

An inter-agency collaboration concerned with the protection and support of safe and appropriate infant and young child feeding in emergencies

Complementary Feeding of Infants and Young Children in Emergencies

Evaluating the Specific Requirements for Realising a Dedicated Complementary Feeding in Emergencies Training Resource (Module 3); a Preliminary Scoping Review of Current Resources (Phase I)

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This review was carried out by Yasmin Hosny, Research Consultant, for the Emergency Nutrition Network (ENN), representing the IFE Core Group. This work was funded by the IASC Global Nutrition Cluster as part of a package of activities to build IFE capacity in humanitarian response.

IFE Core Group

The IFE Core Group is an interagency collaboration of UN agencies and NGOs concerned with policy guidance and capacity building on IFE, with particular focus on infants and children under 2 years and their caregivers. Current members are UNHCR, WHO, UNICEF, WFP, IBFAN-GIFA, CARE USA, ACF, SC US, SC UK, and the Emergency Nutrition Network (ENN), co-ordinated by the ENN. Fondation Terre des hommes is an associate member.

Since early 2007, the ENN/IFE Core Group members and collaborators have undertaken a variety of IFE activities funded by the Inter Agency Standing Committee (IASC) Nutrition Cluster to integrate and mainstream IFE in emergency programming and to build capacity in this sector. This review is part of this scope of work. For more information and resources, please visit www.enonline.net/ife

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Executive Summary

Protecting, promoting and supporting the nutritional status of vulnerable groups affected by emergencies is a critical concern and humanitarian right of these groups, and given the devastating impacts of malnutrition, should be a vital consideration in any emergency relief response. Infants and children are some of the most vulnerable victims of natural and human-induced emergencies. The acute nature of emergency situations challenges optimal feeding practices, may increase the likelihood of not breastfeeding, as well as the risks of artificial feeding and inappropriate complementary feeding (CF), with potentially devastating short and long term implications on malnutrition, illness and mortality.

Even with well documented impacts of inappropriate feeding practices and evidence-based recommendations for an optimal feeding pattern, infants and young children are fed in a variety of ways due to complex political, psycho-social, cultural, economic, and commercial influences and interactions. There is thus a limit to what extent feeding practices can be influenced by public health, but humanitarian relief in emergencies is a critical opportunity for intervention and optimisation. Emergencies often involve population displacement and the collapse of health and social infrastructures, leading to food and fuel insecurity and lack of clean water and sanitation. Enabling basic activities for survival can be challenging for the humanitarian community, and these challenges will only be greater for pregnant women, mothers and caregivers. The heightened vulnerability of children in emergencies, and the narrow 'window of opportunity' to intervene, increases the need for timely and appropriate interventions to protect, promote and fulfil their rights to the highest attainable standard of health and development.

The gap in comprehensive training content for addressing the challenges of complementary feeding in emergencies (CFE) has been a longstanding concern. ***This scoping review has therefore been commissioned by the IFE Core Group to evaluate existing guidance, training materials and resources related to CFE to help determine what is now required to fill the 'gap' in training content, the associated implications for developing a specific CFE training resource (CFE module), as well as the requirements for its realisation.***

The nutritional principles governing infant and young child feeding are the same in an emergency as for any other situation. However, the complexities of CF combined with the unpredictability and intricacies of emergencies, results in additional challenges for fully addressing CFE in resources and capacity. Moreover, some terms used in CF and CFE still remain undefined, with particular issues of what constitutes foods used in CF and how to clarify and interpret terms within different contexts; it is this lack of consensus that further contributes to the challenges of developing pragmatic guidance. There is no single comprehensive and universally accepted definition of complementary foods in the literature, and the now deemed obsolete term 'weaning

foods' still in frequent use. A new working definition for complementary foods and conceptual framework is therefore proposed by this review for consideration, discussion, and further development.

Taking such challenges into consideration, it is clear from this review that there is a wealth of good quality information currently in existence which can be updated and optimised, and it is perhaps the lack of consolidation of this information that is aggravating the gap in guidance. Although the guidance gap will inevitably reflect advances in knowledge, lack of resolution and new issues for consideration since publication, the potential for serious adverse short and long-term implications for infants and young children is great. It is therefore critical that there is a centralised CFE guidance resource which addresses all these factors fully and takes advantage of new knowledge. ***Essentially, the strategies needed to fully meet CFE requirements need to be balanced with the challenges of defining such requirements.***

For such a CFE resource to be effective, it will need to have global application, recognise contextual and cultural differences, and fully equip caregivers, staff, and agencies to practically implement CFE guidance in the field. Equally important, guidance must use a lifecycle approach, view mother and child as an intimate unit, account for psycho-social and economic impacts, consider potential long-term implications that a response may have on CF practices, and be acutely aware that infants and young children are highly vulnerable not only to malnutrition, but to the marketing forces which undermine optimal feeding practices. Such CFE guidance and training will make a significant contribution towards fulfilling the practical, nutritional, and functional prerequisites for optimal CF and CFE.

Infant and young child feeding in emergencies (IFE) is a complex and constantly evolving issue, and the longstanding concerns surrounding CF are only escalated further by the demands of CFE. It is clear that a CFE module is now needed; training which should form part of a much wider intervention approach, and thus its position within the existing array of resources and conceptual and management frameworks for IFE will need to be carefully considered. The implications of the current gaps in CFE guidance on the governance of a CFE module will necessitate the engagement of operational agencies in the development and dissemination of specific CFE guidance to address the gaps first, followed by the development of the module to support the practical implementation of that guidance.

Extreme situations may necessitate extreme behaviours, and the ultimate challenge will be how to translate and operationalise the evidence base into pragmatic CFE guidance which can flexibly accommodate the context-specific and volatile nature of emergencies; the appropriateness, pragmatism, and accessibility of the module will determine its ultimate value in an emergency. ***The diverse nature and impact of emergencies and the complex interaction of influences on feeding practices***

ultimately necessitates a non-prescriptive approach to CFE by all parties concerned; an approach that not only enables and empowers mothers and caregivers to feed and care for their children, but in any practice or intervention, has the interests of the child as the highest consideration.

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1. Introduction

“Interrupted breastfeeding and inappropriate complementary feeding heighten the risk of malnutrition, illness and mortality..... For the vast majority of infants emphasis should be on protecting, promoting and supporting breastfeeding and ensuring timely, safe and appropriate complementary feeding”¹

Protecting, supporting, and promoting the nutritional status of vulnerable groups affected by emergencies is a critical concern and humanitarian right of these groups, and given the devastating impacts of malnutrition, should be a vital consideration in any emergency relief response. Infants and children are some of the most vulnerable victims of natural and human-induced emergencies, with interruptions to breastfeeding and inappropriate complementary feeding (CF) increasing their risk of malnutrition, illness and mortality². The severity of impact will depend on a number of factors, including the prevailing health and nutritional status, pre-emergency infant feeding practices, available resources, and the effectiveness and appropriateness of the humanitarian response. Recent estimations of the global burden of malnutrition on infant and child mortality have been instrumental in bringing malnutrition to the fore of the public health agenda; it is the leading single cause of child death under 5 years, with 3.4 million children dying each year from malnutrition-related causes³. Most of these deaths occur during the first year of life and are most often associated with inappropriate feeding practices; late initiation of breastfeeding, a lack of exclusive breastfeeding and inappropriate CF. Even with well documented impacts of inappropriate feeding practices and evidence-based recommendations for an optimal feeding pattern, the complexities of feeding behaviours are intimate reflections of a wider belief system influencing what, when, where and how people feed their children⁴. ***As such, improving breastfeeding and CF requires a multidimensional approach, understanding the key determinants and influences on optimal feeding practices on a national, regional, and individual scale; essentially understanding the powerful political, psycho-social, cultural, economic, and commercial forces at play.***

Significant advances have been made in defining standards and indicators for appropriate infant and child feeding practices, but despite a wealth of knowledge, there still remains a ‘gap’ in translating this into detailed pragmatic guidance for complementary feeding in emergencies (CFE). In contrast to breastfeeding, appropriate CF has been more difficult to define in precise operational terms, and as such has not made the same progress in translating the evidence base into pragmatic recommendations⁵. Indeed until recently, in the absence of appropriate CF indicators, measurements of infant and young child feeding practices at the population level have predominantly focused on breastfeeding practices⁶. In effect only providing information about whether complementary foods were being consumed, not the quantity or quality of those foods⁷. In response to concerns regarding the lack of adequate indicators, the WHO began a process to review and

develop indicators for CF practices in 2002 and this process has recently culminated in the 2008 publication of a revised set of indicators to reflect dietary quality and quantity⁸. However, the aforementioned complexities of feeding behaviours and data constraints mean that some aspects of CF are more difficult to capture and accurately assess, and work is still in progress to develop valid and reliable indicators and measurements for these⁹.

Moreover, some terms used in CF and CFE still remain undefined, with particular issues being what constitutes foods used in CF and how to clarify and interpret terms within different contexts; it is such lack of consensus that further contributes to the challenges of developing pragmatic guidance. There is no single comprehensive and universally accepted definition of complementary foods in the literature, and the now deemed obsolete term 'weaning foods' is still in frequent use. Further, there are no internationally agreed definitions even for such basic terms as 'indigenous foods', 'traditional foods', 'local foods', 'local diet', 'locally available', and 'locally produced'¹⁰.

This inequity between the progress of breastfeeding and CF is of great public health concern, given that the critical window for improving child nutrition is from pregnancy through the first 2 years of life, a time when *both* breastfeeding and CF are instrumental in determining health outcomes. In fact, breastfeeding and CF are ranked in the top 3 life-saving interventions for children under 5 years, preventing 13% (1st) and 6% (3rd) of deaths respectively¹¹ (table 1); significant and positive impacts which will be amplified in emergency situations.

Table 1 Top 10 interventions for preventing death in children under 5 years¹²

Preventative interventions	Proportion of under 5 years deaths prevented
Breastfeeding (exclusive for 6 months and continued to 12 months)	13%
Insecticide treated materials	7%
Complementary feeding (CF)	6%
Zinc	5%
Clean delivery	4%
Hib vaccine	4%
Water, sanitation, hygiene	3%
Antenatal steroids	3%
Newborn temperature management	2%

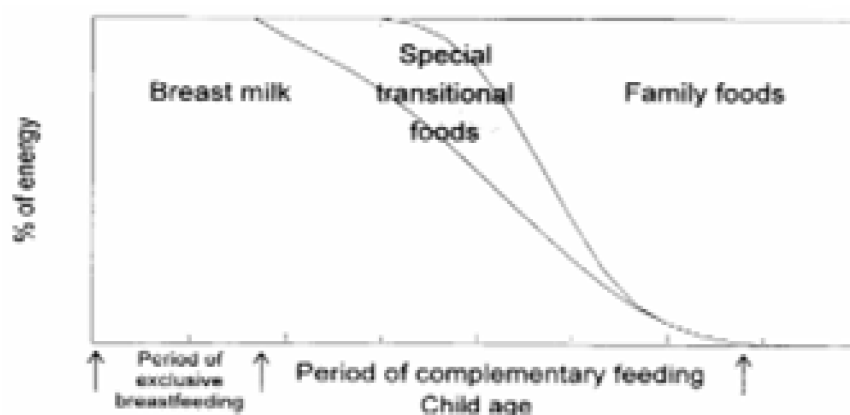
The CF period (6 months to 2 years) is well recognised as a particularly vulnerable period for the development of acute malnutrition. The aforementioned devastating contribution malnutrition makes to infant and child mortality is only exacerbated in an emergency, which when combined with the lack of practical CFE guidance, makes a compelling case for urgent review. ***This scoping review has therefore been commissioned by the IFE Core Group¹³ to evaluate existing guidance, training materials and resources related to CFE to help determine what is now required to fill the ‘gap’ in detailed guidance, the associated implications for developing a specific CFE training resource (CFE module), as well as the requirements for its realisation.***

1.1 Optimal Feeding Practices in Emergencies

Optimal infant and young child feeding practices during emergencies are essentially the same as those that apply in more stable conditions; infants should be exclusively breastfed for the first 6 months of life to achieve optimal growth, development and health, and thereafter, they should receive nutritionally adequate and safe complementary foods while breastfeeding continues up to 2 years or beyond¹⁴. The unparalleled nutritional, physiological and psychological benefits of breastfeeding to the mother, child, and family as a whole are well documented, and drive the global effort to protect, promote and support breastfeeding. While these advantages are important in all environments, the combination of food insecurity, lack of safe water, and unsanitary conditions which often characterise emergencies heightens the importance of breastfeeding, especially for children who may already be sick or malnourished.

