Chapter 6
Key informant interviews

Chapter 6: Key informant interviews

6.1   Rationale and objectives

This chapter comprises a review of field experiences and 'front-line' perspectives on MAMI from qualitative data sources. The purpose is to explore priority areas for improving MAMI outcomes and to identify relevant issues not captured by the quantitative data examined in Chapter 5.

Objectives are to identify context factors that:

* facilitate good outcomes from MAMI;
* are barriers to good outcomes/underlie poor outcomes;
* are potentially modifiable vs. those which are not easily modifiable.

6.2   Methodology

6.2.1 Design

There were three distinct parts to the field experiences review:

a) A steering group meeting of key experts and representatives of partner organizations, where key MAMI issues were identified and discussed.
b) A series of semi-structured key informant interviews by telephone on themes identified in *a)*.
c) Two field visits to clinical settings (Kenya & Malawi).

6.2.2 Participants

Contributions were sought via:

a) Individual and organizational contacts identified by ENN, UCL CIHD and ACF, and further contacts on the advice of these.
b) Information on MAMI and a call to collaborate was posted on the following websites:
  * The UN Interagency Standing Committee Global Nutrition Cluster[147]
  * UCL Centre for International Health & Development[148]
  * ENN (Emergency Nutrition Network)[149]
c) Information was posted to E-lists and e-discussion groups including:
  * Child 2015[150]
  * Pronut Nutrition and HIV/AIDS (ProNut-HIV).[151]

Method of approach
Contacts were followed up by telephone and email. Information about the MAMI Project and key themes to be discussed was sent in advance of an interview (see appendix C).

Sample size
The steering group meeting was of all those able to attend. Key informant interviews continued until saturation, when themes were consistently repeated and no new issues emerged. Every attempt was made to hear from a range of different staff working in different organizations.

Non-participation
Nobody approached for key informant interview declined to participate. However, not all potential interviews took place, principally due to overseas travel commitments.

Aside from the Kenya & Malawi field trips, most key informant interviews were conducted by telephone by MK lead MAMI researcher (London, UK).

6.2.3 Data collection

A semi-structured interview questionnaire was developed by the principle researcher with input from the MAMI Project core group. This was formed around key themes identified at the initial steering group meeting (see Appendix D). The questionnaire followed a 'patient care pathway' from onset of disease to discharge and follow up. Written notes were made during interviews.

6.2.4 Data analysis

Using interview notes, key sub-themes were documented under each step of the patient care pathway. Contributors are named as members of the MAMI Project steering group, but individual quotes remain anonymous to keep the focus on common issues, rather than highlighting inter-organizational differences.

Possible research and policy implications arising from themes identified ere elaborated by the MAMI Project writing team. These are not meant to be definitive but to highlight key issues for future work.

6.2.5 Limitations

It is important to note that the sample of key informants is purposive and not necessarily representative. The possibility of bias cannot therefore be excluded. Given this, quantitative analysis of interview responses was not undertaken.

6.3   Results

6.3.1 Participant profiles

(a) Steering group meeting
A meeting of key agencies involved in MAMI in emergencies took place in London on 28th May 2007. A total of 23 participants representing 16 different organizations attended. A summary of this meeting along with participants is included in appendix C.

(b) Key informant interviews and (c) field visit observations
A total of 33 key informants were interviewed (see Acknowledgements). Key characteristics (country location of programme described; interviewee position; type of organization/programme) are detailed in Table 45, appendix C. Some participants described issues in multiple settings, so that the number of countries and projects represented in the table is greater than the number of individuals interviewed.

6.3.2 Themes

Key feedback, emerging policy implications and research questions from key informant interviews and field visits are summarised in Tables 30-35:

*   Prevalence & causes of infant <6m malnutrition (Table 30)
*   Identification of malnourished infants <6m and admission to programme (Table 31)
*   Programme details (Table 32)
*   Challenges in managing infants <6m (Table 33)
*   Training and support (Table 34)

More detailed feedback for each is included in Appendices D.5-D.10. Two case studies describe interesting innovations: a study on supplementary suckling in Liberia (Box 6) and pilot experiences in including disaggregated data on children less than two years in the UNHCR health information system in Dadaab, Kenya (Box 7).

6.3.3 Emerging Issues

Prevalence and causes of infant <6m malnutrition

There is little information on programme coverage of MAMI, as infants <6m are not routinely included in nutrition surveys. There are many contextual factors that influence the onset of SAM in infants <6m, such as birth history and medical state, maternal psychosocial influences, community influences socio-economic factors, access to health services and HIV. There are large inter-programme variations in the perceptions of these influences. Up to date guidance on HIV is often not reflected in TFP guidelines, with outdated and sometimes risky practices result.

