INFANT AND YOUNG CHILD FEEDING IN CONTEXT OF DISASTERS: OPTIMISING THE PRACTICES IN RESOURCE-LIMITED SETTINGS

PROF ALICE NTE
Department of Paediatrics, University of Port Harcourt Teaching Hospital, Port Harcourt.
PROF ALICE NTE
Department of Paediatrics and Child Health, Faculty of Clinical Sciences, College of Health Sciences, University of Port Harcourt.
E:mail: alicernte@uniport.edu.ng and alicernte@yahoo.com
Tel. No. 08033410046

Abstract

Globally the incidence of natural disasters attributable to global warming and climate change is increasing but is more and severer in resource-limited countries. Nigeria, a resource-limited country, experienced an unprecedented flooding which affected over 21 States and caused a devastation that qualified it as a natural disaster between July and October, 2012. During and after such disasters, the most vulnerable victims are under-fives with their major health problems being malnutrition, diarrhoea and pneumonia. Globally, in 2010, malnutrition was reported to be an underlying factor in 35% of the estimated 7.6million under-five deaths. Although preventable by optimal infant and young child feeding practices, malnutrition has remained an important risk factor for and determinant of the severity of other diseases.

The WHO recommended infant and young child feeding practices consist of exclusive breastfeeding for 6 months and from 6 months, complementary feeding with appropriate locally available foods while continuing breastfeeding till the child is aged at least 2 years. Thus in both emergencies and normal times, donated or subsidized supplies of breastmilk substitutes should be rejected and all feeding practices should be compliant with the provisions of the International Code of Marketing of Breastmilk Substitutes and its subsequent relevant World Health Assembly Resolutions.

Breastfeeding is central to optimal infant and young child feeding and provides both nourishment and protection. Although a natural process, mothers require support to successfully breastfeed especially in difficult circumstances hence the need to train relief workers in the skills to support optimal infant and young child feeding practices.

Key words: Optimising Infant and young child feeding practices, emergencies, Nigerian floods, resource-limited.

INTRODUCTION

Globally, under-five deaths declined from 12.4 million in 1990 to 7.6million in 2010 because of the application of several low cost, evidence-based and effective interventions especially in middle and low income countries (resource-limited settings) which contribute significantly to these deaths.[1-4] Among these interventions, breastfeeding reduces under-five deaths by 13% and specifically from the major causes - pneumonia, diarrhoea and malnutrition.[1-5] However, in spite of efforts to improve infant and young child feeding practices through the adoption of the International Code of Marketing of Breastmilk Substitutes, the subsequent relevant World Health Assembly Resolutions and the Baby Friendly Hospital Initiative, poor feeding practices have persisted in several countries necessitating the inclusion of the goal of reducing extreme malnutrition in the Millennium Development Goals (Millennium Development Goal 1).[2,6-8] Furthermore, in spite of efforts to attain the MDGs, the 2011 MDG Report showed that 16% of people go hungry.[2] A review of the child nutrition indices in the 2012 State of the World's Children confirms the poor status of children in Nigeria and developing (resource-limited) countries (Table 1).[4]

Table 1: Baseline data on the nutritional status of under-fives in 2010.[4]

Parameters	World	Developing Countries	Nigeria
% Early initiation of breastfeeding	43	43	38
% of Babies who were exclusively breastfed for <6months	37	37	13
% of children (2006-2010) who were introduced to solid, semi-solid or soft foods (6-8months)	60	60	75
% of children (2006-2010) who were breastfed at age 2(20-23months)	55	56	32
% under-fives (2006-2010) suffering from Moderate and severe Underweight (WHO)	16	18	23
% under-fives(2006-2010) suffering from Severe Underweight (WHO)	9	9	9
% under-fives (2006-2010) suffering from Moderate and severe wasting (WHO)	10	10	14
% under-fives (2006-2010) suffering from moderate and severe stunting (WHO)	27	29	41

Aimed at improving, through optimal feeding, the nutritional status, growth and development, health, and thus the survival of infants and young children, the World Health Organisation and United Nations Children's Fund in 2002, adopted the Global Strategy on Infant and Young Child Feeding(the Strategy).[9-10] The Strategy's specific objectives are:

- to raise awareness of the main problems affecting infant and young child feeding, identify approaches to their solution, and provide a framework of essential interventions;
- to increase the commitment of governments, international organizations and other concerned parties for optimal feeding practices for infants and young children;
- to create an environment that will enable mothers, families and other caregivers in all circumstances to make – and implement –informed choices about optimal feeding practices for infants and young children.