Breastmilk can make a significant qualitative and quantitative contribution to the diet, as demonstrated in figure 1, and in some circumstances may well be a child’s only safe and sustainable quality source of food¹⁵. Whilst the benefits of breastfeeding are recognised, there are of course those children who are not breastfed or cannot be breastfed (due to conditions affecting the child or mother), and who will constitute a higher risk group in an emergency¹⁶. Acceptable medical reasons for using breastmilk substitutes (BMS) only affect a small number of mothers and their children, their use may be transient or permanent, and may require that a mother should not breastfeed temporarily or permanently¹⁷.

Figure 1 Graph demonstrating the significant contribution of breastmilk to the energy intake of children during CF¹⁸ (NB: ‘special transitional foods’ denotes foods used in CF)



However there are some health conditions, which although concerning, are not medical indications for using BMS; breast abscess, Hepatitis B and C, mastitis, tuberculosis, and harmful substance use¹⁹. With regards to the latter, for mothers who choose not to stop using such substances (or are unable to do so) it is recommended they seek advice on the risks and benefits of breastfeeding depending on their individual circumstances. An outline of relevant health conditions which may indicate the use of BMS are given in table 2 below; in any consideration to stop breastfeeding, the benefits of breastfeeding should be weighed against the risks posed by the presence of the specific conditions listed²⁰.

Table 2 Outline of acceptable medical reasons for the use of BMS²¹

Conditions affecting Infants	Conditions affecting Mothers
<p><i>Indications for no breastmilk or any other milk except specialised formula</i></p> <ul style="list-style-type: none"> • Classic galactosemia • Maple syrup urine disease • Phenylketonuria (some breastfeeding is possible under careful monitoring) 	<p><i>Indications that may justify permanent avoidance of breastfeeding</i></p> <ul style="list-style-type: none"> • HIV infection¹ (if replacement feeding is acceptable, feasible, affordable, sustainable and safe (AFASS))
<p><i>Indications where breastmilk remains the best feeding option, but additional food may be required for a limited period</i></p> <ul style="list-style-type: none"> • Very low birth weight (<1500g) • Very pre-term (<32 weeks) • At risk of hypoglycaemia 	<p><i>Indications that may justify temporary avoidance of breastfeeding</i></p> <ul style="list-style-type: none"> • Severe illness e.g. Sepsis • Herpes simplex virus (HSV-1) • Maternal medication

As stated, breastfeeding and CF are in the top three life-saving interventions for children under 5 years of age. However, despite the benefits of such interventions being even greater in an emergency situation, the challenges of ensuring optimal breastfeeding and CF may, in that context, be even greater. The acute nature of emergency situations challenges optimal feeding practices, may increase the likelihood of not breastfeeding, as well as the risks of artificial feeding and inappropriate CF²², with potentially devastating short and long term implications on malnutrition, illness and mortality. One of the most dangerous deviations from optimal feeding practices is the premature cessation of breastfeeding, and being a function of age, the younger the infants the more vulnerable they will be. This can occur for a number of reasons such as emotional stress, illness, death of or separation from the mother, established premature weaning practices, or in response to the uncontrolled distribution of BMS.

The contextual setting is highly influential on what the key determinants will be on feeding practices. In areas where malnutrition is greatest, cultural practices, mothers having to go out to work, and poor quality complementary foods, will be the most significant factors undermining optimal feeding practices. Sub-optimal feeding practices are common, and in an emergency such prevailing practices will only increase the challenges to achieving optimal feeding practices. Even in non-emergency settings, sub-optimal breastfeeding practices are responsible for 1.4 million child deaths and 10% of the burden of disease in the under fives in developing countries²³. Other risky practices include not breastfeeding; delayed initiation of breastfeeding (should start within 1 hour of birth and would save 22% of all neonatal deaths²⁴); non-exclusive breastfeeding in infants under 6 months; mixed feeding in infants under 6 months (i.e. when mothers both breastfeed and give BMS and/or other foods); and poor implementation of all the elements of CF (encompasses breastfeeding, complementary foods, and responsive feeding). As well as increasing risk of illnesses like diarrhoea, mixed feeding before 6 months increases the risk of HIV transmission in infants of HIV-infected mothers^{25,26,27}.

Infants and young children are fed in a variety of ways, and feeding practices are the result of complex political, psycho-social, cultural, economic, and commercial influences and interactions. The resulting practice may or may not involve breastfeeding, let alone the recommendation for exclusive breastfeeding for the first 6 months of life or continued breastfeeding for 2 years or beyond. Likewise, there is a spectrum of foods that are used in CF, ranging from locally-derived foods to industrially developed commercial and therapeutic foods.

1.2 Complementary Feeding (CF)

The impact of feeding practices on nutritional status, growth, development, and health outcomes of infants and young children are well documented. The critical window for improving child nutrition is from pregnancy through the first 2 years of life, a period when the transition is made to CF. ***CF is the process of giving other foods and liquids in addition to breastmilk (or an appropriate BMS in non-breastfed infants), when these alone are no longer sufficient to meet the nutritional needs of infants and young children. In breastfed infants, the objective of CF is to complement ongoing breastfeeding, neither displacing nor replacing breastmilk. CF typically covers the period from 6 months to 2 years of age, and due to the potential for inappropriate feeding practices and risk of malnutrition, this is a very vulnerable period for infants and young children.***

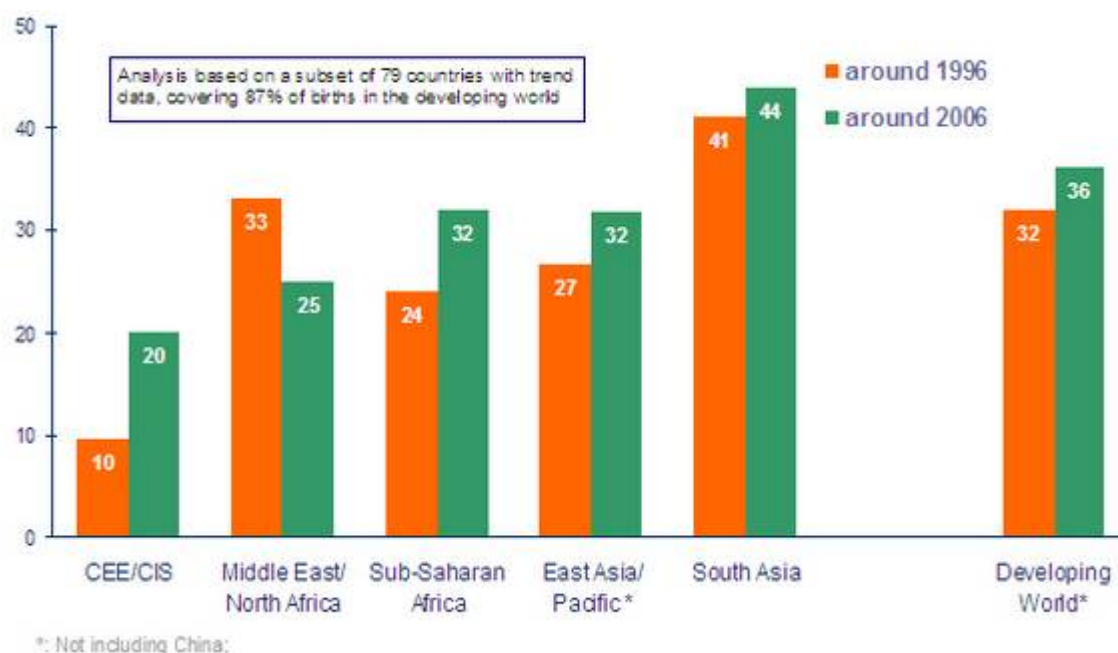
Appropriate CF is essential for achieving the health, growth, and development potential of young children, but some CF practices put infants and young children at increased risk. Inappropriate CF practices include late initiation of breastfeeding, a lack of exclusive breastfeeding in the first 6 months, CF starting too early or too late with foods that are often nutritionally inadequate and unsafe²⁸, and discontinued breastfeeding. In terms of intervention, influencing appropriate feeding practices is as critical as influencing the availability and use of adequate foods²⁹; a complex activity being subject to political, psycho-social, cultural, economic, and commercial forces. The adverse impacts of some inappropriate CF practices demonstrated at the population level are given in table 3.

Table 3 Impacts of inappropriate CF practices at the population level

Inappropriate CF Practice	Adverse Impact
Early introduction of complementary foods and liquids (before 6 months of age)	Increases the risk of illness in babies; displaces breastmilk, adversely alters the intestinal environment, and introduces a possible source of infection
Delayed introduction of complementary foods(after 6 months of age)	Can cause growth retardation, nutrient deficiencies (particularly iron) and thereby an increased vulnerability to infection and death (mortality)
Inadequate amount or low nutrient density of complementary foods	Can cause growth retardation, nutrient deficiencies (particularly iron) and thereby an increased vulnerability to infection and death (mortality)
Complementary foods displace breastmilk inappropriately	Increases risk of nutrient deficiencies and infection and mortality
No breastfeeding	Infants and young children are especially at risk during the CF period, as all their energy and nutrient needs must be met through other foods and fluids, increased morbidity and mortality

Fundamental to the principles of CF is recognition of the nutritional utility of breastmilk and the health protection afforded to both mother and child of continued breastfeeding. Continued breastfeeding is a neglected aspect of infant and young child feeding³⁰, and while exclusive breastfeeding rates have risen between 1996 and 2006 (see Figure 2), global levels of continued breastfeeding demonstrate a fall between 1 and 2 years of age in the proportion of children still breastfeeding; 76% at 1 year declining to 50% at 2 years³¹.

Figure 2 Percentage of infants (0–5 months) exclusively breastfed by region³²
 (NB: Latin America and Caribbean were excluded from the analysis due to insufficient data)



Therefore the practical application of CF involves maintaining existing positive breastfeeding behaviour, as much as introducing complementary nutritious foods. How to complement continued breastfeeding is a challenge, as providing too much food can reduce children's desire to breastfeed, such that foods displace breastmilk intake rather than complement it³³. **Thus, during the CF period, a caregiver needs to be enabled to feed their child appropriately by implementing the Guiding Principles for CF of the breastfed/non-breastfed child^{34,35}.** The Guiding Principles are a comprehensive evidence-based set of guidelines intended to guide policy and programmatic action at global, national, and community levels, and are designed to be adapted to local feeding practices and conditions. The Guiding Principles acknowledge that more research is needed to improve the evidence base, as well as to provide information on how to translate this knowledge into effective policies and practices in different settings which are understood by healthcare providers, mothers, and caregivers. An outline of the principles for feeding breastfed children is given in Box 1.

An interpretation of the Guiding Principles used for training purposes to describe some of the key characteristics of CF is the acronym FATVAH; feeding a child frequently (Frequency), with adequate amounts (Amount) of food of appropriate consistency (Texture) using a variety of different foods (Variety) and in a way that enables responsive feeding (Active) of meals that are hygienically prepared (Hygiene) (FATVAH)³⁶. Although somewhat of an oversimplification of the Guiding Principles, by addressing some of the key considerations and their application at the practical level it is a useful training tool.

Box 1: Outline of “Guiding Principles for complementary feeding of the breastfed child”³⁷

1. Duration of exclusive breastfeeding and age of introduction of complementary foods
2. Maintenance of breastfeeding
3. Responsive feeding
4. Safe preparation and storage of complementary foods
5. Amount of complementary food
6. Consistency of complementary food
7. Meal frequency and energy density
8. Nutrient content of complementary food
9. Use of vitamin-mineral supplements or fortified products for infant and mother
10. Feeding during and after illness

Note: The specific considerations and requirements for CF of non-breastfed children are given in “Guiding principles for feeding of non-breastfed children 6-24 months of age”³⁸.