Identification of malnourished infants <6m and admission

Not all programmes actively seek malnourished infants <6m and instead only deal with those that present. Not all presentations or admissions of infants <6m are recorded. In some cases they are 'cleaned' from datasets as they are considered non-standard data, or 'medical' cases. In some instances, infants <6m were assessed and treated outside the TFP, e.g. in a paediatric ward. This highlights the importance of cross-clinical training and skills sharing.

A combination of clinical judgement and anthropometric indicators are often used to determine admission. The nature and relative contribution of both varies greatly by programme. Assessing growth history on admission is difficult due to lack of serial measures on admission, use of different indicators in the community (weight-for-age) for community screening (MUAC) and for admission (weight-for-height), absence of birth weight record, and quality of anthropometric measurements (e.g. staff aptitude, lack of appropriate weighing scales, lack of standardised weighing).

There appear to be two 'types' of infant <6m presentation: those who present with reported feeding problems (and may be requesting food) but are clinically stable and those who present medically unwell. Some programmes have found it beneficial to use a pre-admission 'breastfeeding corner' to observe breastfeeding in infants that present.

Programme details

Programme guidelines are not consistent and need harmonisation, allowing for local variations. Nutritional and psychosocial care for mothers/ caregivers is important and should be included in guidelines. This should include guidance on good communication between staff and caregivers and clarity of expectations.

Opinion is divided about the effectiveness of supplementary suckling (SS) and on which therapeutic milk to use for infants <6m. Clarity is needed on both. Inadequate staff time and skills to support breastfeeding in infants <6m was as one of the perceived key limiting factors in MAMI. Managing orphans and non-breastfed infants was identified as a major challenge, both in treatment and longer term follow-up.

Challenges in MAMI

Links to other clinical services need to be improved. MAMI should be seen as a cross-cutting issue. Community-based care for infants <6m, for MAM cases and those too sick to attend inpatient facilities, is poor. Guidance on CMAM for infants <6m is needed. SFP is often not available for pregnant and lactating mothers.

Some programmes reported introduction of complementary foods or RUTF in infants <6m, where there was felt to be no other option. Clarity is needed on optimal feeding where BF is not possible.

Cost data

No documented evidence were offered on the time or cost implications associated with providing skilled inpatient or outpatient breastfeeding support in inpatient or outpatient feeding programmes. Documented experiences have tended to focus on the technical aspects and challenges.

Training and support

There is very little content on infants <6m in formal training or in induction courses. 'On the job' training and support and easy access to key resources and visuals would be especially valuable to field staff. More emphasis is needed on critical thinking and reflective learning in the field. Support materials are useful and should be available to field programmes.

Ways forward

Interviewees identified 'ways forward' that centred on admission criteria, guidance and 'tools' development, linking with other services and building staff capacity (see Table 35).