The Strategy, building on the Baby Friendly Hospital Initiative set out 5 targets which are:

- to develop and implement a comprehensive policy on infant and young child feeding
- to ensure that health and other relevant sectors protect promote and support exclusive breastfeeding for six months and continued breastfeeding up to two years of age or beyond
- to promote timely, adequate, safe and appropriate complementary feeding with continued breastfeeding
- to provide guidance on feeding infants and young children in exceptionally difficult circumstances (malnutrition, low birth-weight, emergencies, and HIV infection)
- to consider what new legislation may be required to give effect to The Code

The Strategy thus recognises exceptionally difficult circumstances in which mothers need guidance to ensure optimal infant and young child feeding. One of these conditions, emergencies, is the subject of this paper.

2. Meanings of Emergencies, Disasters, Exceptionally difficult circumstances, and Resource- limited settings

Wikipedia,[11] the free encyclopedia, defined an *emergency* as a situation that poses an *immediate risk* to health, life, property or environment. It noted that *most emergencies require urgent intervention to prevent a worsening of the situation.... although in some situations, mitigation may not be possible and agencies may only be able to offer palliative care for the aftermath.* Emergencies may be self-evident (such as a natural disaster that threatens many lives), or, as in many smaller incidents, require the subjective opinion of an observer (or affected party) in order to decide whether it qualifies as an emergency. To identify an occurrence as an emergency requires the use of some preset criteria determined by the agencies charged with the responsibilities of planning for and managing the emergency. Using this definition therefore the magnitude of devastation caused by the almost nationwide flood that occurred in Nigeria qualified the situation to be termed an emergency.

A *disaster,*[11] on the other hand, is defined as *a* natural *or* man-made *(or technological)* hazard *resulting in an event of substantial extent causing significant physical damage or*

destruction, loss of life, or drastic change to the environment. It is also defined as any tragic event stemming from events such as earthquakes, floods, *catastrophic* accidents, fires, *or* explosions. It can cause damage to life and property and destroy the economic, social and cultural life of people. Disasters and associated deaths are commoner in developing countries (middle income or low income countries commonly termed resource-limited settings) where at least 95% of disaster related deaths occur probably due to poor planning and mitigations activities. During emergencies displaced persons are sheltered in temporary camps often characterized by insecurity and poor sanitation, dirty water, scant food and improper shelter. The additional extreme weather conditions, lack of skilled birth attendant and medical care, and premature birth increase risks further in such settings.

Exceptionally difficult circumstances are circumstances that pose major challenges to the physical and mental health of affected children. In the context of infant and young child feeding the Global Strategy identified the following exceptionally difficult circumstances- children who are malnourished, low birth weight, delivered by HIV infected women, children in emergencies, and children in special situations- e.g. orphans. The Strategy notes that families in *difficult situations/circumstances* require special attention and practical support to be able to feed their children adequately. In such cases the likelihood of not breastfeeding increases as do the dangers of artificial and inappropriate complementary feeding.[9,10]

Resource-limited settings/countries: This is a term used to describe low income (gross national income [GNI] per capita of US$1,005 or less) and lower middle income countries (GNI between US$1,006 and US$3,975) as classified by the World Bank.[11] They are also called developing countries a term used for convenience and not intended to imply that they have reached their terminal points in development. This is in contrast to developed countries defined by Kofi Annan, former Secretary General of the United Nations, as countries that allow all their "citizens to enjoy a free and healthy life in a safe environment." There are currently 157 developing countries by the April 2012 listing of the International Monetary Fund (155 countries) and 2 others, with Nigeria being one of them. It is estimated that about 64% Nigerians live below the $1.25/day poverty line.[4] Thus with the flood that affected over 21 States and devastated the cities and farmlands, the impact on the economy and social life of the people cannot be imagined.[12-14]