1.3 Complementary Feeding in Emergencies (CFE)

“Children have the right to adequate nutrition and access to safe and nutritious food, and both are essential for fulfilling their right to the highest attainable standard of health”³⁹

The nutritional principles governing infant and young child feeding will be the same in an emergency as for any other situation, however the increased burdens placed on populations and the unique challenges of emergencies may necessitate more flexible and innovative approaches. An emergency can be defined in a number of ways, but put simply it is an extraordinary, urgent or sudden situation that puts the health and survival of a population at risk. Recent emergencies in Bangladesh, China, Gaza, Georgia, Haiti, India, Mozambique, Myanmar, Peru, USA, and Indonesia demonstrate emergencies can affect any country, regardless of location or development status. An emergency creates chaos and unpredictability in contexts that may previously have been well resourced and stable, or hit high burden areas already chaotic and depleted in terms of capacity and resources.

Emergencies often involve population displacement and the collapse of health and social infrastructures, leading to food and fuel insecurity and lack of clean water and sanitation. Carrying out basic activities for survival can be challenging, challenges which will only be intensified for pregnant women and caregivers. Emergencies may differ in temporal, causal, and geographical factors, as well as the nature of associated complexities, but the potential for detrimental physical, psychological, and social impacts in affected populations is clear.

As stated, the critical window for improving child nutrition is from pregnancy through the first 2 years of life, as any deficits acquired by this age are difficult to reverse later. Thus children being born into or living in emergency situations require special attention to ensure their optimal health, with the health of the mother being an instrumental and inseparable determinant. The risk of acute malnutrition during the CF period and the increased risk to non-breastfed children are especially apparent in emergency situations, where the vulnerabilities of children are exposed; for example, in a large-scale therapeutic feeding programme in Niger in 2005, 95% of the 43,529 malnourished cases admitted for therapeutic care were children under 2 years⁴⁰.

To help avert such devastating impacts in emergencies, caregivers will need access to adequate amounts of nutritious, appropriate and safe complementary foods. And while there is no reason for CF to start earlier in emergencies, there may be situations where it is preferable to delay it for slightly longer than 6 months; for example if sanitation is extremely poor and/or there are no quality foods immediately available to meet the most acute nutrient requirements for iron and zinc. To help meet these requirements, international guidance on micronutrient supplementation of mothers, infants and young children in emergencies should be followed⁴¹ and the common practice of early clamping of the umbilical cord should be prevented to enable a significant transfer of blood (and therefore iron) to the baby⁴². Further, the prevailing nutritional status of the population prior to the emergency will present specific challenges and have some bearing on the most appropriate response; for example, in chronically undernourished populations where the micronutrient status of mothers may be poor and infants are more likely not to be exclusively breastfed (due to recurrent illness).

In terms of the practical response to such challenges, the appropriate CF interventions would be to support the nutritional status of the mother, support breastfeeding (encouraging optimal breastmilk intake for the CF period), and introduce energy and nutrient dense foods for CF in amounts that do not undermine breastfeeding. This would necessitate food and nutrition agencies ensuring that nutritious and appropriate CF options are always included as standard in food rations and in cases where the general food ration is lacking in quality, targeted interventions to provide culturally acceptable micronutrient-rich (fortified) complementary food to children 6 months to 2 years of age will be required. This is quite a challenge, and in any CF intervention, it is imperative to also support and reinforce the caregiver's central role in feeding and caring for their children.

Obviously the concepts of CF and CFE do not just concern food, but encompass a much wider array of interrelated feeding practices and caring behaviours that are instrumental in child development. The challenges posed by emergency situations will make caring for and feeding children harder, and it is therefore crucial to have effective practical guidance for carers, practitioners, and agencies in the field to not only ensure that the nutrition components of CF are met, but help promote, support, and sustain the social and psychosocial elements which may be very much undermined during emergency conditions. As such, a number of interventions across sectors may be needed to fully meet CF requirements in an emergency;

- *Counselling and advice to support appropriate CF practices*
- *Advice on complementary food preparation (especially for unfamiliar foods)*
- *Supporting maternal nutrition*
- *Support for continued breastfeeding during the 6 months to 2 years period*
- *Ensuring food rations distributed to emergency affected populations always include provision for (culturally) appropriate complementary foods*
- *Use of fortified foods e.g. fortified blended foods, 'point of use' fortificants, and micronutrient powders*
- *Micronutrient supplementation*
- *Resources, such as fuel and cooking equipment*
- *Voucher and complementary foods distribution schemes*
- *Education to ensure that meals are prepared hygienically and to an adequate nutrient and energy density (i.e. not too dilute)*
- *Supplying tools and seeds to enable cultivation of suitable complementary foods*
- *Strengthening links between livestock and nutrition programming to enhance food quality available to children*

A variety of fortified foods and supplements have been used in vulnerable populations, including children of CF age, and include fortified blended foods (such as corn soya blend), 'point of use' fortificants that are added to the diet to improve nutrient quality (such as lipid-based nutrient supplements (LNS); see box 2 for an overview), micronutrient powders, and micronutrient 'plus plus' products which contain micronutrients with added protein/energy/essential fatty acids⁴³. However, there are currently no standard criteria for using such fortified foods and supplements in children of CF age, and there are important implications of their use to consider; cost, target age-group, time period for use, and perhaps most pertinently, how to support the transition to 'normal' complementary foods after their use.

Box 2: Overview of lipid-based nutrient supplements (LNS)

LNS are a family of ready-to-use food products with high energy and nutrient content. Lipids are the main source of energy. Products range from those providing minimal energy (kcal) to those supplying a substantial proportion of energy; all provide multiple micronutrients and essential fatty acids, as well as macronutrients. Those products that provide minimal energy may be used in small amounts as a fortificant of the local diet at the point of use, for prevention of malnutrition. Those that provide very substantial energy are suitable as a temporary replacement of the local diet, for treatment of severe acute malnutrition⁴⁴.

In terms of the aforementioned LNS, these are a broad range of fortified lipid-based products, which although based on similar ingredients, contain different concentrations of micronutrients; ranging from low micronutrient concentration products like Ready-to-Use-Therapeutic Foods (RUTF) to highly concentrated supplements for “point-of-use” fortification⁴⁵. RUTF are increasingly being used in emergency contexts, having successfully been used for the management of severe acute malnutrition (SAM) in children, and there is now a current trend towards expanding their use in line with international consensus and guidance⁴⁶.

There is also interest in using LNS in emergency settings not just for the treatment of SAM, but for prevention of malnutrition by ensuring a more nutritionally-adequate ration for the most vulnerable groups, including children of CF age⁴⁷. This concern for the adequacy of emergency rations has meant various types of LNS have been used to treat children with moderate acute malnutrition (MAM), including RUTF in HIV positive children, and work is currently in progress to evaluate proposals to incorporate LNS in food rations distributed as part of the emergency response⁴⁸.

Though international guidance on appropriate products for the management of MAM is not yet clear, work is underway to investigate more appropriate alternatives such as Ready to Use Supplementary Foods (RUSF) and other LNS; this has allowed RUTF to be clearly defined as a therapeutic food for SAM. In practice, a number of initiatives will be required to ensure the quality of a programme to manage SAM using RUTF is maintained and that such a product is not misused; namely appropriate targeting, community education in the use of the product as a therapeutic treatment, and careful monitoring of treatment efficacy. Similarly, active caution and care should be exercised in the growing interest and wider use of LNS for prevention of both acute malnutrition⁴⁹ and stunting⁵⁰.

1.4 The Code and Use of Fortified Foods in CFE

“...when mothers do not breast-feed, or only do so partially, there is a legitimate market for infant formula and for suitable ingredients from which to prepare it; that all these products should accordingly be made accessible to those who need them through commercial or non-commercial distribution systems; and that they should not be marketed or distributed in ways that may interfere with the protection and promotion of breast-feeding”⁵¹

The International Code of marketing of Breastmilk Substitutes and subsequent relevant World Health Assembly (WHA) Resolutions (collectively known as *the Code*) is a key consideration in CF and emergency contexts. *The Code* is intended to protect against any activity which undermines breastfeeding and is a minimum requirement in all countries. ***For the purpose of the Code, BMS are any foods which are marketed or otherwise represented as total or partial replacements for breastmilk, whether or not suitable and with or without modification for that purpose. This means that any food targeted to infants less than 6 months of age constitutes a BMS; any actions to market or otherwise represent a food as a BMS to children aged 6 months to 2 years or beyond will also fall under the jurisdiction of the Code.***

It is important to clarify that since CF includes continued breastfeeding, the concept of CF does not undermine breastfeeding. However, the manner in which complementary foods are represented or introduced could. Bottle-fed complementary foods marketed for children up to 2 years, and complementary foods, juices, and teas marketed for infants less than 6 months are just two examples of commercial complementary foods that are BMS, and by employing such marketing practices the companies involved are violating *the Code*⁵².

In an emergency situation, a basic intervention to protect, promote and support optimal feeding practices is to ensure that the nutritional needs of the general population are met, in particular to ensure access to commodities suitable as complementary foods⁵³. As described earlier, effective approaches to improve the quality of the diet of children include; (a) increasing dietary diversity using locally available nutritious foods, in particular animal-source foods where feasible; (b) ‘point-of-use’ fortification with LNS or enrichment of the local diet with micronutrient supplements; and (c) the use of appropriately fortified food products⁵⁴. As defined above, depending on how any commodities are represented or marketed, they may be regarded as a BMS for the purpose of *the Code*, and so fall within its jurisdiction. For example, if a Ready to Use Supplementary Food (a type of LNS) is used as a complement to breastfeeding in a moderately malnourished child over 6 months of age, it is not considered a BMS for *the Code* purposes. However if, as another example, RUTF is used as a replacement feed for an HIV-exposed infant over 6 months of age, it is considered a BMS for the purpose of *the Code*.

Thus, to ensure the provisions of the Code are upheld, it is important that any commodities are represented for the suitable age group, with appropriate information and support for continued breastfeeding throughout the CF period, and with attention to established guidance, management, and provisions for their correct use.

2. The challenge

Essentially and in principle, any optimal feeding strategy should maximize the utilization of locally produced foods in any given setting, and consider the promotion of additional products only if they can fill a critical gap in nutrients in an acceptable, feasible, affordable, sustainable and safe (AFASS) way, as a complement to continued breastfeeding and the local diet, not as a replacement⁵⁵.

However there are constraints and challenges to realising such a strategy in an emergency context. Clarification of what constitutes 'AFASS' conditions and how to assess them in the context of an emergency response is greatly needed; arguably many emergency interventions are not 'sustainable' due to intensive external resourcing, but are justified as a short-term intervention to save lives. Given the vulnerability of infants and young children and the narrow window of opportunity to intervene, such arguments lend weight to supporting rapid CFE responses. However given the complexities of CFE already outlined, limiting the response to any one type of intervention (e.g. product delivery) will fall short of meeting comprehensive CFE needs. Any intervention will need to consider resource and capacity implications, and further may also need to;

- Differentiate between shorter term CF responses for acute emergencies, and longer term responses for chronic situations
- Define entry and exit criteria for 'additional product' use
- Identify where any synergies can be developed between acute and longer term approaches

The challenges of complementary feeding and the impact of inappropriate feeding practices - are heightened in emergency contexts. It is therefore crucial to have effective practical guidance for carers, practitioners, and agencies in the field to promote, support, and sustain optimal breastfeeding and CF practices in emergencies.

3. What is the Gap in CFE Resources?

“The international system... provides much normative guidance on nutrition policy, but some of it is expressed in abstract language that does not easily translate into implementation”⁵⁶

How to protect, promote and support infant and young child feeding in emergencies (IFE) is the subject of an array of documentation, from global declarations and conventions, strategies and policies, to operational guidance and training. As stated, despite a wealth of knowledge on appropriate IYCF practices there still remains a critical ‘gap’ in translating this into detailed pragmatic guidance for CFE. The critical nature of emergencies makes such detailed pragmatic guidance essential, yet one of the main challenges to its realisation is how to translate the available evidence-base into the required action in the field. Further, as stated, some terms used in CF and CFE still remain undefined, adding further complexity to an already complex challenge.