Table 30: Prevalence and causes of infant <6m malnutrition		
Sub-theme	**Synopsis of feedback**	**Emerging policy implication/research question**
Population surveys focusing on infants <6m	• Information often lacking on community prevalence of acute malnutrition in infants <6m • Technical guidance on including infants < 6m in surveys is lacking • Assumptions are sometimes made on the basis of admissions	• Nutrition surveys need to more routinely include infants <6m • Need technical/policy guidance on inclusion of infants <6m in surveys • Should determine rather than estimate programme coverage for infants <6m
Infant <6m factors underlying malnutrition	• Common problems include twins, ex-LBW, chronic illness (TB, HIV), acute illness (diarrhoea, respiratory), disability • There are large inter-site variations in what is 'common' presentation profile	• Future guidelines to give more details for identifying and addressing common infant related issues • Better (locally adapted) guidance on infant-specific medical screening needed
Maternal factors underlying malnutrition	• Mothers and caregivers often have problems themselves, range from medical to psychological to social • Care for orphans who have no mother/nobody to breastfeed is a significant problem; their long term care is especially challenging	• Future guidelines to give more details for identifying and addressing common maternal/caregiver related issues • Specific guidelines needed to manage orphans long-term, after discharge
Family factors underlying malnutrition	• Family environment sometimes unconducive to good infant feeding practices	• Future guidelines to give more details for identifying and addressing common family related issues
HIV	• Up-to-date HIV diagnosis and management guidelines, especially for infants <18m are limited • Some outdated and potentially dangerous practices persist (e.g. blanket use of replacement feeds)	• Where prevalent, HIV should be described in TFP/SFP guidelines and/or clear reference made to latest locally appropriate HIV guidelines • Urgent dissemination of latest recommendations for infant feeding in HIV exposed infants needed
Health services	• Access can be difficult • There are poor links with other services that might have prevented malnutrition	• Emphasise coverage of services and improve access (e.g. CMAM-type approach) • Improve communications with other services, especially those focusing on primary prevention of malnutrition e.g Baby Friendly Initiative
Societal and cultural factors underlying malnutrition	• A wide variety of social and cultural factors influencing malnutrition • Some positively impact infant nutritional status/increase chances of successful treatment for malnutrition • Some adversely impact nutritional status/decreased changes of successful treatments • Many factors and issues are common to many situations, though prevalence and impact varies widely by setting	• Immediate term: Ensure Operational Guidance on IFE is disseminated and implemented in all emergencies (e.g prevent inappropriate distribution of breastmilk substitues); rapid assessment to understand local contextual factors contributing to malnutrition. A quantifiable Sphere indicator needed to ensure these steps done. • Medium term: Engage with local communities/advocacy to address relevant social and cutural factors (encourage postive practices; discourage negative ones) • Longer term: Build on medium term actions, addressing indirect/structural factors affect infant feeding, e.g. insecurity, access to food, need for mothers to work, protection at a policy level. Cross-sectoral protection of and support for optimal infant feeding are essential to complement and support therapeutic interventions.

Table 31: Identification of malnourished infants <6m and admission to programme		
Sub-theme	**Synopsis of feedback**	**Emerging policy implication/research question**
Case finding in the community	• Not all programmes actively seek to identify malnutrition in infants <6m • Clinical judgement is often involved in determining which infants <6m to refer/admit	• Active case finding of infants <6m with clear diagnostic criteria would be more consistent with CMAM strategies • Clearer diagnostic criteria/checklists are needed, in particular to help community level health workers to identify cases in the community: a) Anthropometric (e.g. use of MUAC) b) Clinical criteria (including breastfeeding assessment)
Growth Charts	• Utility of growth monitoring to support the diagnosis of acute malnutrition is variable between settings. Issues include: lack of birth-weight record, validity of previous weights, different anthropometric indicators used in growth monitoring v feeding programmes (weight for age v weight-for-height or MUAC)	• Harmonise growth monitoring tools with entry criteria to therapeutic and supplementary feeding programmes
Assessment logistics and practicalities	• Many current guidelines not clear on infant-specific issues to look for, so child criteria are used, often supported by clinical judgement (this often includes assessment of mother) • Several centres found 'pre-admission' assessments useful (e.g. admit first to 'breastfeeding corner' prior to full admission)	• Clarify admission criteria for infant <6, and include assessment of relevant factors such as maternal/caregiver health
Anthropometry, measuring	• There is variation in how much importance different programmes attach to clinical and anthropometric criteria for admitting infants <6m • Many field scales are not sufficiently precise for infants (accurate only to 100g) • Technical problems with measuring sometimes occur (e.g. uncalibrated scales, infants clothed, 65cm cut-off confusion)	• Better evidence needed into 'ideal' case definition for TFP/SFP admissions • Programmes should have scales accurate to 10-20g (NB University of Southampton is currently developing new infant scales) • Tighter quality control of existing anthropometry guidelines
Reasons for presentation to feeding programme	Two main patterns of presentation occur: 1) Infants with reported breastfeeding problems/wanting 'food' (often to well resourced NGO projects), but clinically relatively stable 2) Infants with clinical complications (often to less well resourced projects/established (government) hospitals)	• Better case definitions needed to identify those whose anthropometry is acceptable but who report feeding problems • Active case finding and community engagement along lines of CMAM strategy would encourage appropriate presentation
Ward layout/ assessment environment	• Programmes with a separate assessment/ pre-admission area found it helpful	• As far as is possible, ensure this is space is available

