as well as medical and maternal criteria).

Concern B: 80% W/H at least 3 consecutive weighings
85% W/H
WHO: 80% W/H or –2SD or ideally, 90% W/H or –1SD.

Golden: Gaining weight for at least 5 days on exclusive breastfeeding.
ACF: Gaining adequate weight
MSF guidelines, MSF B: Gaining weight for at least a week on exclusive breastfeeding at a rate of 5-10g/kg/d

Protocols

7. There are a number of variations in the aim of supplementary suckling between the protocols.

- A number of the protocols ACF, Golden, MSF) use supplementary suckling, where necessary, to re-establish exclusive breastfeeding. Any weight gain during the supplementary phase is through an increase in breastmilk production, rather than supplementary formula. Catch-up growth is then achieved through breastfeeding alone.
- The Concern Bangladesh protocol continues supplementary milk until the infant has achieved 80% weight-for-height, and then returns to exclusive breastfeeding
- The WHO draft guidelines rely on supplementary milk for recovery and rehabilitation, on the basis that breastmilk is insufficient to achieve this.

8. There are differences in the supplementary milks recommended for use:
   Diluted F100: ACF, Golden, MSF, CRS Angola, SC Sudan
   F75, F100: WHO, Merlin Sierra Leone
   Special baby milk: Concern Bangladesh (Based on alternative diluted F100 recipe in MSF guidelines)
   ICDDRB: Modular formula (recipie not available)

9. There are differences in the preparation of diluted F100.

   Golden, MSF Burundi: 1 bag F100 in 2.7 litres water
   MSF guidelines, MSF Afghanistan: 1 bag F100 in 2.8 litres water

   Also, the Golden protocol advises that quantities less than 135ml diluted F100 should not be prepared (ie 100ml standard F100 plus 35 ml water). However MSF guidelines and MSF Afghanistan include example preparation of 50ml standard F100 plus 15ml water to generate 75ml diluted F100.

10. All of the detailed guidelines recommend maintenance amounts of milk in the initial phase, but definition of maintenance volumes, and equivalent energy intake, vary between protocols and even within agencies:
    MSF guidelines: 140ml/kg/d (105 kcal/kg/d)
    Golden and MSF Burundi: 130ml/kg/d (100kcal/kg/d)
    Concern B: 150ml/kg/d (105kcal/kg/d)
    ACF: 130ml/kg/d

11. Only the Golden protocol refers to and makes a distinction in the management of oedematous infants under six months. This recommends using F75 in phase 1 instead of diluted F100. During the transition phase, infants convert to the same volume of diluted F100.

12. Only the MSF Burundi protocol distinguishes infants <1.5kg in management. This group have a separate protocol, based on 180ml/kgd (130kcal/kg/d) using breastfeeding, and supplemented with expressed breastmilk, diluted F100 and supported with overnight naso-gastric feeding. This has been developed and is being tried in Burundi in response to specific programme experiences and needs. A specific protocol is also given for managing LBW infants during the first week of life.

13. The MSF guidelines and Golden protocol give specific recommendations for the management of non-breastfed infants. They significantly vary, for example:

    - MSF recommends diluted F100 in the initial phase and once gained weight for 3 consecutive days, replace with infant formula, starting at 30-60ml/kg and increasing gradually. Advice to then follow the same principles as govern management of breastfed infants (*Query as to how would gain weight on diluted F100 and also the principles of breastfed infant feeding management are not compatible with establishing artificial feeding)*

- Golden recommends maintenance amounts of diluted F100 (or F75 if oedematous) in initial phase, diluted F100 in transition, double initial phase volume of diluted F100 in phase 2, and transfer to infant formula once reach 85% weight-for height.

The WHO draft protocol recommended maintenance amounts of F75 in initial phase, but no actual volume is suggested.

Some key questions/thoughts

Fundamental principle: can breastfeeding be relied upon in managing malnourished infants under six months?

Variable admission criteria
- how do you assess infants less than 49cms?
- should you admit infants who are less than 65cm, but are over six months of age, to the under six month programme?

Variable discharge criteria
-should anthropometric criteria be included, or is weight gain enough?

Appropriate supplementary formula
Diluted F100 v F75 v F100 v infant formula v other?

Should there be a protocol specific for young LBW infants?