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**“Breast feeding in crisis situations (massive displacements, natural disasters and war zones). Review of literature and guidelines for health workers in the field.”**

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## Introduction

### Disaster and Displacement

‘Disaster’ is defined as a crisis situation causing wide spread damage which far exceeds our ability to recover. Thus, by definition, there cannot be a perfect ideal system that prevents damage, because then it would not be a disaster. It has to suffocate our ability to recover. Only then can it be called a ‘disaster’.

Disasters are not totally discrete events. Their possibility of occurrence, time, place and severity of the strike can be reasonably and in some cases accurately predicted by technological and scientific advances. It has been established there is a definite pattern in their occurrences and hence we can to some extent reduce the impact of damage though we cannot reduce the extent of damage itself. <sup>1</sup>

Types of Disaster

Disasters are mainly of 2 types,

1. Natural disasters. Example – earthquakes, floods, landslides, etc.
2. Man made disasters. Example – war, bomb blasts, chemical leaks, etc.

The phases of all disasters, natural or man-made, are the same. The disasters often differ in quantity of damage caused or in quality of the type of medical consequences. For example earthquakes cause a lot of physical injury and fractures, floods cause drowning, deaths and infections, chemical leaks cause toxic manifestations, etc. <sup>1</sup>



### Environmental Health and Population Displacement

Certain disasters can interfere with the functioning of water and sewage systems as well as provision of gas and electricity. The loss of these everyday services can increase the risk for sickness even in uninjured people. The most serious consequences of natural disasters are related to mass population displacements. Many people cannot stay in their homes because

the buildings are so badly damaged that they are structurally unsafe. Others refuse to stay in otherwise stable buildings because they fear that they might collapse. While this often occurs following violent storms, it is particularly the case after earthquakes, when potentially damaging aftershocks commonly occur. Placing large numbers of people in crowded shelters poses a risk for additional health problems. It can be difficult to provide so many people with clean drinking water, sufficient waste disposal, and safe, nutritious food. This temporary living situation can also increase the chances for outbreaks of certain diseases. It is important to remember that only those diseases that are found in the affected community during pre-disaster times pose a danger to displaced populations after a disaster occurs. When large numbers of people gather in unsheltered settings, such as parks or open fields, there is an even greater risk of illness. This is because these areas often do not have enough sanitary services. Clean drinking water may have to be trucked into the area, and prompt attention must be directed to providing facilities to handle human waste. The ability to receive, safely store, and prepare food is also a concern for the health of the displaced population. Flies, mosquitoes, and rodents that might be carrying diseases that can cause illness in humans add to the risk of living in an unsheltered setting.<sup>2</sup>



Massive displacement of people within countries and across borders has become a defining feature of the post-cold war world. It is also a major feature of human insecurity in which genocide, terrorism and egregious human rights violations wreak havoc on civilians. The underlying causes of mass displacement are conflicts over power, wealth and resource sharing.<sup>3</sup>

Widespread displacement is often a major effect of conflict, causing large population groups to become vulnerable to disease and malnutrition as well as social disruption. In Liberia, it is estimated that at one time or another 80 percent of the population has been displaced. In Afghanistan, WFP estimates that approximately 3 million people are refugees or displaced, out of a total population of 17 million (1995). Displacement can be to another country in which case people are viewed as refugees<sup>6</sup>. Within their own country, people can be displaced and live in camps or urban centres; these may be within their home area or outside. In addition, there may be returnees, refugees who on their own or with the support of the United Nations High Commission for Refugees (UNHCR) are repatriated to their country<sup>5</sup> but not necessarily to their original home areas.



The impact of displacement on availability and access to food, nutritional status and health, depends on many factors. Frequent displacement reduces people's ability to support themselves and can increase the trauma and stress within the community which may adversely affect the caring practices of children. <sup>4</sup>

**The fact**

Malnutrition increases dramatically and kills most rapidly, in emergencies. Most children do not die due to conflicts or natural disasters themselves, but rather due to resulting food shortages, lack of safe water, inadequate health care, and poor sanitation and hygiene. The vast majority of children succumb to measles, diarrhoea, respiratory infections and severe malnutrition.