Table 32: Programme details		
Sub-theme	**Synopsis of feedback**	**Emerging policy implication/research question**
Caregiver expectations	• Caregivers usually expect receipt of something from the programme (food, medicine etc.) • Caregiver expectations not always clear • Short admission usually preferred	• Guidelines should emphasise asking all caregivers basic clinical history questions: "What do you think is the problem?/what do think is the solution?/what do you think we can (or will) do?" This would reduce any expectation/reality mismatch.
Guidelines	• Many guidelines are currently in use • Large agencies tend to use own guidelines, government settings use international guidelines	• Need to harmonize guidelines, allowing for local variations as appropriate (see Chapter 4)
Staff time	• Staff time often major limiting factor in treating infants <6m (much more time-intensive than other groups to care for, especially when proving breastfeeding support)	• Programmes need to budget and plan for infant-specific staff (~1 full time support staff per 5-10 nursing mothers)
Staff supervision	• Good support and supervision are vital for high quality care	• Invest time and resources into optimizing organizational leadership and management
Medical treatments	• Not a major problem in most programmes • Drug dosing can be difficult • Some uncertainty regarding drug choice (antibiotics, micronutrients)	• Ideally would have medications in syrup as well as tablet form • Review guidelines and, where infant/child differences apply, clarify guidelines
Maternal issues	• Direct support (food, psychosocial) to mother was well received if available • Care for infant and self (notably drinking enough water) sometimes suboptimal • Kangaroo care worked well in some settings	• Assessment and care for mother needs to be better highlighted and detailed in new guideline editions (extra resources / specialist staff may be needed) • Ensure infant feeding education/support in place
Feeding methods	• Opinion was sharply divided on supplementary suckling (SS) as key nutritional intervention; either worked very well or hardly at all • Expert support often helped solve difficult feeding problems	• Training package needed for centres wanting to use SS • Research needed to distinguish SS field effectiveness from its efficacy in 'ideal'/'expert-led' setting • Improve availability of expert support/more infant-specific training
Type of milk used for therapy	• Lots of confusion regarding best therapeutic milk for various phases (F100 dilute, F75 most common used). Modified animal milks rarely used. • Major challenge is longer term feeding for orphans and others not breastfed	• Randomised controlled trials needed to explore which milk is best • Need better systems to manage infant formula supplies when needed as last resort
Physical space on ward	• Having areas dedicated to infants worked well	• Programmes to ensure that as far as possible, infant areas are available
Length of stay	• Average ~10days, often discharged on feeding criteria rather than anthropometric criteria • Mothers prefer shorter stay	• Long term follow-up studies needed to ensure safety of current discharge criteria • Community based programmes would be more in line with CMAM/caregiver preferences/ would better ensure safety if discharged when weight still low
Follow-up	Can be difficult, especially for orphans	Integrate infants <6m into community (CMAM) systems set up for 6 to 59m children

Table 33: Challenges in managing infants <6m		
Sub-theme	**Synopsis of feedback**	**Emerging policy implication/research question**
Links to other clinical services	• Initial assessment often done in other clinical areas outside of nutrition ward • Breastfed infant referred to paediatric ward rather than managed in nutrition ward in some programmes	• Local guidelines should emphasise smooth links between different clinical services • Need to emphasise in all child health training and practice that optimal nutrition is a cross cutting issue relevant to all
Community care	• Services were poor for moderately malnourished infants/those not sick enough to warrant immediate admission	• Develop community based models of care for infants <6m
SFP	• Whilst many guidelines specify SFP for pregnant and lactating women (and those whose infants have MAM), it is not often available	• Research and greater clarity re optimal care for mothers/MAM infants and ensure care is universally available if shows to be cost-effective
Non-admissions	• Often referred to paediatric ward or local primary healthcare services, but difficult to know what final outcomes are	• Better documentation and shared audit/clinical records between various child health services (perhaps greater use of patient-held health records)
Unsolicited donations	• No donations of breastmilk substitutes were noted in sample of key informants	• Ensure Operational Guidance on IFE implemented (include as a quantifiable Sphere standard)
Treating infants <6m as if older	• Some programmes report early introduction of complementary food (including RUTF) in exceptional cases where breastfeeding is not possible	• Optimal feeding for infants<6m who cannot be breastfed needs to be formally explored in clinical studies (ideally randomised controlled trials)
Reporting issues, Audit	• Records and databases were often poor quality, so any audit is difficult • Not all databases and reporting systems capture infants <6m • Infants with medical or structural causes of malnutrition (e.g. cleft palate) sometimes 'excluded' from reports	• Ensure high quality data systems (including staff to ensure they function well) • Ensure databases record infants <6m as a subgroup • Ensure all malnutrition is reported. Either qualitative additional report or extra column on database could identify numbers with complications likely to affect final outcomes (this would affect programme performance judged by Sphere standards)