Significant progress on IFE over the past 9 years has produced a working ‘model’ for achieving this, with the development of the *Operational Guidance on IFE*⁵⁷ to assist with the practical application of the *Guiding Principles for IFE*⁵⁸, and training modules for IFE by the international interagency collaboration, the IFE Core Group and collaborators. The IFE Core Group and collaborators have produced two training modules on IFE; Module 1 on IFE (2001⁵⁹; update 2009) and Module 2 on IFE (2007⁶⁰) (see box 3). In the development of Module 2 it was recognised that detailed practical guidance on CFE could not be provided within the existing modules due to their density and the depth of information required to fully address CFE. Therefore for the purposes of the Module 2, the WHO’s *Guiding principles for complementary feeding of the breastfed child*⁶¹ and *Guiding principles for feeding of non-breastfed children 6-24 months of age*⁶² were provided as an interim measure in the annexe of Module 2.

Box 3: Training Modules developed by IFE Core Group and collaborators

Module 1 on IFE is an orientation package for all emergency relief staff to aid with the practical implementation of the Operational Guidance on IFE. First produced in 2001, update due in 2009 (English).

Module 2 on IFE is designed for health and relief staff directly involved with infants, young children and their caregivers in emergencies. It includes detailed assessment and individual counselling support of breastfeeding including more specialised aid, management of infant under 6 months that are severely malnourished, and considerations for management of infants who are not breastfed at individual, group and population levels. First produced in 2004, updated in 2007 (English and French).

Available from the ENN in print or to download at www.ennonline.net

Recently, a Harmonized Training Materials Package (HTP) has been produced through an inter-agency collaboration in the emergency nutrition sector, funded by the UNICEF-led Global Nutrition Cluster⁶³. This is one of several capacity development initiatives being undertaken by the Nutrition Cluster to harmonise training for nutrition in emergencies. The 21 modules cover a broad range of subject areas concerned with nutrition in emergencies, including *Infant and Young Child Feeding (Module 17)*. Module 17 draws on content from the aforementioned Module 1 (2001), Module 2 on IFE, and content in development for Module 1 update. Consequently, CF is not addressed in Module 17.

There is a noted gap in comprehensive content on CFE, a longstanding concern of the IFE Core Group^{64,65} and also highlighted as a key concern by the IASC Nutrition Cluster in 2006 and the Nutrition in Emergencies Working Group of the UN SCN⁶⁶. The likely need to produce a third training module on CFE is the impetus behind this review. In order to confirm the need for and identify the requirements of such a CFE module, it is necessary to review current CFE resources which would inform such a module. Recently, WHO and UNICEF organised an informal consultation to strengthen action to improve feeding of infants and young children aged 6-23months⁶⁷. It included analysis of current knowledge of interventions to identify where the gaps lie, and initiated the development of programme guidance on CF for decision-makers and programme planners. Given such global momentum, the timing of this review is appropriate to capitalise on current thinking in determining what is now required to fill the pragmatic CFE guidance gap, and the implications for an IFE Core Group and collaborators CFE training resource; a *CFE module*.

3.1 Summary of Method and Review Objectives

Materials and resources were identified through IFE Core Group members and their contacts, who were asked to share resources produced or used by their agencies or by others that they would recommend. In a separate initiative to identify resources on IFE to populate an online resource library in 2007/08, materials on or applicable to CFE were specifically sought. Thus the documentation reviewed is not exhaustive but reflects the key content that this group currently has access to and actively refers to.

Box 4: Summary of Review Objectives

- *Identify and evaluate current CF resources which are applicable to CFE*
- *Identify gaps in resource provision and the associated implications for a potential CFE module*
- *Determine whether existing resources may be optimised and/or synergised with a potential CFE module*

3.2 Overview of Documentation Governing IFE

When evaluating such a body of documentation, it is important to consider the stated intended purpose of the documents to fairly assess and fully understand the adequacy of information provided, and thereby any shortfalls to providing practical CFE guidance. The intended purpose will have implications for the scope, objectives, target audience, and thus the level and type of information provided. For example, global positions provide universal principles (the ‘big picture’) and are intended to ensure all concerned parties work towards the same goal, whereas guiding principles, strategies and policies are intended to provide a framework and guide thinking on how to implement these universal principles when planning interventions; these documents do not typically provide any detailed instruction on the actions required. Likewise, operational and technical guidance are intended to operationalise recommendations to assist with their practical application, but it is the training modules and workshops which will provide the pragmatic, detailed, and context-specific information required by field staff. An overview of the purpose and relative nature of relevant documents is illustrated in figure 2 below.

Figure 3 Schematic overview of purpose and relative nature of documentation



Due to such a variety of purpose in the body of documentation related to IFE, and more specifically to CFE, it is necessary to define what is meant by 'adequate' in the context of this review. Given the stated intended purpose of the document, a document will be considered 'adequate' if it makes appropriate reference to the governing principles of CF, and the information is therefore suitable for adaption into more practical CFE guidance. However, there are a number of factors that will provide challenges to the adequacy of any document and introduce added complexity, most notably;

- *Defining complementary foods*
- *The diverse nature of emergencies (e.g. acute onset versus chronic situations)*
- *Differences in humanitarian response*
- *Cultural differences of affected regions*
- *Prevailing conditions prior to the emergency and prior to the CF period*
- *Unclear delineation between CFE and other emergency issues such as malnutrition prevention and management*
- *Lack of resolution of ongoing issues*
- *New issues/information since publication*

Such factors will need to be considered in an evaluation of adequacy, especially the last two points. These points highlight the impact of time on any issue addressed in publications, being subject to possibilities of contestation in the evidence base as well as advances in research and technological innovation, and thus their inherent limitations. Key resources related to CFE are outlined below.

3.2.1 Global and International Conventions, Declarations and Standards

- *Convention on the Rights of the Child (CRC) (UNHCHR, 1989)*
- *Innocenti Declaration (1990; 2005)*
- *International Code of Marketing of Breastmilk Substitutes (WHO, 1981) and subsequent relevant World Health Assembly (WHA) Resolutions (the Code)*

Protecting and supporting IFE is mandated in international conventions, declarations and standards. These clearly define the obligations and responsibilities that governments and donors have to infants and young children and their carers in emergencies, and promote accountability for the humanitarian response provided. Furthermore, the heightened vulnerability of children in emergencies increases the

need for interventions to protect, promote and fulfil their rights to the highest attainable standard of health and development. As stated, these documents seek to protect and promote the health and wellbeing of people through universal principles (the 'big picture') intended to ensure all concerned parties work towards the same goal. They are not intended to provide practical guidance, and so are not evaluated, but they have implications for IFE and are fundamental to understanding the foundation and evolution of more detailed CFE guidance.

The *Convention on the Rights of the Child* (CRC) directly and indirectly commits all to promote and protect the nutritional wellbeing of women and children. In particular, article 24 is especially important with regard to IFE; recognising the right of children to the highest attainable standard of health. To achieve this, appropriate measures are called for to diminish infant and child mortality, including education of and practical support for child health and nutrition, highlighting the importance of breastfeeding. Guided by CRC and similarly established human rights, the *1990 Innocenti Declaration* followed and was adopted to improve infant and young child feeding practices worldwide through the "Protection, Promotion and Support of Breastfeeding". In 2005 progress in relation to the operational targets of the 1990 Declaration was examined and the remaining challenges identified. The 2005 Declaration called on governments and donors to increase resources for infant and young child feeding as a key child survival strategy, and envisioned enabling mothers, families and other caregivers to make informed decisions about optimal feeding; highlighting the importance of skilled practical support, and recognising IFE as one of the key challenges to achieving this. All parties are called to;

"Protect breastfeeding in emergencies, including by supporting uninterrupted breastfeeding and appropriate complementary feeding, and avoiding general distribution of breastmilk substitutes"

The *International Code of Marketing of Breastmilk Substitutes and subsequent relevant WHA Resolutions* (*the Code*) is fundamental to protecting and supporting safe and appropriate IFE. It is intended to protect mothers and caregivers of both breastfed and non-breastfed infants and young children from commercial influences on their feeding choices. Such protection is critical during emergencies when infants and young children are at their most vulnerable. Likewise, caregivers are at their most vulnerable in terms of challenges undermining their confidence and ability to care for their children, particularly undermining breastfeeding and increasing the risks of artificial feeding. All provisions of *the Code* are applicable in emergencies (some are specific to emergency contexts), and the responsibilities of the infant food industry, health workers, governments and organisations are stipulated in relation to the marketing of BMS, feeding bottles and teats.

The provisions of *the Code* have been incorporated and built upon in the *Operational Guidance on IFE* and other resources, with the main focus being how to minimise the risks of artificial feeding in emergencies for both breastfed and non-breastfed infants and young children, while in parallel protecting and supporting breastfeeding. *The Code* does not ban the use of BMS (such as commercial infant formula) during emergencies, but does control how they are marketed; marketing being defined as product promotion, distribution, retail, advertisement, public relations, and information services. ***Few resources specifically address issues arising from commercial foods availability and use in emergency situations (e.g. arising through unsolicited donations), most notably; sustainability of supply, sales inducement, the role of industrially produced products in CF and in relation to local complementary foods, and balancing the benefits of their improved safety under certain conditions versus displacement of local diets and any potential commercial advantage gained.***

Violations by companies may occur in emergencies when the situation is viewed as an ‘opportunity’ to enter or strengthen markets. Those working as part of the humanitarian response may also violate *the Code*; violations may often be unintentional and reflect poor awareness of *the Code* provisions. Further, many violations of *the Code* in emergencies have been associated with *donations* of BMS. Thus implementation of *the Code* is an important emergency preparedness activity, and is a key contribution to promoting accountability in humanitarian emergency response⁶⁸.

3.2.2 Guiding Principles, Strategies and Policies

- *2002 Global Strategy for Infant and Young Child Feeding (UNICEF/WHO, 2003)*
- *Planning guide for national implementation of the global strategy for infant and young child feeding (WHO, 2007)*
- *Guiding Principles for Complementary Feeding of the Breastfed Child (WHO, 2003)*
- *Guiding Principles for Feeding Non-Breastfed Children 6-24 months of Age (WHO, 2005)*
- *Guiding Principles for Feeding Infants and Young Children in Emergencies (WHO, 2004)*

The *Global Strategy for Infant and Young Child Feeding* provides the overall strategy and framework for protecting, supporting and promoting appropriate feeding practices. It is based on the evidence for the crucial role nutrition plays in early life and the role optimal feeding practices play in achieving optimal health outcomes. The *Planning Guide* accompanies the Strategy, with the purpose of assisting countries to develop national plans of action to improve child nutrition, outlining what needs to be done to protect, promote and support breastfeeding. However, in terms of CF, the Guide needs to be updated to give further clarity on what is required to strengthen complementary foods and feeding practices⁶⁹.

The Strategy reflected a concerted effort to renew global focus on the impact of feeding practices on the survival of infants and young children, and called for renewed commitment to work towards targets set by the aforementioned 1990 *Innocenti Declaration*. The 2005 *Innocenti Declaration* called for commitment towards implementation of the Strategy, and the three documents are recognised as cornerstones to achieving the child's right to the highest attainable standard of health as stipulated in the CRC⁷⁰. In terms of IFE, the Strategy recognises emergencies as one of the “exceptionally difficult circumstances” which compromise infant and young child feeding requirements and the direct contribution inappropriate feeding practices make to illness, malnutrition and mortality. The Strategy calls for specific information and training materials aimed at ensuring feeding requirements of infants and young children in exceptionally difficult circumstances are met.