Micronutrient deficiencies can easily develop during an emergency or worsen if they are already present. This happens because livelihoods and food crops are lost; food supplies are interrupted; diarrhoeal diseases break out, resulting in malabsorption and nutrient losses; and infectious diseases suppress the appetite whilst increasing the need for micronutrients to help fight illness. <sup>7</sup>

**Protection from malnutrition**

The dietary structure of children living in the disaster area is not ideal. Although, the intakes of energy and protein supporting foods could meet the requirements, the diet lacks meats, poultries, dairy products, legume products, aquatic products and vegetables. The vitamin A, vitamin D, iron and zinc deficiencies are of a high prevalence in the disaster area. <sup>8</sup>

Emergencies can strike anywhere, at any time. But infants and young children most vulnerable to the malnutrition and disease that follows can also be the best protected, with the fortification of nutrients and antibodies inherent in breast milk. Mothers must be given priority in order to provide for their children and to ensure it is a priority during an emergency response. <sup>9</sup>



## Breastfeeding



Breastfeeding gives children the best start in life. It is estimated that over one million children die each year from diarrhoea, respiratory and other infections because they are not adequately breastfed. Many more children suffer from unnecessary illnesses that they would not have if they were breastfed. Breastfeeding also helps to protect mothers' health.

The Programme for the Control of Diarrhoeal Diseases has long recognised the need to promote breastfeeding to prevent diarrhoea in young children. More recently it has become clear that breastfeeding is important also in the management of diarrhoea, to prevent dehydration, and to promote recovery.

The World Health Organization and UNICEF recommend exclusive breastfeeding from birth for the first 4-6 months of life, and sustained breastfeeding together with adequate complementary foods up to 2 years of age or beyond. However the majority of mothers in most countries start giving their babies artificial feeds or drinks before 4 months, and many stop breastfeeding long before the child is 2 years old. The common reasons for this are that mothers believe that they do not have enough breast milk, or that they have some other difficulty breastfeeding. Sometimes it is because a mother is employed outside the home, and she does not know how to breastfeed at the same time as continuing with her job. Sometimes it is because there is no-one to give a mother the help that she needs, or because health care practices and the advice that she receives from health workers does not support breastfeeding.<sup>10</sup>

## Epidemiology

Exclusive breastfeeding for the first six months of a child's life is the best and most cost-effective intervention to provide newborns with the nutrients they need, and to improve infant and children survival rates.

On the occasion of World Breastfeeding Week 2008 (August 1-7), national and international health experts emphasize that **no gift is more precious than breastfeeding**, yet barely one in three infants is exclusively breastfed during the first six months of life

Every year, as much as 55% of infant deaths from diarrhoeal disease and acute respiratory infections may be the result of inappropriate feeding practices. Furthermore, health officials from the Pan American Health Organization say that complementary feeding practices are frequently ill-timed, inappropriate and unsafe.

PAHO's Director reiterated that adequate nutrition, particularly during the first year of life, is a key, contributing factor for infants to better develop all their human potential. While there are encouraging trends in breastfeeding rates in a few countries, global data show that less than 40 per cent of infants under six months of age are exclusively breastfed today. This underachievement in turn contributes to the unnecessary deaths of over a million children each year, these are lives that could be saved if mothers and families were adequately encouraged and supported to breastfeed.<sup>11</sup>

One-fifth of infants were not breast-fed at all (220/1087). Muslim and displaced children were less likely to breast-feed; 59 % of Muslim displaced children never breast-fed. Among infants in sites visited by all four surveys, there was no change in the proportion ever breast-fed and a significant increase in duration of breast-feeding and exclusive breast-feeding between 1994 and 1997. Children were breast-fed for shorter durations in male absent households, in frontline communities, the RS, and households that did not receive remittances from abroad. Non-breast-fed children and those who breast-fed for less than 4 months were more likely to be malnourished, as were those with complementary foods added either before or after their sixth month of life. If relief agencies had promoted and supported breast-feeding, this might have avoided some of the increased malnutrition that occurred during the conflict.<sup>12</sup>

Regarding intelligence, a meta-analysis of 20 studies showed scores of cognitive function on average 3.2 points higher among children who were breastfed compared with those who were formula fed. The difference was greater (by 5.18 points) among those children who were born with low birth weight. Increased duration of breastfeeding has been associated with greater intelligence in late childhood and adulthood, which may affect the individual's ability to contribute to society.<sup>48</sup>

For the mother, breastfeeding also has both short- and long-term benefits. The risk of postpartum haemorrhage may be reduced by breastfeeding immediately after delivery, and there is increasing evidence that the risk of breast and ovarian cancer is less among women who breastfed.<sup>48</sup>

## Key facts

- Every infant and child has the right to good nutrition according to the Convention on the Rights of the Child.
- Undernutrition is associated with 35% of the disease burden in children under five.