Table 34: Training and support		
Sub-theme	**Synopsis of feedback**	**Emerging policy implication/research question**
Formal training	• Overall there is very little training in formal nutrition courses (MSc, diploma, other) on infants <6m	• Greater engagement with training institutions to add infant feeding material to course syllabus
Induction courses	• Sometimes limited in clinical content, infants <6m covered briefly if at all	• Induction could be longer (or where not possible in emergency could be replaced by early supervision visit) • 'Induction' pack could be given to all new feeding programme staff for self directed learning/reference. Would contain key manuals, books, instructional DVDs and other support material
Field visits by supervisor or other 'expert' (on-the job vs. workshop type training)	• On-the-job training and support found to be useful • Workshops can divert valuable staff away from field duties and are arguably not as effective as field-based training	• Close supervision and support of field programmes should be a priority (some guidelines have a programme 'checklist' – this could be initial basis of field assessment and support strategy) • More field support, less workshops
Critical thinking and reflective learning	• Needs to be more emphasis on critical thinking rather than blind 'guideline following'	• More field-based training around real scenarios and real patients
Useful materials	• WHO guidelines found useful • Posters and other visual materials found useful (especially when adapted for local situation)	• Ensure support materials are readily available to field programmes (e.g. via central library, online or via organizations such as TALC – Teaching Aids at Low Cost)

Table 35: Ways forward: Key informant feedback		
Sub-theme	**Synopsis of feedback**	**Emerging policy implication/research question**
Identification of infants <6m for admission to TFP/ SFP	• Better assessment tools and guidelines needed • More emphasis on active case finding and early identification of malnourished infants (this facilitates CMAM-style outpatient care by finding infants with uncomplicated SAM/at high risk of SAM) • Need to link more with other related clinical services (e.g. growth monitoring, post-natal services)	• Explore use of more detailed and wider ranging assessment framework: infant factors (better clinical, better anthropometric guidance needed), maternal factors and social/family factors • More direct community engagement on infant <6m malnutrition • Establish regular forum for information exchange/cooperation
Guidelines	• Need to move towards community-based models of care • More guidance needed in specific areas (e.g. which milk product, what to do for orphans, HIV issues) yet need to avoid 'guideline overload' by having too many different guidelines covering same topics • Need for simple and easy-to-follow guidelines (poster materials, flow charts) • Can be difficult to manage breastmilk substitutes and get the balance right between being available for those few who need them and ensuring no leakage/spillover to infants who do not need them	• Modify guidelines to be more consistent with CMAM 'uncomplicated/complicated' SAM • Strengthen guidelines in these areas. • Link more closely to existing initiatives such as IMCI, BFI, growth monitoring programmes and country-specific HIV guidelines • Emphasise 'support tools/materials' alongside guideline books • Clearer guidelines/stronger systems for managing those infants who cannot be breastfed and who need breastmilk substitutes
Links with other services	• Need to create more opportunities to link with related services which would both enhance treatment of established malnutrition and play a role in primary prevention of malnutrition	• Ensure coordination and dialogue between different programme coordinators at field level • Set common targets
Staff	• Motivation, training, prioritization of clinical workload are all important • Some staff overburdened with work/cannot realistically fulfil all current duties to a high standard	• Programme leadership, organization and management (including field supervision) should be given greater emphasis • Task shifting could lead to increased productivity/efficiency

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Box 6: Case history: Successful supplementary suckling in Liberia

Infant feeding in a TFP

MSc Thesis[a] by Mary Corbett, Concern, HQ Nutritionist

The benefits of breastfeeding are widely-know. In conditions characteristic of most emergencies breastfeeding becomes even more important for infant nutritional health and survival. However there are times when alternatives to breastmilk are necessary. It is important that they are used appropriately and do not replace breastmilk unnecessarily. Up until about 6 months breastfed infants' nutritional security is critically linked to the maternal supply of milk. This is why it is so important to protect that supply. However mothers and health workers' confidence in breastfeeding is often shaken when they see a malnourished infant attached to the breast. If there is a rush to rehabilitate the infant forgetting about the mother then there is a risk of discharging a healthy infant with no secure supply of 'food'. Mary Corbett as part of her MSc thesis carried out a study to assess the effectiveness of rehabilitating malnourished infants while maintaining or improving maternal milk supply.