Key publications for standards and indicators are *Guiding principles for complementary feeding of the breastfed child* and *Guiding principles for feeding of non-breastfed children 6-24 months of age*. These Guiding Principles are intended to guide policy and programmatic action at global, national, and community levels, and designed to be translated in different settings into specific messages to inform health care providers, mothers, and caregivers. Although the Guiding Principles are very comprehensive, specific strategies are required for feeding in exceptionally difficult circumstances such as emergencies, and the key international document for this is the *Guiding principles for feeding infants and young children during emergencies*. These Principles are intended as a foundation for “organising sustained pragmatic field interventions that will ensure appropriate feeding and care for infants and young children at all stages of an organised emergency response”.

The Principles were produced to help counteract the increases in morbidity and mortality in infants and young children in emergencies, and highlighted the key point that optimal feeding practices during emergencies are essentially the same as those that apply in more stable conditions. It provides comprehensive information of key areas related to CFE, but since IFE is only one aspect of a broader strategy for ensuring population survival, the principles are intended to be applied flexibly in conjunction with other manuals, guidelines, training materials, and field-orientated resources which provide more specific and detailed information. Each principle is presented with its implication in an emergency situation, and the associated suggested action.

3.2.3 Operational and Technical Guidance

- *Infant and Young Child Feeding in Emergencies; Operational Guidance for Emergency Relief Staff and Programme Managers; v2.1 (IFE Core Group, 2007)*
- *Guidance on Infant Feeding and HIV in the Context of Refugees and Displaced Populations (v1.1 UNHCR, June, 2009)*
- *Food and Nutrition Needs in Emergencies (UNHCR/UNICEF/ WFP/WHO, 2002)*
- *Behavioural Change Communication in Emergencies; a Toolkit (UNICEF, 2006)*

Infant and Young Child Feeding in Emergencies; Operational Guidance for Emergency Relief Staff and Programme Managers is concise and practical policy guidance on how to ensure safe and appropriate infant and young child feeding in emergencies, and is key reference guidance on IFE. The *Operational Guidance on IFE* focuses especially on infants and young children under 2 years of age and their caregivers, recognising their particular vulnerability in emergencies. It intends to operationalise global recommendations on infant and young child feeding in a single document specifically for the emergency context, drawing on technical guidance, empirical evidence, and experience from past emergencies.

Key provisions of *the Code* are integrated and expanded to meet the particular challenges emergencies pose the implementation of *the Code*. Thus, in supporting implementation of the *Operational Guidance on IFE*, *the Code* is considered and upheld. It is targeted towards all emergency relief staff and programme managers and personnel of any agency or organisation working in emergency programmes. This includes national governments, United Nations (UN) agencies, national and international non-governmental organisations (NGOs), civil societies, donors and the military. It applies in emergency situations in all countries, and extends to non-emergency situations in relation to emergency preparedness.

Similarly, the *Guidance on Infant Feeding and HIV in the Context of Refugees and Displaced Populations* operationalises technical consultation recommendations and guidance based on new evidence and programme experience of HIV and infant feeding. It is intended to provide guidance to facilitate effective implementation of HIV and infant feeding programmes, and be an integral part of a co-ordinated approach to public health, HIV and nutrition programming, including emergency contexts. Being specifically orientated towards safe and appropriate infant feeding practices in light of HIV, it specifically deals with breastfeeding and CF with regards to this, addressing the particular implications for such feeding practices and any associated risks.

In terms of guidance documents aimed at field level staff, *Food and Nutrition Needs in Emergencies* and *Behavioural Change Communication in Emergencies; a Tool-kit*, are key resources. *Food and Nutrition Needs in Emergencies* are guidelines for use as a practical tool to assess, estimate and monitor the food and nutrition needs of populations in emergencies, including vulnerable groups such as infants and young children. They are intended to promote timely, coordinated and effective action

through improved understanding of food and nutrition needs during emergencies; including optimal IFE and provide practical advice for CF options. *Behavioural Change Communication in Emergencies* is a toolkit to help those working in natural disaster emergencies use behavioural change communication. The toolkit is grounded on the human-rights based and results-based approach to programme planning and development, and is geared towards facilitating community mobilisation and participation in preparing and responding to disasters. In terms of IFE, breastfeeding promotion is given as one of five essential programmatic areas in emergencies and optimal infant feeding practices are promoted. Further, it highlights the contribution that communication interventions can make to an emergency response, in both short and long term;

“Communication interventions that span beyond the initial response should build upon those implemented pre-emergency and during the initial response. Besides increasing knowledge and optimal infant feeding know-how, community participation and advocacy efforts are central in protecting, promoting and supporting breastfeeding”

3.2.4 Training Modules and Workshops

- *Module 1 (IFE Core Group, 2001; update pending 2009) and Module 2 (IFE Core Group, 2007)*
- *Infant and Young Child Feeding Counselling; an integrated course (WHO, 2006)*
- *Complementary Feeding Counselling; a training course (WHO, 2004)*
- *Integration of IYCF into CTC/CMAM Guide (ENN, pending July, 2009)*
- *Infant and Young Child Feeding Counselling: A Community-Focused Approach (CARE/URC/CHS, 2008)*

As stated, the IFE Core Group produced two training modules on IFE; Module 1 and Module 2. Both modules were developed to build capacity in the emergency sector, taking into account the time constraints for orientation and training with staff. The first version of Module 1 was essentially designed to be a 1-2 hour orientation training module for emergency relief staff. Considerable policy developments and collation of experiences since its production in 2001 has warranted an update to the orientation package (Module 1 v2) to support implementation of the Operational Guidance on IFE. Due out later in 2009, it will include online interactive lessons (4-5 hours) and written content. In the update, CFE is included as a key consideration and basic intervention in every emergency, however it is not detailed enough to guide operations. Module 2 is a 5+ hours training module aimed at health and nutrition workers in emergencies. Both modules focus on the protection and promotion of breastfeeding, with the introduction of appropriate complementary foods.

Module 2's content on breastfeeding counselling is based on the WHO/UNICEF Breastfeeding Counselling (BFC) training course (40 hour course). Module 2 also includes extended content on artificial feeding in emergencies and the management of acute malnutrition in infants under 6 months; content developed in response to identified gaps amongst staff working in emergency contexts. As stated, Module 2 could not provide detailed practical guidance on CFE due to its density and extended content already included. As an interim measure, WHO's *Guiding principles for complementary feeding of the breastfed child*, and their adaptation for feeding the non-breastfed child, are given in the annexe of Module 2.

Infant and Young Child Feeding Counselling; an integrated course is based on the aforementioned *Global Strategy for IYCF* and aims to assist with the practical implementation of its recommendations. However, although the Global Strategy includes emergency situations, along with malnourished children, low-birth-weight babies, infants of HIV-infected mothers and orphans, in "feeding in exceptionally difficult circumstances", the course only discusses feeding low-birth-weight babies and HIV and infant feeding. Thus in terms of IFE, although optimal infant feeding and CF are fully discussed, there are no specific references to the challenges of emergency situations.

Whilst the above 2006 WHO course embraces some wider topics, the earlier 2004 course *Complementary Feeding Counselling; a training course* is specific to CF. The 2004 CF course aims to improve feeding practices of children during the CF period by ensuring reliable and culture-specific nutrition counselling is available to health workers working with caregivers. It offers practical advice, focussing on introduction of CF foods, enhancing home-prepared foods, use of low-cost processed complementary foods, and improving feeding behaviours. It is very much focussed on CF in stable environments, not being intended to address the nutritional care of young children with severe malnutrition or nutrition-related diseases. Thus, as with the 2006 course, although the details of CF are fully discussed, there is no reference to emergencies, the specific challenges of emergency situations, and consequently the requirements for CFE.

The training package for *Infant and Young Child Feeding Counselling: A Community-Focused Approach* is aimed to train low literacy, community-level IYCF Counsellors to help caregivers optimally feed their infants and young children. It reflects training material developed for health and nutrition workers in emergency situations, including the IFE Core Group's Module 2, and the approach draws on infant feeding and other behaviour change communication materials previously developed. The technical content is based on the WHO/UNICEF breastfeeding counselling, CF counselling, and infant and young child feeding integrated counselling courses. It was initially piloted in the Dadaab Camps, Kenya in 2007. Although it draws on and reflects such a variety of sources, Dadaab is a stable chronic situation and not an emergency setting, and as such does not directly address the requirements for CFE.

Differing from the above courses, *Integration of IYCF into CTC/CMAM Guide* addresses CF within a Community-based Therapeutic Care (CTC)/ Community-based Management of Acute Malnutrition (CMAM) framework. Developed as part of the ENN-led IFE Core Group initiative to integrate IYCF practices into CTC/CMAM approaches, it is a specialised and technical two-day training course dealing with IYCF in the context of acute malnutrition prevention as well as rehabilitation. It is designed to accompany CTC/CMAM training, not as a standalone course on IYCF, and includes both classroom-based teaching and practical sessions. Despite not directly addressing emergency situations or CFE, its specialised focus towards the burden of malnutrition and integrating IYCF practices into malnutrition management in children under 2 years, addresses key challenges in emergency situations. It has been piloted in Sierra Leone (with Valid International, UNICEF and MOH) and Zimbabwe (with SC UK, UNICEF and MOH) and will be available at the end of July 2009 from the ENN.

Additional resources that may prove useful to CFE training are counselling cards and detailed context-specific feeding practices and recipes using locally available foods, examples of such being WHO's *Counselling Cards*⁷¹ and *Afghan Feeding Practices and Recipes*⁷². The counselling cards are a series of educational pictures, and are accompanied with tips on how they can be used, why they can be useful, and how they could be amended or developed to suit local conditions. The *Afghan Feeding Practices and Recipes*, although specifically developed to address Afghan families' feeding problems with their local foods, it is designed to complement existing infant and young child feeding and breastfeeding counselling resources. The document provides detailed practical advice and recipes, highlighting the need for an integrated approach and that families not only need food but the practical guidance on how to use these foods well; essentially good nutrition requires food, knowledge and skills. In terms of IFE and CFE training, such a resource is very useful and could potentially be adapted for use in other contexts.

3.2.5 Overview of Current Research

The recent WHO Consultation *Strengthening action to improve feeding of infants and young children 6-23 months of age in nutrition and child health programmes*⁷³ concluded that the evidence and experience for what works to improve the utilisation and intake of adequate complementary foods is limited with important weaknesses; there are not enough examples of well-documented, large-scale programmes that have successfully improved feeding practices and resulted in improved health outcomes. ***The WHO Consultation noted that in terms of intervention, results from a review of 42 efficacy trials and effectiveness studies on CF interventions indicated that there is no one universal "best" package of interventions to improve CF***⁷⁴.

This was due to great variability in both the needs of and the options for accessing appropriate foods in the target population. Factors highlighted by the review as impacting on the efficacy of interventions were the initial prevalence of malnutrition, degree of household food insecurity, energy density of locally available complementary foods, and availability of micronutrient-rich local foods.

One of the overall objectives of the *WHO Consultation* was to “discuss a framework to translate the aforementioned *Guiding principles for complementary feeding of the breastfed child* and the *Guiding principles for feeding non-breastfed children 6-24 months of age* into context-specific interventions and intervention combinations”. It was acknowledged that the available evidence addressed selected dimensions of the *Guiding Principles*; notably, amount of complementary food needed, meal frequency and energy density, nutrient content and the use of micronutrient supplementation or fortification. However, there is less programmatic experience in the practical application of other dimensions such as maintenance of breastfeeding during the CF period, responsive feeding, safe preparation and storage of complementary foods, and feeding during and after illness.

In terms of other research of note, the recent Lancet series on *Maternal and Child Undernutrition* highlighted that improving CF practices among food-insecure populations is best achieved by combining nutrition counselling, food supplements and cash transfers as part of a ‘social protection package’⁷⁵. Further, it suggests that CF counselling and support strategies in such populations could substantially reduce the burden of stunting and related disease. In terms of a social protection package to achieve nutritional objectives, tools available to help determine the component specifics are somewhat lacking.