- Globally, 30% (or 186 million) of children under five are estimated to be stunted and 18% (or 115 million) have low weight-for-height, mostly as a consequence of poor feeding and repeated infections, while 43 million are overweight.
- On average about 35% of infants 0 to 6 months old are exclusively breastfed.
- Few children receive nutritionally adequate and safe complementary foods; in many countries only a third of breastfed infants 6-23 months of age meet the criteria of dietary diversity and feeding frequency that are appropriate for their age.
- Optimal breastfeeding and complementary feeding practices can save the lives of 1.5 million children under five every year.
- Recommendations address the needs of HIV-infected mothers and their infants.<sup>13</sup>

## **Advantages of breastfeeding**

### **Human milk**

Human milk is species-specific, and all substitute feeding preparations differ markedly from it, making human milk uniquely superior for infant feeding.<sup>15</sup>

Exclusive breastfeeding is the reference or normative model against which all alternative feeding methods must be measured with regard to growth, health, development, and all other short- and long-term outcomes. In addition, human milk-fed premature infants receive significant benefits with respect to host protection and improved developmental outcomes compared with formula-fed premature infants.<sup>16-17</sup>

From studies in pre-term and term infants, the following outcomes have been documented that exclusive breastfeeding for six months has many benefits for the infant and the mother.<sup>14</sup> Chief among these is protection against gastro-intestinal infections which is observed not only in developing but also in industrialized countries. Early initiation of breastfeeding, within one hour of birth, protects the newborn from acquiring infections and reduces newborn mortality. The risk of mortality due to diarrhoea and other infections can increase in infants who are either partially breastfed or not breastfed at all.

Breast milk is also an important source of energy and nutrients in children 6 to 23 months of age. It can provide one half or more of a child's energy needs between 6 and 12 months of age, and one third of energy needs between 12 and 24 months. Breastmilk is also a critical source of energy and nutrients during illness and reduces mortality among children who are malnourished.

Adults who were breastfed as babies often have lower blood pressure and lower cholesterol, as well as lower rates of overweight obesity and type-2 diabetes.

Breastfeeding also contributes to the health and well-being of mothers; it reduces the risk of ovarian and breast cancer and helps space pregnancies -- exclusive breastfeeding of babies under six months has a hormonal effect which often induces a lack of menstruation. This is a natural (though not fail-safe) method of birth control known as the Lactation Amenorrhoea Method.<sup>13-42</sup>

### **Breast milk**

- Perfect nutrients
- Easily digested
- Efficiently used
- Protects against infectious diseases, especially diarrhoea and respiratory illness.
- Does not cost. It is readily available without dependence on supplies.
- It is the right temperature and helps to prevent hypothermia.

### **Breastfeeding**

- Helps bonding and development
- Helps delay a new pregnancy
- Protects mothers' health
- The release of hormones during breastfeeding relieves maternal stress and anxiety.<sup>10-18-41</sup>

### **Other Benefits**

- ↳ Breast milk is always ready and the right temperature. Baby can be fed as soon as they start showing signs they are hungry.

- ↳ Children who were breastfed are shown to have higher I.Q. levels.
- ↳ Breastfeeding promotes bonding between mom and baby.
- ↳ Breastfeeding helps babies fall asleep more easily.
- ↳ Breast milk contains endorphins. When combined with the comfort of nursing, this helps babies feel better faster when they get hurt or sad.
- ↳ Breastfed babies often fall back to sleep more easily during the night; not waiting for a bottle often means not fully waking up and simply nursing back to sleep.
- ↳ Breast milk tastes good!<sup>35</sup>

## Variations in the composition of breast milk

*Colostrum* is the breast milk that women produce in the first few days after delivery. It is thick and yellowish or clear in colour.

*Mature milk* is the breast milk that is produced after a few days. The quantity becomes larger, and the breasts feel full, hard and heavy. Some people call this the breast milk 'coming in'.

*Foremilk* is the milk that is produced early in a feed.

*Hindmilk* is the milk that is produced later in a feed.