3. The Nigerian 2012 Floods and their consequences

Nigeria, with Infant and under-five mortality rates of 88 and 143/1000 live births respectively is a low middle income country and therefore a resource-limited setting.[4] Child health indices in the country especially in the rural areas are poor as indicated in the 2008 Demographic and Health Survey.[15] Thus, when in 2012, Nigeria experienced devastating floods consequent on heavy rain falls in 21 States from the North to the Niger Delta region, the resultant impact of this disaster on an already impoverished population cannot be overemphasized.[12-14] The reported impact of these floods include:[12-14]

- Impending food shortage: Apart from destroying dwelling and religious places, the flood destroyed over 5000 farmlands resulting in the concerns that there may be impending food shortage in the country. The Minister of Environment, Hajia Hadiza Mailafia, noted that consequently Nigeria was experiencing a *national emergency* and that consequently *food supply* may be a challenge.
- Health hazards: With flooding some water-borne diseases such as cholera were expected to occur in the refugee camps especially with the poor hygiene practices of displaced persons. Dr. Abel, Medical Director of Sunshine Infirmary, noted that "the country is being flooded and the probability is that the source of water consumed by many of our compatriots would be polluted and this would definitely result in cholera and other water-borne diseases." He added that the effect of the pollution would have been minimal if the people were ordinarily hygienic "but you and I know that many of our people, especially in the rural areas, have little respect for hygiene and this is why there is likely going to be an outbreak of cholera unless the government moves in to arrest the trend." He thereafter called on the government to move in and save the rural poor and those displaced by the floods and in camps from the scourge of cholera by providing them with hygienic environment which would help them to ward off cholera. He noted that "If we do not manage the matter very well, we are likely going to have a situation in which there will be more deaths from the after effect of flooding than from flooding itself." In deed cholera and other episodes of diarrhoeal diseases occurred in several camps across the country.
- Collapse of infrastructure: The floods resulted in the destruction of a large part of the nation's infrastructure. Many communities had their electricity supply cut off as a result of floods which washed away electricity poles and cables. A number of masts belonging to telecommunication organisations were also destroyed. Many school buildings, bridges and roads were washed away. As a result of the magnitude of devastation, State governments requested for the Federal government's assistance in the mitigation of the impact of the flood since the scope of devastation was beyond their capacity.

- Poverty: The flood led to the displacement of persons, destruction of farmlands and social infrastructure resulting in an increased risk of poverty. This will contribute to an increase in the proportion of Nigerians living below poverty line and negatively impact on the government's poverty reduction programme as resources will diverted to address the needs of displaced persons.

It is therefore evident that with the floods, Nigerians have been plunged deeper into poverty and therefore will require support to mitigate the adverse effects on their survival. One of the areas of support is in ensuring adequate nutrition for their most at risk infants and young children through the implementation of appropriate infant and young child feeding practices.

4. Why focus on Infant and Young Child Feeding during disasters?

The Action file for the 2009 World Breastfeeding Week Celebration[16] whose theme was- *Breastfeeding – a vital emergency response- are you ready* provides some insight into the impact of emergencies on child nutrition and survival. It noted that: *'in emergencies, infants and young children are especially vulnerable to malnutrition, illness and death.* It cited some examples to support this position-

- *Published total mortality rates for infants under one year of age in emergencies are much higher than at ordinary times, ranging from 12% to 53%.*
- *In a large-scale therapeutic feeding programme in Niger in 2005, 95% of the 43,529 malnourished cases admitted for therapeutic care were children less than two years of age.*
- *In a therapeutic feeding programme in Afghanistan, the mortality rate was 17.2% amongst infants under 6 months of age admitted for therapeutic care.*
- *During the first three months of conflict in Guinea-Bissau in 1998, the death rate amongst 9–20 month old non-breastfed children was six times higher than amongst the children of the same age-group who were breastfed.*