There are a number of tools that may be instrumental in identifying where there are, for example, economic constraints to optimal CF practices, and inform social protection strategies to address them, e.g. Linear Programming, ProPAN and Save the Children’s recently described ‘Cost of the Diet’ (CoD)⁷⁶ method. One interesting feature of the COD is that it can calculate the minimum amount of money a family has to spend to meet their macro- and micronutrient requirements and is context-specific. The lowest-cost good quality diet is calculated using locally available foods, and for children aged 6-23 months it includes a fixed amount of breastmilk (based on average intakes and is age specific⁷⁷).

The *WHO Consultation* concluded that educational approaches (including aforementioned counselling and behaviour change communication) are essential to improve infant and young child feeding practices. Further, since successful interventions to improve CF are likely to be context-specific, some general principles are likely to apply and identification of these, as well as the context-specific characteristics, is crucial to improving feeding practices. There is thus an urgent need for large-scale effectiveness studies and evaluations to enable comparisons of process, impact, scale and costs to be made and therefore strengthen the evidence

base for effective CF action⁷⁸. A key next step proposed by the WHO Consultation for operationalising the conclusions and recommendations is to “prepare a toolkit for the development of a national strategy and action plan on complementary feeding and provide guidance on its use”. This has important implications for a CFE training module, not only in terms of the conclusions regarding the CF evidence base, but in terms of embracing and integrating CFE into the architecture of the proposed national strategy and action plan.

3.2.6 Current practice

In the absence of adequate CFE content and guidance, implementing agencies still need to take action and manage CFE in the field. There is a spectrum of field experiences concerning CFE in the literature, and by taking a ‘snapshot’ of what is currently happening, it is possible to see if there are any interim activities that are not reflected in the resources. Further, such a snapshot provides a crucial insight for understanding the social context leading to nutritional vulnerability in children; social practices, cultural beliefs, personal identity, intra-household dynamics, and economic factors may combine in ways to influence children’s well-being that are not easy to predict without understanding the local situation in some detail⁷⁹.

The implications for a CFE resource are that the reality of what people are doing in the field can both inform content development and also alert us to where initiatives may be undertaken that are contrary to ‘official’ recommendations. The latter is especially important, and further lends urgency for pragmatic CFE guidance. Essentially we need to evaluate such practices, understand their contextual nature and level of applicability (local versus global), and apply any learnings to a *CFE module*. Table 4 outlines some examples of current practices, initiatives, and interventions being used in the field, both in emergency and non-emergency contexts, along with the reported observations.

Table 4 Examples of current practices, initiatives, and interventions in the field

Practice/Initiative/Intervention	Observation
Modifying complementary foods with starch-breaking enzymes (alpha-amylase) and fortification to enhance energy density and improve quality foods (Zambia) ⁸⁰	The main observation has been that the developed blend is widely accepted by mothers who report that their children like the porridge
HIV positive mothers; in the absence of breastmilk, a study is being conducted into the use of a RUTF as part of the complementary feeding diet of infants over 6 months of age (Malawi) ⁸¹	Preliminary results suggest that young children are growing very well with this type of nutritional support. (longer term outcomes and sustainability are not described).
Complementary food vouchers given to caregivers which are exchangeable for certain commodities suitable for complementary foods for children under 2 years (part of cash programme) (Kenya) ⁸²	Currently being implemented by Action Against Hunger.
Non-coordinated blanket distribution of BMS; infant formula, powdered milk (dried skimmed milk), and various commercial complementary foods (Indonesia earthquake, 2006) ⁸³	Undermined optimal feeding practices and many infants and young children were suffering from diarrhoea as a result of changed feeding practice and consuming BMS in poor sanitary conditions
Knowledge, Attitudes and Practices Study on infant and young child feeding and health seeking practices in Somalia ⁸⁴	Poor practices linked to poor knowledge and exacerbated by collapse in basic infrastructure (war)
Field study in Uganda, Malawi and Guatemala on storage, preparation and usage of fortified blended food ⁸⁵ .	Need to advise on shorter food cooking times of fortified foods distributed in aid. Cooking times are too long, increasing fuel needs and compromising micronutrient content.
Short-term (3 month) distribution of ready to use therapeutic food (RUTF) to children 6-60 months in Niger ⁸⁶	Short-term use reduced decline in nutritional status normally observed at this time. Limitations noted include cost and no comparison against other interventions.
Social context of childcare practices and nutrition in Niger ⁸⁷	Authors conclude that understanding and responding to the social context of child malnutrition will help aid workers integrate humanitarian efforts

3.3 Evaluation of Resources; Gap-analysis

In terms of evaluation, gap analyses were conducted using the documents outlined in sections 2.2.2 – 2.2.4 above, to pinpoint the current gaps in CFE guidance and thereby inform the development of pragmatic CFE guidance and specifically the basis for a *CFE module*. The gap analyses are given in tables 6-10, with the criteria for evaluation given in table 5.

Table 5 Criteria used for evaluation of documents related to CFE

Indication	Evaluation
✓	Contains adequate information given the stated intended purpose of the document; makes appropriate reference to governing principles of CF and information is suitable for adaption into more practical CFE guidance
✗	Contains inadequate information given the stated intended purpose of the document; reference to governing principles of CF is indirect or lacking in sufficient detail
✗	Fails to provide information given the stated intended purpose of the document; reference to governing principles of CF is missing
*	Information is not applicable to stated intended purpose of document
NEW	Factor is a new consideration since publication (i.e. post 2003 publications)

As stated, when evaluating such a body of documentation, it is important to consider the stated intended purpose of the documents to fairly assess and fully understand the adequacy of information provided, and thereby any shortfalls. Resources were evaluated on two levels; all documents were compared against high-level considerations in CFE (tables 6 and 7) and then evaluated more in terms of more specific CFE considerations (tables 8, 9 and 10). The high-level CFE considerations were;

- *The importance of breastfeeding in the context of CF*
- *Reference made to what constitutes CF foods*
- *Reference made to FATVAH elements of CF (training tool)*
- *The role of fortified foods in CF*

As discussed, 'fortified foods' embraces a broad spectrum of foods that are often used or considered for children of CF age in an emergency to improve the quality of the diet. Specific reference to such products in guidance is important in the context of CFE, given that there are risks and benefits to their application in emergency settings, in both the short and long-term. There are currently no standard criteria for using such fortified foods and supplements in children of CF age, and there are important implications of their use to consider; cost, target age-group, time period for use, and perhaps most pertinently, how to support the use and (if totally dependent) transfer to 'normal' complementary foods after their use. The mainstream acceptance⁸⁸ and rollout of community-based management of acute malnutrition has been realised partly due to the development RUTF. More recently, the expansion of RUTF use from treatment into prevention of acute malnutrition brings these products more clearly into CF territory (and potentially under *the Code* jurisdiction). More specific CFE considerations were;

- *Importance of supporting optimal maternal nutrition*
- *Support for optimal breastfeeding practices*
- *Support for optimal CF practices;*
 - *Using fortified foods in CF*
 - *Micronutrient supplementation in children of CF age*
 - *Safe and appropriate preparation of complementary foods*
 - *Ensuring appropriate energy and nutrient density of complementary foods*
 - *Practicing responsive feeding*
- *Ensuring availability of resources required to enable CF (e.g. fuel, water, utensils)*
- *Role of CF in nutritional rehabilitation of malnourished children*
- *Specific challenges in emergencies to appropriate CF*
- *Appropriate CF in the context of HIV*
- *Importance of upholding the Code in representation and use of complementary foods*
- *Use and role of RUTF in CF*

Complementary Feeding of Infants and Young Children in Emergencies

Document	Context	Does the document specifically refer to breastfeeding in the context of complementary feeding?	Does the document make reference to what constitutes complementary foods?	Does the document deal with any of the FATVAH elements of complementary feeding?	Does the document refer to fortified foods in complementary feeding?
3.2.2 Guiding Principles, Strategies and Policies					
<i>2002 Global Strategy for Infant and Young Child Feeding</i>	Universal	✓	✓	✓	✓
<i>Guiding Principles for Complementary Feeding of the Breastfed Child</i>	Universal	✓	✓	✓	✓
<i>Guiding Principles for Feeding Non-Breastfed Children 6-24 months of Age</i>	Universal	✓	✓	✓	✓
<i>Guiding Principles for Feeding Infants and Young Children During Emergencies</i>	Emergencies	✓	✓	✓	✓
3.2.3 Operational and Technical Guidance					
<i>Infant and Young Child Feeding in Emergencies; Operational Guidance on IFE</i>	Emergencies	✓	✓	✓	✓
<i>Guidance on Infant feeding and HIV in the context of refugees and displaced populations</i>	Emergencies	✓	✓	✓	✗
<i>Food and Nutrition Needs in Emergencies</i>	Emergencies	✓	✓	✓	✗
<i>Behavioural Change Communication in Emergencies; a Toolkit</i>	Emergencies	✓	*	*	*

Table 6 High-level evaluation of documents outlined in sections 3.2.2 and 3.2.3

Complementary Feeding of Infants and Young Children in Emergencies

Document	Context	Does the document specifically refer to breastfeeding in the context of complementary feeding?	Does the document make reference to what constitutes complementary foods?	Does the document deal with any of the FATVAH elements of complementary feeding?	Does the document refer to fortified foods in complementary feeding?
3.2.4 Training Modules and Workshops					
<i>Infant Feeding in Emergencies; Module 1, 2001 (orientation)</i>	Emergencies	✓	✓	✗ (included in updated edition due end 2009)	✗ (included in updated edition due end 2009)
<i>Infant Feeding in Emergencies; Module 2, 2007 (technical)</i>	Emergencies	✓	✓	✓	✓
<i>Infant and Young Child Feeding Counselling; an integrated course</i>	Non-emergency	✓	✓	✓	✓
<i>Complementary Feeding Counselling; a training course</i>	Non-emergency	✓	✓	✓	✓
<i>Infant and Young Child Feeding Counselling; a community focussed approach</i>	Low resource settings	✓	✓	✓	✓
<i>Integration of IYCF into CTC/CMAM Guide</i>	Malnutrition management	✓	✓	✓	✗
<i>Harmonised Training Package (HTP): Chapter 17 IYCF</i>	Emergencies	✓	✓	✓	✓

Table 7 High-level evaluation of documents outlined in sections 3.2.4

Complementary Feeding of Infants and Young Children in Emergencies

Document	Context	Maternal nutrition	Support for optimal breastfeeding	Use of fortified foods in CF	Micronutrient supplementation	Resources for CF (e.g. water, fuel, utensils)	Safe and appropriate complementary food preparation	Energy and nutrient density of complementary food	Responsive feeding	CF in nutritional rehabilitation	Specific challenges of emergencies	Appropriate CF in context of HIV	Upholding the Code in complementary food representation and use	Use and role of RUTF in CF
3.2.2 Guiding Principles, Strategies and Policies														
<i>Global Strategy for Infant and Young Child Feeding</i>	Universal	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✗	✓	NEW
<i>Guiding Principles for Complementary Feeding of the Breastfed Child</i>	Universal	✓	✓	✓	✓	✓	✓	✓	✓	*	*	✗	✓	NEW
<i>Guiding Principles for Feeding Feeding Non-Breastfed Children 6-24 months of Age</i>	Universal	✓	✓	✓	✓	✓	✓	✓	✓	*	*	✗	✓	✗
<i>Guiding Principles for Feeding Infants and Young Children During Emergencies</i>	Emergencies	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✗	✗	✗

Table 8 More detailed evaluation of documents outlined in section 3.2.2

Complementary Feeding of Infants and Young Children in Emergencies

Document	Context	Maternal nutrition	Support for optimal breastfeeding	Use of fortified foods in CF	Micronutrient supplementation	Resources for CF (e.g. water, fuel, utensils)	Safe and appropriate complementary food preparation	Energy and nutrient density of complementary food	Responsive feeding	CF in nutritional rehabilitation	Specific challenges of emergencies	Appropriate CF in context of HIV	Upholding the Code in complementary food representation and use	Use and role of RUTF in CF
3.2.3 Operational and Technical Guidance														
<i>Infant and Young Child Feeding in Emergencies; Operational Guidance on IFE</i>	Emergencies	✓	✓	✓	✓	✓	✓	✓	✗	✗	✓	✗	✓	✓
<i>Guidance on Infant feeding and HIV in the context of refugees and displaced populations</i>	Emergencies	✓	✓	✗	✗	✓	✓	✗	✗	✗	✓	✓	✓	✗
<i>Food and Nutrition Needs in Emergencies</i>	Emergencies	✓	✓	✗	✓	✓	✓	✓	✗	✗	✓	✗	✗	NEW
<i>Behavioural Change Communication in Emergencies; a Toolkit</i>	Emergencies	✓	✓	*	*	*	*	*	*	*	✓	*	✗	*