Hindmilk looks whiter than foremilk, because it contains more fat. This fat provides much of the energy of a breastfeed. This is an important reason not to take a baby off a breast too quickly. The baby should be allowed to continue until it has had all that it wants. Foremilk looks bluer than hindmilk. It is produced in larger amounts, and it provides plenty of protein, lactose, and other nutrients. Because a baby gets large amounts of foremilk, it gets all the water that it needs from that. Babies do not need other drinks of water before they are 4-6 months old, even in a hot climate. If they satisfy their thirst on water, they may take less breast milk.<sup>10</sup>

## Colostrum

### Property

### Importance

Antibody rich

Protects against infection and allergy

Many white cells

Protect against infections

Purgative

Clears meconium

Helps to prevent jaundice

Growth factors

Helps intestine to mature

Prevents allergy, intolerance

Vitamin A rich

Reduces severity of infection

Prevents eye disease

## Psychological benefits of breastfeeding

Breastfeeding helps a mother and baby to form a close, loving relationship, which makes mothers feel deeply satisfied emotionally. Close contact immediately after delivery helps this relationship to develop. This process is called *bonding*.

*Babies* cry less and they may develop faster if they stay close to their mothers and breastfeed immediately after delivery.

*Mothers* who breastfeed respond to their babies in a more affectionate way. They complain less about the baby's need for attention and feeding at night and are less likely to abandon or abuse their babies.

Some studies suggest that breastfeeding may help a child to develop intellectually. Low birth-weight babies fed breast milk in the first weeks of life perform better in intelligence tests in later childhood than children who are artificially fed.<sup>10</sup>

### **Dangers of artificial feeding**

#### *Child*

- Interferes with bonding
- More diarrhoea and respiratory infections
- Malnutrition Vitamin A deficiency
- More allergy and milk intolerance
- Increased risk of some chronic diseases
- Overweight
- More likely to die
- Lower scores on intelligence tests

#### *Mother*

- May become pregnant sooner
- Increased risk of anaemia, ovarian and breast cancer<sup>10</sup>

### **Disadvantages of Formula Use During a Disaster**

- It may not be available.
- It may become contaminated.
- Errors in formula preparation may occur.
- Water that is mixed with powdered or concentrated formula may be contaminated.
- There may be no method to sterilize the formula, bottles, or nipples.
- If there is no electricity, opened prepared formula cannot be preserved in the refrigerator.<sup>2</sup>

### **Recommendations**

- Start breastfeeding within 1 hour of birth
- Breastfeed exclusively from 0-4 months of age
- Complementary foods can begin between 4-6 months (exact age varies)
- Give complementary foods to all children from 6 months of age
- Continue breastfeeding up to 2 years of age or beyond

### **Terms for infant breastfeeding**

#### ***Exclusive breastfeeding:***

Exclusive breastfeeding means giving a baby no other food or drink, including water, in addition to breastfeeding (except medicines and vitamin or mineral drops; expressed breastmilk is also permitted).

#### ***Predominant breastfeeding:***

Predominant breastfeeding means breastfeeding a baby, but also giving small amounts of water or water-based drinks - such as tea.

#### ***Full breastfeeding:***

Full breastfeeding means breastfeeding either exclusively or predominantly.

***Bottle feeding:***

Bottle feeding means feeding a baby from a bottle, whatever is in the bottle, including expressed breast milk.

***Artificial feeding:***

Artificial feeding means feeding a baby on artificial feeds, and not breastfeeding at all.

***Partial breastfeeding:***

Partial breastfeeding means giving a baby some breastfeeds, and some artificial feeds, either milk or cereal, or other food.

***Timely complementary feeding:***

Timely complementary feeding means giving a baby other food in addition to breastfeeding, when it is appropriate, after the age of 4-6 months.<sup>10</sup>

## **When should a mother avoid breastfeeding?**

Health professionals agree that human milk provides the most complete form of nutrition for infants, including premature and sick newborns. However, there are rare exceptions when human milk is not recommended. Under certain circumstances, a physician will need to make a case-by-case assessment to determine whether a woman's environmental exposure or her own medical condition warrants her to interrupt or stop breastfeeding.

1. An infant diagnosed with galactosemia, a rare genetic metabolic disorder
2. The infant whose mother:
  - Has been infected with the human immunodeficiency virus (HIV)
  - Is taking antiretroviral medications
  - Has untreated, active tuberculosis
  - Is infected with human T-cell lymphotropic virus type I or type II
  - Is using or is dependent upon an illicit drug
  - Is taking prescribed cancer chemotherapy agents, such as antimetabolites that interfere with DNA replication and cell division
  - Is undergoing radiation therapies; however, such nuclear medicine therapies require only a temporary interruption in breastfeeding<sup>19</sup>



## **Breastfeeding and exposure to certain diseases**

### ***Anthrax***

For a breastfeeding mother who has been exposed to *Bacillus anthracis* spores, she and her child's health care provider will need to consider the effectiveness of recommended medications for the prophylaxis or treatment of anthrax, the safety of the medications for the infant, as well as the benefits of breastfeeding to both mother and child.