These findings reiterated the concerns expressed in the Global Infant and Young Child Feeding Strategy about the increased vulnerability of infants and young children during natural or human-induced emergencies.[9-10] The Strategy noted that interrupted breastfeeding and inappropriate complementary feeding heighten the risks of malnutrition, illness and mortality among children in such situations and that uncontrolled distribution of breastmilk substitutes in these settings could lead to early and unnecessary cessation of breastfeeding. The Celebration's objectives were: to:

- *reinforce the vital role that breastfeeding plays in emergency response worldwide.*
- *advocate for active protection and support of breastfeeding before and during emergencies.*
- *inform mothers, breastfeeding advocates, communities, health professionals, governments, aid agencies, donors, and the media, about how they can actively support breastfeeding before and during an emergency.*
- *mobilise action and promote networking and collaboration between those with breastfeeding management skills and those involved in emergency response.*

In view of the fact that the worsening global warming and climate change will increase the likelihood of emergencies such as severe floods, Nigerians should plan ahead to reduce the impact of such emergencies on their survival especially that of the most vulnerable- the under-fives.

5. Recommended feeding practices for infants and young children before and during emergencies

Recommendations on optimal Infant and Young Child feeding practices have been presented in several documents such as the International Code of Marketing of Breastmilk Substitutes and its subsequent relevant World Health Assembly Resolutions, the Innocenti Declaration and the Global Strategy for Infant and Young Child Feeding Strategy.[6-10] These documents have been adapted for use in Nigeria. From these documents, the following relevant information is available:

A. The International Code of Marketing of Breastmilk Substitutes:

- *All children, pregnant and lactating women have the right adequately nutrition, as a means of attaining and maintaining health;*
- *Breastfeeding is an unequalled way of providing ideal food for the healthy growth and development of infants; it forms a unique biological and emotional basis for the health of both mother and child; the anti-infective properties of breast-milk help to protect infants against disease; and there is an important relationship between breast-feeding and child-spacing;*
- *The encouragement and protection of breast-feeding is an important part of the health, nutrition and other social measures required to promote healthy growth and development of infants and young children; and breastfeeding is an important aspect of primary health care;*
- *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; all these products should accordingly be made accessible to those who need them through commercial or non-commercial distribution systems and should not be marketed or distributed in ways that may interfere with the protection and promotion of breast-feeding;

- *Inappropriate feeding practices lead to infant malnutrition, morbidity and mortality in all countries, and improper practices in the marketing of breast-milk substitutes and related products can contribute to these major public health problems;*
- *It is important for infants to receive appropriate complementary foods, usually when they reach six months of age, and every effort should be made to use locally available foods; and such complementary foods should not be used as breast-milk substitutes;*
- *There are a number of social and economic factors that affect breast-feeding, and governments should develop social support systems to protect, facilitate and encourage it, and should create an environment that fosters breast-feeding, provides appropriate family and community support, and protects mothers from factors that inhibit breast-feeding*
- *Infants in the early months of life are highly vulnerable*
- *There are risks involved in inappropriate feeding practices, including the unnecessary and improper use of breast-milk substitutes, the marketing of breast-milk substitutes requires special treatment, which makes usual marketing practices unsuitable for these products;*

These formed the basis of the recommended feeding practices for infants and young children which have been reiterated in other documents including their nationally adapted equivalents.

B. Subsequent Relevant World Health Assembly(WHA) Resolutions: To accommodate newer changes on Infant and Young Child Feeding, and strengthen the Code, the WHA adopted several relevant Resolutions one of which is WHA Resolution 47.5 of May 1994 which re-emphasized the superiority of breastmilk as the biological norm for the nourishment of infants, and that a deviation from this norm is associated with increased risks to the health of infants and mothers and urged the Director General to, among other things:

- *exercise extreme caution when planning, implementing or supporting emergency relief operations, by protecting, promoting and supporting breastfeeding for infants, and ensuring that donated supplies of breast-milk substitutes or other products covered by the scope of the International Code are given only if all the following conditions apply:*