Table 9 More detailed evaluation of documents outlined in section 3.2.3

Complementary Feeding of Infants and Young Children in Emergencies

*Document	Context	Maternal nutrition	Support for optimal breastfeeding	Use of fortified foods in CF	Micronutrient supplementation	Resources for CF (e.g. water, fuel, utensils)	Safe and appropriate complementary food preparation	Energy and nutrient density of complementary food	Responsive feeding	CF in nutritional rehabilitation	Specific challenges of emergencies	Appropriate CF in context of HIV	Upholding the Code in complementary food representation and use	Use and role of RUTF in CF
3.2.4 Training Modules and Workshops														
<i>Infant Feeding in Emergencies; Module 1, 2001 (orientation)</i>	Emergencies	✓	✓	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗	NEW
<i>Infant Feeding in Emergencies; Module 2, 2007 (technical)</i>	Emergencies	✓	✓	✗	✓	✗	✓	✓	✓	✗	✓	✗	✗	✗
<i>Infant and Young Child Feeding Counselling; an integrated course</i>	Non-emergency	✗	✓	✓	✓	✓	✓	✓	✓	✓	*	✗	✓	✗
<i>Complementary Feeding Counselling; a training course</i>	Non-emergency	✗	✓	✓	✓	✓	✓	✓	✓	*	*	✓	✓	✗
<i>Integration of IYCF into CTC/CMAM Guide</i>	Malnutrition management	✗	✓	✗	✗	✗	✓	✗	✓	✗	*	✗	✗	✗
<i>Infant and Young Child Feeding Counselling; a community focussed approach</i>	Low resource settings	✓	✓	✓	✓	✗	✓	✓	✓	✗	*	✗	✗	✗
<i>Harmonised Training Package (HTP): Chapter 17 IYCF</i>	Emergencies	✓	✓	✓	✓	✗	✓	✓	✓	✗	✓	✓	✗	✗

Table 10 More detailed evaluation of documents outlined in section 3.2.4

As stated, appropriate CF has been difficult to define in precise operational terms, and as such has not made the same progress translating the evidence base into pragmatic recommendations as breastfeeding has. Despite the nutritional principles governing infant and young child feeding being the same in an emergency as for any other situation, the complexities of CF when combined with the unpredictability and intricacies of emergencies, results in challenges for fully addressing CFE. This is clearly demonstrated in tables 4 and 5 above, where it is evident that CF and CFE and their associated considerations are not fully addressed in any of the resources reviewed. Further, the aforementioned issues of undefined terms being used, clarifying and interpreting terms within different contexts, and lack of a comprehensive and universally accepted definition of foods used in CF is also clearly demonstrated, further contributing to the challenges. This review process has clarified that essentially there are three elements to CF and CFE which need to be addressed; practical, nutritional, and functional;

- 1) The *practical element* comprises the preparation of complementary foods, from their appropriate and safe storage, how to prepare them correctly and the resources needed to do so, to the frequency and responsiveness of feeding. Although addressed, the required detail varied and was lacking, especially with respect to responsive feeding.
- 2) The *nutritional element* addresses the nutrient and energy density of the food, including the use of fortified foods and micronutrient supplements. The latter was overall well addressed, including supplementation of the mother, however fortification and the use of fortified foods in CFE was not. In an emergency enriching the quality of the foods available for CF can be important in order to meet nutrient requirements, and thus it is a critical concern that should be addressed in guidance.
- 3) In terms of the *functional element* to CF, this concerns defining the use, role and appropriateness of foods used as complementary foods; their use and representation with respect to *the Code*, their role in nutritional rehabilitation, the contribution of CF to child development, and the appropriateness of foods such as RUTFs. The functional element also includes the appropriateness of CF itself, in terms of the age at which it starts, support for continued breastfeeding, using age-appropriate food, as well as FATVAH considerations.

The functional elements of CF and CFE were the most inadequately addressed, and despite some of these being relatively new and/or unresolved issues, the nature of emergencies and the impact of inappropriate feeding practices heightens the importance of appropriate guidance to deal with such issues, given their potential for serious harm. Although all resources made reference to what can constitute complementary foods, there are few definitions. Current definitions in use include those given in the *Operational Guidance* and *the Code*;

- **Infant complementary food:** any food, whether industrially produced or locally-prepared, used as a complement to breastmilk or to a breastmilk substitute and that should be introduced after 6 months of age. Note: The term 'infant complementary food' is used in the Operational Guidance to distinguish between complementary food referred to in the context of infant and young child complementary feeding, and complementary food used in the context of Food Aid (i.e. foods, beyond the basic food aid commodities, given to an affected population to diversify their dietary intake and complement the ration, e.g. fresh fruit and vegetables, condiments or spices. Infant complementary foods should not be marketed for infants under 6 (completed) months (Operational Guidance)
- **"Complementary food"** means any food, whether manufactured or locally prepared, suitable as a complement to breast milk or to infant formula, when either becomes insufficient to satisfy the nutritional requirements of the infant. Such food is also commonly called "weaning food" or "breastmilk supplement" (The Code)

As is clear from the above definitions, both approaches fall short in fully encompassing the nature and requirements for complementary foods. Essentially, the terms used to characterise complementary foods are inconsistent and open to interpretation, the scope variable, and the content limited in terms of comprehensiveness and pragmatism. A new working definition is therefore proposed for complementary foods, for consideration, discussion, and further development.

3.3.1 Proposed Working Definition for Complementary Foods

The new working definition being proposed for complementary food (see Box 5), attempts to encompass the key elements of CF, address both stable and emergency contexts, and reinforce the importance of upholding *the Code*. The conceptual framework shown in figure 3 highlights some of the main drivers, considerations and challenges for developing such a working definition.

Box 5: Proposed working definition for Complementary Foods

A *Complementary Food* is any solid or semi-solid food used in *Complementary Feeding (CF)* of children aged over 6 months to 2 years as part of optimal feeding practices that fulfils the following criteria:

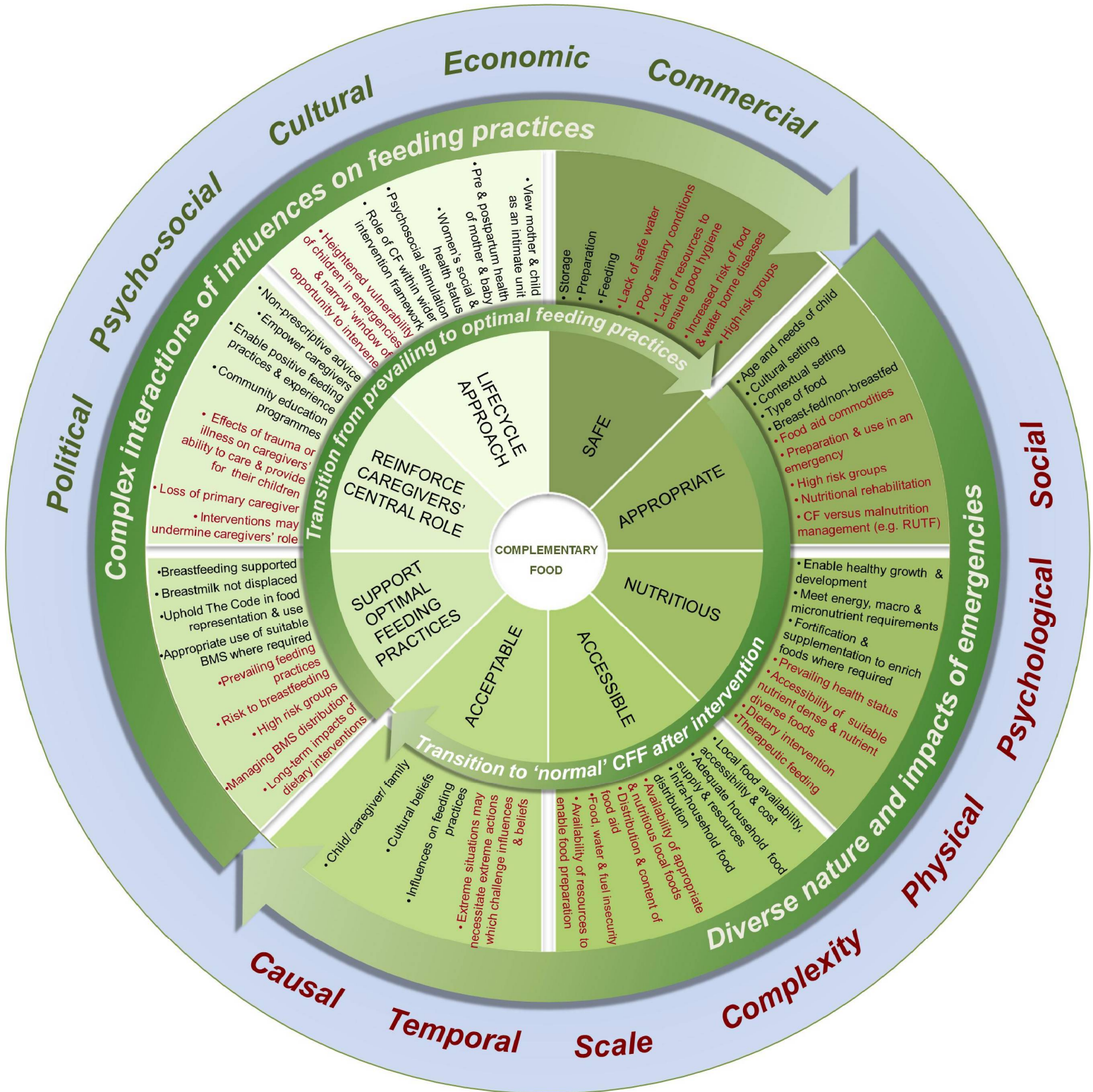
A complementary food should (a) be **appropriate and safe** in terms of age and needs of the child, type of food, and contextual and cultural setting; (b) **meet** energy, macronutrient, and micronutrient requirements (specifically iron and zinc), using fortified foods and supplementation where required; (c) **support caregivers'** central role in feeding and caring for their children; (d) **uphold the letter and intent of the Code** in marketing and use; in *breastfed* children, the food is intended and presented as a complement to continued breastfeeding, neither undermining nor displacing breastmilk; in *non-breastfed* children, the food is intended and presented as a complement to appropriate use of a suitable *breastmilk substitute (BMS)*.

Note 1: While it is acknowledged that there are a variety of ways of producing and preparing foods used in CF, clarity on how to use these terms and the contexts within which to use them is still lacking; for this purpose, the source of complementary foods has not been included in the definition.

Note 2: Therapeutic foods, such as RUTF, are a 'medical' food that may be used for a defined time during the CF period for the treatment of acute malnutrition; they are not considered a complementary food.

Note 3: Recognition of the challenges to CF in exceptionally difficult circumstances is critical in managing the risk of acute malnutrition, particularly; prevailing CF practices; adverse impacts on breastfeeding; availability, accessibility and quality of commodities suitable as complementary foods (including food rations); targeting nutritional interventions; role of complementary foods in nutritional rehabilitation; managing unsolicited donations of BMS; long-term impacts of dietary interventions on feeding practices; and supporting the transfer to 'normal' complementary foods after dietary intervention.