If the strain of anthrax is susceptible to penicillin, physicians may prescribe amoxicillin if no other contraindications to the mother are present. Amoxicillin is among those drugs categorized as safe for use with infants. The American Academy of Pediatrics also considers ciprofloxacin and tetracycline (which include doxycycline) to be compatible with breastfeeding because infants absorb only a small amount of either drug. However, little is known about the safety of long-term use of these medications.<sup>20</sup>

### ***Breast Augmentation***

There have been no recent reports of clinical problems in infants of mothers with silicone breast implants. Therefore, in 2001, the American Academy of Pediatrics (AAP) issued a statement regarding the [Transfer of Drugs and Other Chemicals Into Human Milk](#) indicating that the Committee on Drugs felt there was insufficient evidence to justify classifying silicone implants as a contraindication to breastfeeding. Researchers noted that silicon is present in higher concentrations in cow's milk and infant formula than in human milk expressed from mothers with silicone breast implants.<sup>21-33</sup>

### ***Environmental Toxins***

While some women may have detectable levels of chemical agents in their breast milk, no established "normal" or "abnormal" levels exist to aid in clinical interpretation. As a result, breastmilk is not routinely tested for environmental pollutants. Breastfeeding is still recommended despite the presence of chemical toxins. The toxicity of chemicals may be most dangerous during the prenatal period and the initiation of breastfeeding. However, for the vast majority of women the benefits of breastfeeding appear to far outweigh the risks. To date, effects on the nursing infant have been seen only where the mother herself was clinically ill from a toxic exposure.<sup>22</sup>

### ***Jaundice***

Approximately 60% of full-term infants develop jaundice within several days of birth. Jaundice, or yellowing of the skin and eyes, occurs when a normal substance, bilirubin, builds up in the newborn's bloodstream faster than the liver can break it down and excrete it through the baby's stool. By breastfeeding more frequently or for longer periods of time, the infant's body can usually rid itself of the bilirubin excess. However, in some cases, the infant may need additional treatments to keep the condition from progressing into more severe hyperbilirubinemia, bilirubin encephalopathy, or kernicterus.

Breastfeeding jaundice may occur in the first week of life in more than 1 in 10 breastfed infants. The cause is thought to be inadequate milk intake, leading to dehydration or low

caloric intake. It is a type of physiologic or exaggerated physiologic jaundice. Breast milk jaundice is far less common and occurs in about 1 in 200 babies. Here the jaundice isn't usually visible until the baby is a week old. It often reaches its peak during the second or third week. Breast milk jaundice can be caused by substances in the mother's milk that decrease the infant's liver's ability to deal with bilirubin. Breast milk jaundice rarely causes any problems, whether it is treated or not. It is usually not a reason to stop nursing.<sup>27</sup>

### ***Food-borne and Waterborne Illness***

A nursing mother with diarrhoea believed to have been caused by food or water sources should be encouraged to increase the frequency of breastfeeding while significantly increasing her own fluid intake. In addition, oral rehydration salts (ORS) therapy for diarrhea is fully compatible with breastfeeding. Among antidiarrheal treatments, bismuth subsalicylate compounds (Pepto-Bismol) are categorized by the American Academy of Pediatrics (AAP) as "drugs whose effect on nursing infants is unknown but may be of concern." These compounds contain significant levels of salicylates that could be absorbed by the infant and pose a theoretical risk of Reye's syndrome in the infant from salicylate consumption. Both kaolin-pectin (Kaopectate) and loperamide (Immodium, Maalox) are categorized by the AAP as "usually compatible with breastfeeding" and may be used, but kaolin-pectin is preferable to loperamide.<sup>28</sup>

### ***Hepatitis B Virus Infection***

Even before the availability of the hepatitis B vaccine, HBV transmission through breastfeeding was not reported. All infants born to HBV-infected mothers should receive hepatitis B immune globulin and the first dose of the hepatitis B vaccine within 12 hours of birth. The second dose of vaccine should be given at 1–2 months, and the third dose at 6 months. The infant should be tested after completion of the vaccine series, at 9–18 months (generally at the next well-child visit), to determine if the vaccine worked and the infant is not infected with HBV through exposure to the mother's blood during the birth process. However, there is no need to delay breastfeeding until the infant is fully immunized. All mothers who breastfeed should take good care of their nipples to avoid cracking and bleeding.<sup>26</sup>