(a) *infants have to be fed on breastmilk substitutes, as outlined in the guidelines concerning the main health and socioeconomic circumstances in which infants have to be fed on breastmilk substitutes;*

(b) *the supply is continued for as long as the infants concerned need it;*

(c) *the supply is not used as a sales inducement; develop, in consultation with other concerned parties and as part of WHO's normative function, guiding principles for the use in emergency situations of breastmilk substitutes or other products covered by the International Code which the competent authorities in Member States may use, in the light of national circumstances, to ensure the optimal infant-feeding conditions;*

C. The Global Strategy for Infant and Young Child Feeding: The Strategy re-iterated the value of breastfeeding –noting that *breastfeeding is an unequalled way of providing ideal food for the healthy growth and development of infants; it is also an integral part of the reproductive process with important implications for the health of mothers.* Thus, as *a global public health recommendation, infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health. Thereafter, to meet their evolving nutritional requirements, infants should receive nutritionally adequate and safe complementary foods while breastfeeding continues up to two years or beyond.*

- *Special attention and practical support is needed for feeding in exceptionally difficult circumstances. The circumstances where specific recommendations apply include infants less than six months of age who are malnourished, low-birth-weight infants, infants and children in emergencies, infants born to HIV-positive women, and children living in special circumstances, such as orphans and vulnerable children or infants born to adolescent mothers.* The Strategy noted that exclusive breastfeeding from birth was possible except for a few medical conditions, and that unrestricted exclusive breastfeeding resulted in ample milk production. It further noted that even though breastfeeding was a natural act, it was also a learned behaviour and *that virtually all mothers could breastfeed provided they have accurate information, and support within their families and communities and from the health care system.* They should also have access to skilled practical help from, for example, trained health workers, lay and peer counsellors, and certified lactation consultants, who can help to build

mothers' confidence, improve feeding techniques, and prevent or resolve breastfeeding problems. Furthermore, it recommended that since infants were particularly vulnerable during the transition period when *complementary feeding* begins, to ensure that their nutritional needs are met, complementary foods should be

- *timely* – meaning that they are introduced when the need for energy and nutrients exceeds what can be provided through exclusive and frequent breastfeeding;
- *adequate* – meaning that they provide sufficient energy, protein and micronutrients to meet a growing child's nutritional needs;
- *safe* – meaning that they are hygienically stored and prepared, and fed with clean hands using clean utensils and not bottles and teats;
- *properly fed* – meaning that they are given consistent with a child's signals of appetite and satiety, and that meal frequency and feeding method – actively encouraging the child, even during illness, to consume sufficient food using fingers, spoon or self-feeding – are suitable for age.

Appropriate complementary feeding, it noted, depended on accurate *information* and skilled support from the family, community and health care system and that inadequate knowledge about appropriate foods and feeding practices was often a greater determinant of malnutrition than the lack of food. Moreover, diversified approaches are required to ensure access to foods that will adequately meet energy and nutrient needs of growing children, for example use of home- and community-based technologies to enhance nutrient density, bioavailability and the micronutrient content of local foods.

The Strategy stated further that *families in difficult situations require special attention and practical support to be able to feed their children adequately. In such cases the likelihood of not breastfeeding increases, as do the dangers of artificial feeding and inappropriate complementary feeding. Wherever possible, mothers and babies should remain together and be provided the support they need to exercise the most appropriate feeding option under the circumstances.*

The Strategy in view of the increased risk of infants and children during natural or human-induced *emergencies* recommended that for the vast majority of infants emphasis should be on protecting, promoting and supporting breastfeeding and ensuring timely, safe and appropriate complementary feeding and that for the small number of infants who have to be fed on breast-milk substitutes, suitable substitutes, procured, distributed and fed safely as part of the regular inventory of foods and medicines, should be provided.