This study was conducted in a therapeutic feeding centre run by Action Contre la Faim (ACF) in Liberia between mid May and mid July 1998. Twenty-five severely malnourished infants with weight for length less than 70% and less than 6 months of age were included in the study. A combination of breastmilk and supplemental milk was used to rehabilitate these infants using a special technique adapted for the study: -the "Supplemental Suckling" technique. This technique has been used previously in well babies.

On admission a detailed history was taken to ascertain the main reasons why the infants were not gaining weight. Routine medications were commenced as per protocols used for malnourished children over six months old. These included Vitamin A and a broad spectrum antibiotic.

The infant was started on three hourly breastfeeds. A supplemental feed was given after one hour following each breast feed. The tip of a naso-gastric tube was attached to the mother's breast at the nipple with the other end of the tube in the cup of supplemental milk (F100 diluted). The breast was offered to the infant. When the baby was attached to the breast it was important to ensure that the tip of the naso-gastric tube was in the infant's mouth. When the baby suckled at the breast the milk was sucked up the tube and then ingested by the infant. The amount given was calculated individually for each infant as per body weight (see below for calculations).

All supplemental milk consumed was recorded. Infants were weighed daily. Records were maintained of any vomiting or diarrhoea. It was assumed that the extra suckling at the breast would stimulate an increase in breastmilk output.

To estimate required caloric intake from breastmilk it was necessary to calculate energy needs for body maintenance, Basal Metabolic Rate (BMR), and expected weight gain for each infant. It was assumed that 110 kcal/kg were required for BMR but for infants with high fevers it was estimated that extra energy was required, increasing the BMR to 120 kcal instead of 110kcal. It was assumed that five calories were required for each gram of weight gained. The calories supplied by the supplemental milk (enough for maintenance) were established. It was assumed that the balance of calories taken was from breastmilk and would be used for catch-up growth. Finally deductions were made for any vomiting or diarrhoea. Once the infants reached 85% weight for height the supplemental milk was reduced by half the amount for one day and then stopped completely.

The infants remained in the centre for a minimum of 4 more days and were exclusively fed breastmilk.

Results

Of the 25 patients admitted one was excluded from the study as the mother was dead while three others were subsequently excluded due to insufficient data as they had been admitted late in the study. During the study a total of 16 infants were discharged exclusively breastfeeding and gaining weight while five were transferred to the local hospital.

With the combined supplemental milk and breastmilk the mean of all the infants maximum daily weight gain was 17.9g/kg/day. Normal weight gain for this age group would be 2g/kg/day while 5g/kg/day would be the minimum weight gain for catch up growth for malnourished infants with 10g/kg/day being the target to aim for. The mean weight gain for the period when the infants were receiving both supplemental feeding and breastfeeding was 14.7g/kg, while the mean weight gain for the period on exclusive breastfeeding was 9.4g/kg/day. This suggests that the weight gain although reduced on exclusive breastfeeding was still adequate for maintenance and catch-up growth. The mean breastmilk output on exclusive breastfeeding reached 204ml/kg (sd 31) with the volume ranging from 390ml to 1131mls but this considerable difference was due to differences in weights of the infants. The mean number of days on supplemental feeding was 13 days.

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a   Corbett M. Severe Malnutrition in the Infant less than 6 months: Use of Supplemental Suckling Technique. Department of Medicine & Therapeutics. Fosterhill, Aberdeen.

Box 6 cont'd

Tips

Supplemental Suckling Technique

- The cup is kept at least 20-30cms below the level of the baby's mouth so that the baby can control the flow of milk from the tube. If the presence of the tube is discouraging the baby from attaching: slip the tube into the mouth once the infant is suckling.

- Be patient: it may take one to two days for the mother and baby to adapt to this technique.

Calculating the amount of supplemental milk given

Calorie requirements for infants <6months:
For body maintenance without growth requirements = 110kcal/kg/day
For each additional gram of weight gain an extra 5kcals are required

Feed amount required:
Breast-milk or supplemental milk contains 70Kcals per 100mls approx.
Therefore amount of breastmilk/supplemental milk required =(110*100)/70 160mls/kg/day
Calculate enough supplemental-milk needed for body maintenance (BMR) to allow for situations where breast milk is extremely low.

Example of Supplemental-milk calculation:
Infants weight = 3.5 kg
Supplemental milk required = 160 x 3.5 = 560mls in 24hrs
Amount of Supplemental-milk per feed = 560mls ÷ 8 feeds = 70mls per feed

As the infant's weight increases the calorie requirements will increase but the supplemental feed will remain the same. The breast-milk produced will increase due to stimulation using the supplemental suckling technique. The infant will receive the calories needed to grow and catch up from the breastmilk.