### ***Hepatitis C Virus Infection***

There is no documented evidence that breastfeeding spreads HCV. Therefore, having HCV-infection is not a contraindication to breastfeed. HCV is transmitted by infected blood, not by human breast milk. There are no current data to suggest that HCV is transmitted by human breast milk. If the HCV-positive mother's nipples and/or surrounding areola are cracked and bleeding, she should stop nursing temporarily. Instead, she should consider expressing and discarding her breast milk until her nipples are healed. Once her breasts are no longer cracked or bleeding, the HCV-positive mother may fully resume breastfeeding.<sup>26</sup>

### ***Malaria***

Malaria does not pass to an infant through the mother's breastmilk. However, a nursing mother who plans to travel to a geographic region where malaria is prevalent is advised to take every precaution to reduce her risk of infection by following standard preventive

approaches. In addition, a nursing mother should thoroughly wash insect repellents from her hands and breast skin before holding and breastfeeding her infant or child.<sup>24</sup>

### ***Tobacco Use***

Mothers who smoke are encouraged to quit, however, breast milk remains the recommended food for a baby even if the mother smokes. Although nicotine may be present in the milk of a mother who smokes, there are no reports of adverse effects on the infant due to breastfeeding. Secondary smoke is a separate concern regarding the child's long-term health. The American Academy of Pediatrics recognizes pregnancy and lactation as two ideal times to promote smoking cessation, but does not indicate that mothers who smoke should not breastfeed.<sup>29</sup>

### ***Toxoplasmosis***

Among healthy women, the possibility of breast milk transmission of Toxoplasmosis infection is not likely. While Toxoplasmosis infection has been associated with infants who consumed unpasteurized goat's milk, there are no studies documenting breast milk transmission of *Toxoplasmosis gondii* in humans. Perhaps, in the event that a nursing woman experiences cracked and bleeding nipples or breast inflammation within one to two weeks immediately following an acute Toxoplasmosis infection (when the organism is still circulating in her bloodstream), it is theoretically possible that she could transmit *Toxoplasma gondii* to the infant through her breastmilk. Immune suppressed women could have circulating Toxoplasma for even longer periods of time. However, the likelihood of human milk transmission is very small.<sup>25</sup>

### ***West Nile Virus***

Scientists have found no evidence that a mother's West Nile Virus infection harms her breastfeeding infant. Therefore, CDC recommends that women with West Nile Virus illness continue breastfeeding because the benefits of breast milk are thought to outweigh the theoretical risk of harm to the infant.<sup>23</sup>

### ***Tuberculosis***

In the past, infants were sometimes separated from their mothers, at least until their mothers became non-infectious. Separation made breastfeeding and care by natural mother impossible, and put infants at risk of infection and malnutrition caused by artificial feeding. These measure no longer recommended. Infants at risk from tuberculosis should receive BCG vaccine as soon as after birth is possible. Two exceptions to this already exist- infant who have yellow fever or HIV infection should not be given BCG. Current recommendations for TB infected mothers are based on the following principles:

- The best way to prevent infection in infants of infected mothers is timely and properly administered chemotherapy for the mother.
- Mothers can be breastfeed – exclusively for a minimum of 4 months and, provided the infant is growing satisfactorily, for 6 months; and they should continue breastfeeding with adequate complementary food up to 2 years or beyond.<sup>43-44</sup>

In parts of the world where both HIV infection and TB are common, the principles of TB control are the same. However, the recommendation for breastfeeding may need notification

according to the Joint United Nations Programme on HIV/AIDS (UNAIDS) Statement on HIV and infant feeding.<sup>43-45</sup>

### ***HIV***

Mothers known to be HIV-infected should be supported to exclusively breastfeed their infants for the first six months of life, to introduce appropriate complementary foods thereafter, and to continue breastfeeding for the first 12 months, along with provision of ARVs, as per current WHO recommendations on HIV and infant feeding (see references below). If an HIV-positive mother was already giving her child commercial infant formula, she should receive an adequate supply of ready-to use formula and support.<sup>30-31</sup>

**Breast is always best, even for HIV-positive mothers.** WHO recommends that all mothers, regardless of their HIV status, practise exclusive breastfeeding – which means no other liquids or food are given – in the first six months. After six months, the baby should start on complementary foods. Mothers who are not infected with HIV should breastfeed until the infant is two years or older.<sup>32</sup>