6. Implementing these recommendations in the context of emergencies

- Having set the guidelines, and recognizing the challenges posed by poor programme implementation, the Strategy[9] recommended as follows:
- *Mothers, fathers and other caregivers should have access to objective, consistent and complete information about appropriate feeding practices, free from commercial influence. In particular, they need to know about the recommended period of exclusive and continued breastfeeding; the timing of the introduction of complementary foods; what types of food to give, how much and how often; and how to feed these foods safely.*
- *Mothers should have access to skilled support to help them initiate and sustain appropriate feeding practices, and to prevent difficulties and overcome them when they occur. Knowledgeable health workers are well placed to provide this support, which should be a routine part not only of regular prenatal, delivery and postnatal care but also of services provided for the well baby and sick child.*
- *Community-based networks offering mother-to-mother support, and trained breastfeeding counsellors working within or closely with, the health care system, also have an important role to play in optimal infant and young child feeding. Research has shown that father's companionship as family providers and caregivers enhance breastfeeding and should be encouraged to provide this support*
- *In emergencies, Humanitarian Aid Workers should be trained in basic support for breastfeeding mothers and help to enable others or foster mothers to re-lactate.*
- *Emergency preparedness arrangements should be established, including asking lactation counsellors to be available to go to emergency situations to help aid workers care for babies.*
- Additionally, during emergencies, the following recommendations by the Infant and Young Child Feeding in Emergencies (IFE)[17] should be implemented:

Ensure that the nutritional needs of the general population are met, giving special attention to the access to commodities suitable as complementary foods for young children. In situations where nutritional needs are not met, advocate for a general ration, appropriate in quantity and quality. In situations where supplementary foods are available but sufficient food for the general population is not, consider pregnant and lactating women as a target group.

- *Where nutrient rich foods are lacking and until they become available, multiple micronutrient supplements should be given to pregnant and lactating women, and to children aged 6-59 months. In malaria endemic areas,*

*routine supplementation with iron and folic acid containing preparations is **not** recommended in infants and young children because of the uncertainty of their effectiveness.*

- *Complementary feeding for older infants (over six months) and young children (12-<24 months) in emergencies may comprise:*
  - *basic food-aid commodities from general ration with supplements of inexpensive locally available foods*
  - *micronutrient fortified blended foods, e.g. corn soya blend, wheat soya blend, (as part of general ration, blanket or supplementary feeding)*
  - *additional nutrient-rich foods in supplementary feeding programmes.*
- *In all situations, special attention should be given to the nutritional value of food rations distributed to infants and young children whose particular nutritional requirements are often not covered by the general ration. Nutrient dense foods for children, whether fortified or non-fortified, should be chosen taking into account possible micronutrient deficiencies.*

The roles of different stakeholders in implementing optimal infant and young child feeding during emergencies as suggested by the World Alliance on Breastfeeding Action in its 2009 World Breastfeeding Week Action folder are shown in Table 2:[15]

	Emergency Preparedness	**Emergency Response**	
		On The Ground	**Support From Afar**
Government/ National policy makers **National breastfeeding**	Develop/strengthen national infant and young child feeding policy and emergency preparedness plans/policies to include IFE. • Enact strong national *Code* legislation. • Translate key resources. • Orient and train key staff on IFE. • Coordinate/link to networks of expertise. Make plans to prevent and handle donations of BMS, bottles and teats in emergencies. • Give the media clear guidelines on IFE. • Include breastfeeding promotion, protection and support in emergencies for the general public. Undertake orientation and further training on infant feeding in emergencies.	Ensure that basic support for breastfeeding mothers is integrated cross all sectors of emergency response. • Prevent/handle donations of BMS, bottles and teats. • Monitor and report Code violations. Get involved in early protection and support of breastfeeding. For example - training community counsellors and emergency relief staff, individual counselling, mother to mother support, phone line support.	Watch out for appeals for donations of BMS, bottles and teats, and act to stop them. • Identify agencies that support breastfeeding in emergencies and offer them your help.

advocates/ counsellors/ trainers	• Identify and network with agencies, local emergency committees, and communities, involved in emergency response. • Organise a seminar on 'helping mothers and babies in emergencies' for emergency workers. • Create a network of experienced staff available for training and/or deployment in emergencies. • Organise, with government and NGO allies, a press conference or media event on IFE. • Update your website with key links to resources.	• Adapt materials and key messages to the context of the emergency.	• Respond to negative stories and/or appeals for donations in the media.