Figure 3 Overview of the main drivers, considerations and challenges for developing a working definition for Complementary Food; emergency considerations are given in red



3.3.2 Evaluation Conclusions

Overall, despite the inconsistencies in topics covered and level of detail, it is clear that there is a wealth of good quality information currently in existence which can be updated and optimised, and it is perhaps the lack of consolidation of this information that is aggravating the gap in guidance. Although the guidance gap will inevitably reflect advances in knowledge, lack of resolution, and new issues for consideration since publication, the potential for serious adverse short and long-term implications for infants and young children is great, and it is therefore critical that there is a centralised CFE guidance resource which address all these factors fully and takes advantage of new knowledge. **Essentially the strategies needed to fully meet CFE requirements need to be balanced with the challenges of defining such requirements.** These are outlined in table 11 below.

Table 11 Strategies and challenges to meeting and addressing CFE requirements

Strategies required to fully meet CFE requirements	Challenges to defining and addressing CFE issues in guidance
<ul style="list-style-type: none"> • <i>Supporting maternal nutrition</i> • <i>Support early and exclusive breastfeeding for first 6 months</i> • <i>Support for continued breastfeeding during the 6 months to 2 years period</i> • <i>Ensuring food rations distributed to emergency affected populations always include provision for (culturally) appropriate and nutritionally adequate complementary foods</i> • <i>Use of fortified foods</i> • <i>Micronutrient supplementation</i> • <i>Resources, such as fuel and cooking equipment</i> • <i>Voucher and complementary foods distribution schemes</i> • <i>Advice on complementary food preparation (especially for unfamiliar foods)</i> • <i>Education to ensure that meals are prepared hygienically and to an adequate nutrient and energy density (i.e. not too dilute) and fed responsively (active feeding)</i> • <i>Supplying tools and seeds to enable cultivation of suitable complementary foods</i> • <i>Strengthening links between livestock and nutrition programming to enhance food quality available to children</i> • <i>Locate CF within strategies and programming which treat malnutrition</i> • <i>Locate managing malnourished infants and young children within CF and wider IYCF strategies.</i> 	<ul style="list-style-type: none"> • <i>Defining CF foods</i> • <i>The diverse nature of emergencies, including acute onset versus chronic situations</i> • <i>Differences in humanitarian response</i> • <i>Cultural differences of affected regions</i> • <i>Prevailing conditions prior to the emergency and prior to the CF period</i> • <i>Unclear delineation between CFE and other emergency issues such as malnutrition prevention and management</i> • <i>Lack of resolution of ongoing issues</i> • <i>New issues/information since publication</i>

4. Discussion

Even with well documented impacts of inappropriate feeding practices and evidence-based recommendations for optimal feeding, infants and young children are fed in a variety of ways due to complex political, psycho-social, cultural, economic, and commercial interactions. There is thus a limit to what extent feeding practices can be influenced by public health policies, but humanitarian relief in emergencies is a critical opportunity for intervention, support, and optimisation. The acute nature of emergency situations challenges optimal feeding practices, increasing the likelihood of not breastfeeding, as well as the dangers of artificial feeding and inappropriate CF, with potentially devastating short and long term implications. The heightened vulnerability of children in emergencies increases the need for nutritional interventions to protect, promote, support, and fulfil their rights to the highest attainable standard of health and development.

In terms of CF and CFE, such complexity and unpredictability raises questions concerning the most appropriate type of interventions. Furthermore, there are questions of how can we identify and learn from 'positive deviance' practices and coping strategies employed by caregivers for CFE, and whether these can translate into appropriate and effective strategies in other contextual and cultural settings? Care needs to be taken not to overmedicalise infant and young child feeding in emergency situations; supplementary feeding programmes (SFP) are often set up to compensate for the unsuitability or inadequacy of general food rations for CF, consequently and inadvertently transforming CFE into a malnutrition management programme. Similarly, targeting RUTF to children who are not acutely malnourished to prevent a decline in nutritional status represents a therapeutic-like intervention into a non-therapeutic situation. This highlights the aforementioned unclear delineation between CFE and other emergency issues such as malnutrition management, misconceptions which are only reinforced by a lack of pragmatic CFE guidance to clearly mark where CFE stops and malnutrition management starts, and the synergy that needs to develop between the two approaches in the 'grey' area of overlap.

Research indicates that there is no single 'panacea package' of interventions to improve CF because both the needs of and the options for accessing appropriate foods in a target population vary greatly⁸⁹. The initial prevalence of malnutrition, the degree of household food insecurity, the energy density of locally available complementary foods and the availability of micronutrient-rich local foods are all factors that will affect the impact of interventions⁹⁰. These are factors which will be negatively impacted in an emergency context, and further emphasise the need for a fully integrated, responsive and flexible approach to optimise outcomes. For example, education approaches which include counselling and behaviour change communication are vital for imparting knowledge and cultivating the required skills necessary to optimise infant and young child feeding practices, and should be central to any strategy⁹¹. Further, in many situations the impact of educational approaches may need to be enhanced through the modest supply of food or food supplements in quantities which will not displace breastfeeding⁹² and/or social protection packages.

This emphasises the value of an integrated approach in realising optimal infant feeding practices, and health and developmental outcomes. Such an integrated approach will necessitate intra-prioritisation of interventions, essentially an intervention hierarchy. A draft and ‘work in progress’ decision tree has been proposed by the WHO⁹³ to prioritise interventions against context-specific criteria for use by different levels of decision maker. The available options and contextual factors to be reflected in the tool are outlined in table 12. Such a tool would need to answer what is needed (nutritional considerations) and how to deliver it, and would be used to;

- *Guide thinking about options so that they are evidence-based*
- *Advocate and/or use as a planning tool*
- *Aid in population-based decisions*
- *Guide decisions about subsidies*

Table 12 Available options and contextual factors to be reflected in the tool;

Available Options	Contextual Factors
<ul style="list-style-type: none"> • <i>Local foods;</i> • <i>Local foods with amylase;</i> • <i>Micronutrient powders;</i> • <i>Micronutrient powder with amylase;</i> • <i>Nutributter;</i> • <i>Fortified complementary foods;</i> • <i>Conditional cash transfers;</i> • <i>Other.</i> 	<ul style="list-style-type: none"> • <i>Breastfeeding and use of local foods throughout the framework;</i> • <i>Age;</i> • <i>Seasonality;</i> • <i>Consideration of foods available at the household versus what is given to the young child;</i> • <i>Food distribution at the household level;</i> • <i>Targeting (geographic based on poverty/food insecurity levels);</i> • <i>Cultural/gender considerations;</i> • <i>Delivery mechanisms</i>

There are essentially three scales at which an intervention can be introduced to improve feeding practices; individual, group, and population, and there are planning implications for each of these in terms of their associated requirements. Likewise, the type (basic versus technical) of intervention will also have important planning implications. CF is part of a continuum of linked intervention areas in the lifecycle approach⁹⁴, including maternal nutrition, support for mothers and caregivers, exclusive and continued breastfeeding, micro-nutrient supplementation, psychosocial stimulation, intra-household food distribution and dynamics, feeding and care during and after illness, and illness prevention and control. Likewise, public health professionals are only part of a complex and interrelated array of state, non-state, and commercial actors which need to be considered when driving the protection, support and promotion of optimal feeding practices in emergencies.

By nature, emergencies situations can be volatile and change rapidly, requiring ongoing monitoring to ensure the appropriateness of intervention response. The temporal element can result in an acute situation becoming chronic, with the associated complexities, considerations, and requirements for nutritional intervention shifting to management within a chronic framework. There is a real need to differentiate between short term and longer term interventions, and the aforementioned concerns over the potential long-term impacts that a response may have on CF practices necessitates the longer term AFASS of interventions be explored, as well as how AFASS criteria might be defined and implemented in an acute situation.

A *CFE module* is therefore only part of a much wider intervention approach and its position within the existing array of resources and conceptual and management frameworks for IFE needs to be carefully considered. The implications of the current gaps in CFE guidance on the governance of such a module will necessitate the engagement of operational agencies in the development and dissemination of specific CFE guidance to address the gaps first, followed by a *CFE module* to support the practical implementation of that guidance. It is crucial for the governance of this module to capitalise on any synergies that can facilitate its rollout and uptake. Further, the role of commercial enterprise, social partners, education authorities, mass media, and international organisations will need to be incorporated in the module's approach, as well as addressing both planning and implementation components. These are critical considerations when developing *CFE module*, and the appropriateness, pragmatism, and accessibility of the module will determine its ultimate value in an emergency.

5. Conclusion and Recommendations

IFE is a complex and constantly evolving issue, and the longstanding concerns surrounding CF are only escalated further by the demands of CFE; the medicalisation and commercialisation of IFE raising further issues such as inequity, accessibility, suitability, and sustainability. The intricate challenges of ensuring the nutritional wellbeing of infants and young children in emergency situations and the diverse nature of emergency situations will necessitate a practical, flexible and responsive approach. The overall question of *'What is now needed to fill the guidance gap?'* becomes *'How best to consolidate, optimise, update and synergise existing resources and frameworks into specific CFE guidance and training materials?'*

It is clear that there is a wealth of good quality information currently in existence, but specific CFE guidance and training will contribute to the body of documentation by providing a centralised CFE resource that fully addresses all current issues and takes advantage of empirical advances. The rollout of such CFE resources will need to be fully integrated into the existing body of documentation, and any synergies with other initiatives identified to facilitate such a process.

For such a CFE resource to be effective, it will need to have global application, recognise contextual and cultural differences, and fully equip carers, staff, and agencies to practically implement CFE guidance in the field. Equally important, guidance must use a lifecycle approach, view mother and child as an intimate unit, account for psycho-social and economic impacts, consider potential long-term implications that a response may have on CF practices, and be acutely aware that infants and young children are highly vulnerable not only to malnutrition, but to the marketing forces which undermine optimal feeding practices;

“There is a need for standards for product formulation which may require collaboration with the private sector. Any collaboration however needs to be carried out in such a way that conflicts of interest are minimized.... efforts must benefit public health and be compliant with [the Code]”⁹⁵

Such CFE guidance and training will make a significant contribution to fulfilling the triad governing optimal CF and CFE; providing essential information to meet the practical, nutritional, and functional prerequisites. Extreme situations may necessitate extreme behaviours, and the real challenge will be how to translate and operationalise the evidence base into pragmatic CFE guidance which can flexibly accommodate the context-specific and volatile nature of emergencies. ***The diverse nature and impact of emergencies and the complex interaction of influences on feeding practices ultimately necessitates a non-prescriptive approach to CFE by all parties concerned; an approach that not only enables and empowers mothers and caregivers to feed and care for their children, but in any practice or intervention, has the interests of the child as the highest consideration.***

5.1 Way Forward; Optimise, Synergise, Innovate

The IFE Core Group, through the development of previous modules on IFE, has experience in developing content where there is a gap in guidance. Specifically, in the absence of definitive guidance, content was included on managing severe malnutrition in infants under 6 months of age in response to an identified need by operational agencies and through an expert review process. In the context of CFE, there is a wealth of information to draw upon, optimise and develop synergies, but considerable gaps in the consolidation and application of this content to the emergencies context. Furthermore, there is currently a gap in strategy to accommodate CF in initiatives to manage acute malnutrition, and a lack of clear criteria for the use of fortified products. To move this forward, the development of a CFE module could help to consolidate current materials for the emergencies context, using field experiences to inform challenges and needs, and innovate to fill gaps. Such an undertaking by the IFE Core Group to develop a CFE module would require an interagency collaborative effort with:

- *Identification of a technical lead agency within/to join the IFE Core Group to lead the initiative*
- *Formation of a steering group that would include operational NGOs, and UN agencies implementing emergency programmes, IYCF technical expertise to guide the CFE module development*
- *Systematic and critical review of CF resources using framework proposed by this scoping review; enabling identification of the specific gaps that the CFE module will address and facilitate consolidation of existing resources (Phase II)*
- *Expert peer review of material where there is a gap in guidance, including consensus of a working definition for food used in CF (Phase III)*
- *Ensure positioning of the CFE module within the wider context of infant and young child feeding strategies, malnutrition management and humanitarian response (Phase IV)*
- *Field testing (Phase V)*

6. References and Notes

- ¹ 2002 Global Strategy for Infant and Young Child Feeding UNICEF/WHO; WHO, 2003
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