## Breastfeeding in Emergencies

In an emergency situation, whether a natural or man-made disaster, breastfeeding is an important strategy for increasing infant and child survival.<sup>34</sup>

Basic interventions to facilitate breastfeeding include prioritising mothers with young children for shelter, food, security, water and sanitation, enabling mother-to-mother support, providing specific space for skilled breastfeeding counselling and support to maintain or re-establish lactation. Traumatized and depressed mothers may have difficulty responding to their infants and require particular mental and emotional support. UNICEF, WHO and other organizations involved in infant feeding in emergencies will support training of staff on individual assessment of the best options for feeding infants, as well as education and support of caregivers on optimal infant feeding in these emergency circumstances.<sup>30</sup>

In most emergencies, breastfeeding becomes even more important for infant nutrition and health. The resources needed for safe artificial feeding—such as water, fuel and adequate quantities of infant formula—are usually scarce in emergencies. Artificial feeding in these circumstances increases the risk of diarrhoeal diseases and malnutrition, which in turn substantially increases the risk of infant death. If absolutely required, infant formula should only be used when all other options (e.g. wet-nursing) have been exhausted.<sup>39</sup> For these reasons, infant formula should only be purchased and distributed based on needs assessments carried out by adequately trained nutrition and health workers. Strategies should also be developed to promote best practices in situations where formula is used. If used, infant formula should have generic labelling as well as reconstitution instructions in the local language. See box on the next page on guiding principles for feeding infants during emergencies. Supplementary feeding may be an important intervention for protecting the nutritional status of the lactating mother and maintaining the nutritional quality of the breast milk. Support and encouragement may also be required to maintain and enhance breastfeeding in individuals affected by high levels of psychological stress. UNHCR, UNICEF, WFP and WHO comply with the international guidelines on the protection and promotion of breastfeeding. All staff involved in the planning of food and nutritional needs should be familiar with these policy statements and guidelines. Guiding principles for feeding infants (0-6 months) during emergencies<sup>38</sup>

### **1 .All infants including those born into populations affected by emergencies should normally be excluded breastfeed for the first month as recommended by WHO**

- The beneficial effects of colostrum in breast milk are especially important; infants should be breast-fed on demand from birth.
- Every effort should be made to identify ways to breast-feed infants whose mothers are absent or incapacitated.
- Re-lactation should be attempted before the use of infant formula is considered.

### **2 . Every effort should be made to create and sustain an environment that encourages exclusive breastfeeding for the first six months and continued frequent breastfeeding up to two years.**

### **3 . The quantity, distribution and use of breast milk substitute e.g. infant formula at emergency sites should be strictly controlled, using the following guidelines:**



- Nutritionally adequate infant formula, fed by cup, should be available for infants who do not have access to breastmilk.
- Those responsible for feeding infant formula should be adequately trained and equipped to ensure its safe preparation and use.
- Feeding infant formula to a minority of children should in no way interfere with protecting and promoting breastfeeding for the majority.
- The use of infant feeding bottles and artificial teats in emergency settings should be actively discouraged and cup feeding promoted instead, as cups are much easier to keep clean. In a typical emergency, the majority of women do not know their HIV status. For women to be able to make appropriate informed choices on infant feeding, availability of voluntary counselling and testing (VCT) is crucial. Current policies on breastfeeding and infant feeding by HIV-infected women are these .<sup>40</sup>

1. Exclusive breastfeeding should be protected, promoted, and supported for six months. This applies to women who are known not to be infected with HIV and for women whose infection status is unknown.

2. When replacement feeding is acceptable, feasible, affordable, sustainable and safe, avoidance of breastfeeding by HIV-infected mothers is recommended; otherwise, exclusive breastfeeding is recommended during the first months of life.

3. To minimize HIV transmission risk, breastfeeding should be discontinued as soon as feasible, taking into account local circumstances, the individual woman's situation and the risks of replacement feeding (including infections other than HIV and malnutrition).<sup>36-37</sup>

### **Feeding of the non-breastfed child less than six months of age**

Infants less than six months of age who are not breastfed need urgent identification and targeted skilled support. The priority to feed these infants should be re-lactation. If this is not possible or when artificial feeding is indicated by skilled staff such as health providers or infant feeding counsellors, breast-milk substitutes are necessary and must be accompanied by training on hygiene, preparation and use to minimise their associated risks. **Artificial feeding in an emergency carries high risks of malnutrition, illness and death and is a last resort only when other safer options have first been fully explored.**<sup>30</sup>