Feeding Practices

- Mothers should offer breastfeeds to babies at least three hourly.

- Make sure that baby is attached correctly and mother is comfortable.

- Baby should empty one breast before the second is offered so that both the fore and hind milk is removed. (Emptying the breast stimulates the production of more milk thus improving breastmilk output.)

- Mothers should offer alternate breasts at the start of each feed. (This ensures both breasts are emptied at each alternative feed).

- Monitor breastfeeds encouraging and supporting mothers and checking the babies' position and attachment.

- Give first time mothers extra support to build up their confidence in their ability to breastfeed

Confidence building

- Explain the benefits of breastfeeding to the mother. Spend time with the mother encouraging and answering questions.

- Explain to the mother the principle of breastmilk quantity being determined by the demand/supply mechanism.

- Reassure mothers, informing them that most mothers in fact can produce adequate milk supply (more than 99%), even if underweight.

- Other mothers in the TFP using this supplemental suckling technique are of great support and encouragement to new admissions.

- Encourage women to talk about experiences.

- Regularly update mothers on their infant's progress in the programme.

- Ensure all health staff working in the centre are well informed of the principles and techniques of breastfeeding and supportive to the mothers. Regular training and support for staff is essential

Source: Corbett M 2000.[152]

Box 7: Case history: Using dedicated infant <6m data to support an innovative IYCF programme

Synergies between information & action: UNHCR Health Information System (HIS) & Infant and Young Child Feeding

HIS is a multi country reporting package which is currently being rolled out by UNHCR. The package consists of training materials; standardized data & tally sheets; a system of monthly data entry; standardized indicators and reporting / recording requirements; a central database at central HQ with data across 16 different countries. A key feature of this HIS tool is collecting age disaggregated data on infants <6m. This provides invaluable data because:

1) Infant <6m mortality is likely high, as is infant acute malnutrition prevalence (see MAMI Chapter 3). So monitoring is justifiable in public health terms.

2) Reducing infant mortality is a key part of making progress towards MDGs.

3) In terms of normal physiology, nutritional needs and common pathologies, there is large variation in the 0 to 59m age group. Therefore, grouped data can easily be confounded by age profile and is not nearly as informative as age-specific data.

4) Acute malnutrition prevalence will increase with new WHO-GS - with unknown effects on what both carers and health workers do in response , so now is more important than ever to keep on top of infant <6m admissions and outcomes.

5) BF status (whether EBF or not) will have the greatest impact for outcomes for <6m infants. Improving % EBF is itself very important, but in high mortality settings, it matters most in this youngest age group, and it is important to see whether BF promotion and support programmes are having this intended 'end effect'

6) In terms of nutrition, infants are managed very differently from older children in nutrition guidelines, so again, to assess the effect of this separate management you really need to disaggregate.

7) The age disaggregated database allows indirect audit of a groundbreaking programme improving infant and young child feeding through a multifaceted intervention. This CARE-USA led initiative includes community support groups; training health workers and community health volunteers. It provides the critical link between preventing acute infant malnutrition and a community-based support network to which malnourished infants <6m who need support but not necessarily admission can be referred:

Though there is large monthly variation, monitoring overall admission patterns of infants to therapeutic feeding gives some indication of the overall impact of the IYCF programme. Because numbers of infants are low, it can be particularly important and informative to audit individual cases and reflect on whether might have been prevented, or whether future treatments can be further improved.

Admissions to therapeutic feeding centres, Daddab camp, Kenya			
	Age Group		
	<6m	**6 to <60m**	**% <6m**
August – 07	6	34	17.6%
September – 07	1	5	20.0%
October – 07	8	52	15.4%
November – 07	1	25	4.0%
December – 07	8	32	25.0%
January – 08	3	24	12.5%
February – 08	4	79	5.1%
March – 08	1	17	5.9%
April – 08	0	14	0.0%
May – 08	0	17	0.0%
June – 08	4	15	26.7%
July – 08	1	14	7.1%
August – 08	0	6	0.0%
October – 08	0	19	0.0%
	37	353	10.5%

Source: UNHCR HIS data

6.4   Conclusions and recommendations

A large number of challenges and issues related to the management of infants <6m have been noted. All are consistent with issues noted in previous chapters of this report. The following are particularly important points:

There are aspects of current care which work well. These can be learnt from and replicated elsewhere. The 'breastfeeding corner' to aid pre-admission assessment is one such simple measure. Supplementary suckling has also been reported to work well in many settings. Agencies could consider including such examples as 'models for success' in programme planning.