Aid agencies/ NGO and UN Staff	Integrate Operational Guidance on IFE into agency guidance and policies. • Orientate all emergency response staff on IFE. • Identify networks of expertise, e.g. breastfeeding counselling, in countries/regions of operation. • Enrol health/nutrition staff in IFE training. • Communicate a clear plan to all staff on preventing/handling donations of BMS, bottles and teats. • Lobby the government and donors to include breastfeeding support in emergency action plans.	Integrate IFE into minimum response across sectors –nutrition, health, shelter, protection, etc. • Implement skilled programmes to protect support and promote breastfeeding. • Act to prevent/handle donations of BMS, bottles and teats.	Support 'on the ground' staff by not soliciting or accepting donations of BMS. • Support fund raising and send money instead of BMS.

Health professionals	Increase your breastfeeding support skills and follow a breastfeeding counselling training course, or at minimum, an IFE training course for health/nutrition workers in emergencies *(see Module 2 on IFE).* • Implement the BFI (in hospitals and in community health services). • Advocate for updated training on Breastfeeding Counselling and HIV and Infant Feeding Counselling at national /local level. • Gather information on what support is available for breastfeeding at national / local level (lactation consultants, peer c ounsellors, mother to mother support groups). • Organise training/a seminar for colleagues on IFE.	Ensure that mothers and their children are kept together. • Implement the 10 Steps to Successful Breastfeeding in appropriate reproductive, maternal newborn and child health programmes in emergencies. • Ensure that skilled breast-feeding and infant feeding support is available for mothers antenatally, at delivery, and post natally for 2 years. • Ensure that skilled childbirth attendance is available for pregnant women. Ensure that breastfeeding is fully supported for HIV-infected mothers unless AFASS conditions for replacement feeding are all in place.	Be vigilant for local appeals of donations of infant formula, other BMS, and bottles/teats to emergencies, and act to stop them.

Mothers / Caregivers Communities	Exclusively breastfeed your baby until s/he is 6 months of age. Continue to breastfeed your baby to 2 years or beyond. • Encourage your local mother support group(s) to discuss emergency preparedness. For example, plan ways that the group could staff a safe place for mothers and provide mother-to-mother support to breastfeeding if large numbers of people are made homeless. • Make contact with local emergency authorities and community groups and tell them about IFE.	Continue to practice optimal breastfeeding. • Offer support to other mothers who are having difficulties or to mothers of newborns in anemergency. • Consider wet nursing if needs are identified, e.g. orphans, very ill mothers. • Help organise safe places for mothers with mother-to-mother support for breastfeeding.	Identify agencies that support breastfeedingin emergencies and fundraise for them.

	• Be prepared to face emergencies and raise awareness about IFE among community groups (e.g. faith groups, youth groups, service organisations). • Emphasise the need to provide safe spaces for mothers and youngchildren. • Make links with mother support organisations. • Lobby government to include breastfeeding support in emergency action plans.	Help to counteract the disruption of family and support networks in an emergency. • Create safe spaces for mothers/babies. • Anyone involved in any part of an emergency response can help – from firefighters to supply drivers to security staff.	Are you part of a community that fund raises or adopts 'causes'? Why not opt for breastfeeding emergencies and fund raise/advocate?

7. Challenges to implementing optimal infant and young child feeding practices during emergencies

Several challenges exist to ensuring that infants and young children are appropriately fed as recommended by the Global Strategy on Infant and Young Child Feeding especially during emergencies.[9,10, 17] For children on complementary foods, the major challenge is securing the conditions that will allow optimal complementary feeding because of lack of food, water, sanitation and basic hygiene during emergencies.[9,10,12-14, 17] Additionally when there are shortages of food supply children tend to be neglected by adults hence the need to prioritize infant and young child feeding in emergency situations. For children aged 0-2 years, breastfeeding should be supported, protected and promoted. The challenges to achieving this include common misconceptions, the risks of artificial feeding, and donations. These will be discussed briefly:

a. Artificial feeding – high risk for all infants: Artificial infant feeding has been associated with increased morbidity and mortality from diseases such as diarrhoea and pneumonia. The situation is worse during emergencies such as flooding because of poor access to potable water, poor personal and environmental hygiene and increased risk of malnutrition. Furthermore, unrestricted access to breastmilk substitutes results in a high spill-over effect with resultant increase in morbidity and mortality among babies who should have been breastfed. In a programme for the prevention of mother-to-child transmission of HIV in Botswana, it was noted that the use of infant formula increased national under-five mortality rate by at least 18% compared to previous years and that non-breastfed infants were *50 times* more likely to need hospital treatment than breastfed infants, and much more likely to die. Thus infants on replacement feeding require specialized support and close monitoring which are unlikely to be available during emergencies.

b. Donation of free infant formula, teats and feeding bottles: During emergencies, organizations and individual tend to provide infant formula, teats and feeding bottles to support the victims as was done during the Nigerian floods. However, because these donations do not ensure a sustainable access to the formula and are associated with other risks, they should be used only if it is acceptable, feasible, affordable, safe and sustainable and for the few infants who really require them. It is important to ensure that infant feeding industries do not view emergencies as an 'opportunity' to enter into or strengthen markets or as a public relations exercise. It is important also to ensure that violations of the Code and subsequent relevant WHA Resolutions are avoided during emergencies. To ensure compliance with this position Infant and young child Feeding in Emergency(IFE) made the following recommendations:[1]

- *Donated (free) or subsidised supplies of breastmilk substitutes (e.g. infant formula) should be avoided. Donations of bottles and teats should be refused in emergency situations. Any well-meant but ill-advised donations of breastmilk substitutes, bottles and teats should be placed under the control of a single designated agency.*
- *The decision to accept, procure, use or distribute infant formula in an emergency must be made by informed, technical personnel in consultation with the*

coordinating agency, lead technical agencies and governed by strict criteria.

- *Breastmilk substitutes, other milk products, bottles and teats must never be included in a general ration distribution. Breastmilk substitutes and other milk products must only be distributed according to recognised strict criteria and only provided to mothers or caregivers for those infants who need them. The use of bottles and teats in emergency contexts should be actively avoided.*

c. Myths about breastfeeding during emergencies: Some myths exist concerning breastfeeding during emergencies. They include:[16]

- Malnourished mothers cannot breastfeed: Moderate maternal malnutrition has little or no effect on milk production. Mothers can continue to breastfeed even at the expense of their body stores. Thus in emergencies, mothers need additional foods, including micronutrients to replenish their stores. They also need encouragement to continue to breastfeed frequently.
- "Stress prevents mothers from producing milk: Stress does not prevent production of milk but may temporarily interfere with its flow. Breastfeeding mothers are reported to have lower stress hormone levels than non-breastfeeding mothers but during emergencies, conditions that will reduce stress should be created to enable mothers breastfeed. These conditions include the creation of a quiet corner where the mother-baby pair can be secure and breastfeed. Others include reassurance from other women, keeping mothers and babies together, listening to mothers' special needs – and making sure the child keeps suckling so that milk flow continues.
- "Once a mother stops breastfeeding, she can't restart: Re-lactation is possible in all mothers and grandmothers can re-lactate and feed their grand children. Thus in emergencies, mothers should be offered support for breastfeeding and re-lactation.
- "When a woman has been raped, she cannot breastfeed: The experience of violence neither affects the quality of milk or a mother's ability to breastfeed. However, all traumatised women should be given special attention and support to enable them breastfeed.

8. Conclusion:

Malnutrition remains a major contributor to under-five morbidity and mortality especially in resource-limited settings. Optimal infant feeding practices as recommended by the Global Strategy for Infant and Young Child Feeding are applicable in all situations. However, in exceptionally difficult circumstances, including disasters, mothers need special support and attention to implement optimal infant and young child feeding practices to ensure the optimal nutrition, growth, development and survival of the children. Health and other stakeholders should support optimal infant and young feeding especially in emergencies.

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