There are some aspects of care which need to be improved and evolved in future guidelines. Often discussions can focus more on technical aspects, such as which therapeutic milk to use. Whilst still important, this did not come across as central in key informant interviews. Predominant issues included the need for development of guidelines on MAMI with specific components to address key issues (e.g. support for caregivers/ mothers, therapeutic milks, supplementary suckling, care for orphans and HIV) and for greater staff capacity and skills. On the job training, formal training, 'tools' and materials alongside guidelines and on the job supervision and support were all seen as important. Further research is needed to determine the efficacy of supplementary suckling, the best therapeutic milks to use and the efficacy of community-based models of care for infants <6m.

Key informants suggested guidelines for infants <6m move towards community-based models of care (CMAM), to bring consistency with the 'complicated'/'uncomplicated' approach, to improve active case finding and community follow-up. A shift in this direction may be timely given the increase in admissions likely as a result of the new WHO-GS. The availability and quality of community-based care for MAM cases in this age group also needs to be addressed.

No data or evidence were identified on the time and costs associated with providing skilled inpatient or outpatient breastfeeding support in inpatient or outpatient feeding programmes – documented experiences in topical areas like supplementary suckling have tended to focus on the technical aspects and challenges. It is critical that a move towards improving inputs to support infants <6m in inpatient care and developing outpatient support is informed by the costs and resource implications of such developments.

6.5   Summary findings and recommendations

Summary findings

Many therapeutic feeding programmes struggle in treating malnourished infants <6m.

Good examples of MAMI exist, such as the use of 'breastfeeding corners' to assess breastfeeding pre-admission and supplementary suckling. Experiences with supplementary suckling varied; staff time and experience were important limiting factors.

Information is lacking on community prevalence of malnutrition in infants <6m, as this group is not included in surveys. Not all programmes actively seek to identify malnutrition in this age group and admission criteria are often unclear.

Assessment of growth history of infants <6m is complicated by use of different indicators in the community vs for admission, and poor quality of anthropometric measurements.

Guidelines for MAMI are inconsistent and lack information on supporting mothers/ caregivers and on specific issues (e.g. supplementary suckling, therapeutic milks, orphans and HIV).

Managing orphans and non-breastfed infants was identified as a major challenge, both in treatment and longer term follow-up.

There is a lack of staff capacity and skills to support breastfeeding and an absence of formal MAMI training and staff induction.

Links to other clinical services are often not smooth.

Community-based care for infants <6m and mothers with MAM, for non-admitted infants <6m and discharged infants <6m are generally lacking.

Summary recommendations

The identification of infants <6m for admission must be improved. Technical guidance for the inclusion of infants <6m in nutritional surveys is needed. Better assessment tools for the mother-child pair are also needed. Guidance and better equipment will enable anthropometric assessment of infants <6m e.g. better weighing scales. Growth monitoring tools could be harmonised with entry criteria to feeding programmes.

Strategies with potential to improve SAM assessment and management in infants <6m include 'breastfeeding corners'/ separate mother and baby areas where skilled breastfeeding support is available and peer-to-peer support is facilitated.

Guidelines for MAMI must be improved that include guidance on specific 'problem' areas and make links with relevant initiatives.

MAMI training should be integrated into formal courses and 'on the job' training and support provided to field staff with simple tools and materials.

Further research is needed to determine the efficacy of supplementary suckling, the best therapeutic milks to use, and the efficacy of community-based models of care for infants <6m.

The cost and resource implications of interventions should be included as a key element of investigations into expanded models of inpatient and outpatient care.

Endnotes

147 http://www.humanitarianreform.org/humanitarianreform/Default.aspx?tabid=74
148 http://www.ucl.ac.uk/cihd/research/nutrition/mami
149 http://www.ennonline.net/research/mami.aspx
150 Child 2015 is an independent forum to stimulate debate and propose pragmatic solutions for improving child healthcare worldwide http://www.dgroups.org/groups/ child2015/
151 Pronut Nutrition and HIV/AIDS (ProNut-HIV) is an electronic forum which aims to share up-to-date information, knowledge and experiences on nutrition and HIV/AIDS. http://www.pronutrition.org/discgroups-hiv.php
152 Mary Corbett (2000). Infant feeding in a TFP. Field Exchange, 9, p7. http://fex.ennonline.net/9/tfp.aspx