### **Complementary feeding of children above six months of age**

Children from the age of six months require nutrient-rich, age-appropriate and safe complementary foods in addition to breast milk. Priority should be placed on locally available, culturally acceptable, nutritionally adequate and age-appropriate foods. When cooking facilities are non-existent or severely limited, ready-to-use fortified foods are an option. Micronutrient powders that can be added to local foods, emergency rations or blended foods will also improve dietary quality. In addition, once cooking facilities have been set up, provision of fortified blended food is recommended. A monitoring system to ensure the appropriate targeting, distribution and use of food and food products for infants and young children should be established.<sup>30</sup>

## Debunking myths

There are many myths surrounding breastfeeding during a crisis, for example, those mothers under stress or suffering from malnutrition are unable to breastfeed; that women who have stopped lactating cannot begin again.



More damaging is the common donor impulse to send infant formula or breast milk substitutes to disaster zones, undermining breastfeeding practices already in place and efforts to get new mothers to nurse.

“Often, [donated infant formula] is one of the first things that come in,” said UNICEF Nutrition Specialist Christiane Rudert, “because there is a misperception that most children are already being fed formula.”

After the 2004 Indian Ocean tsunami, formula donations sent to affected areas resulted in immediate decreased rates of breastfeeding and higher rates of diarrhoea and mortality among young children. Only a large-scale breastfeeding promotion programme – supported “down to the village level,” said Ms. Rudert – was able to offset the effects of formula.<sup>9</sup>

## ***RECOMMENDATIONS***

Emergencies create a wide range of problems experienced at the individual, family, community and societal levels. At every level, emergencies erode normally protective supports, increase the risks of diverse problems and tend to amplify pre-existing problems of social injustice and inequality. For example, natural disasters such as floods typically have a disproportionate impact on poor people, who may be living in relatively dangerous places.<sup>46</sup> A severe food shortage threatens the nutritional status of communities. This can cause malnutrition among affected populations including micronutrient deficiencies. Such deficiencies can inhibit intellectual and physical potential and cause lifelong disability. Many caregivers are unavailable or unable to provide psychosocial stimulation to their children during food crises due to their own poor physical or mental health. A lack of psychosocial stimulation has adverse consequences for children’s development (cognitive, motor, language) and mental health.<sup>47</sup>

## Prevention strategies/ Guidelines

- Combination nutrition/stimulation programmes that emphasize appropriate feeding practices and responsive parenting (e.g., proactive stimulation and appropriate responses) have a greater impact than either intervention alone. Indeed, nutrition programmes that contain a psychosocial component are more effective in promoting growth and positive child development than nutritional programmes without a psychosocial component. They may also help to decrease maternal depression.
- Information on appropriate feeding practices and the importance of psychosocial stimulation should be disseminated to key groups, such as healthcare providers, donors, and humanitarian aid workers.
- Psychosocial support and education regarding appropriate feeding practices should be provided to caregivers. Caregivers with physical or mental health problems may need extra support to ensure that they are able to give care to their children. Improving maternal mental health (e.g., reducing maternal depression) may be one of the most important interventions in situations of severe food shortages for both the mother and child. Breast milk is an ideal food for healthy growth and development. Breast feeding protects against many infections and may be helpful for mother-child bonding. The distribution and use of breast-milk substitutes at emergency sites should be strictly controlled in an effort to promote breastfeeding. Breastfeeding women may need care, encouragement, and psychological support to continue breastfeeding. Among mothers who are HIV positive, the risk of the child being infected with HIV through breastfeeding should be carefully weighed against the risk of the child becoming seriously ill or dying if he or she is not breastfed.<sup>47</sup>



Mothers need support not only to begin breastfeeding within one hour of birth, but also to sustain exclusive breastfeeding for six months, and continue breastfeeding for two years or beyond, as well as giving other nutritious foods. They also need support to prevent and

overcome breastfeeding difficulties and deal with competing demands on their time. In addition, governments must ensure that infant formula marketing never seeks to persuade mothers that products could possibly be equivalent to breast milk. Above all, mothers everywhere should have a sense of pride in breastfeeding. Breastfeeding counselling, an important source of support for mothers, has been shown to improve breastfeeding practices. To this end, WHO has developed, together with UNICEF, a range of infant and young child feeding counselling courses and job aids for use by health care workers and lay counsellors. Support for breastfeeding is needed not only from the health sector, but also within families, communities and the workplace, backed up by appropriate policies and legislation.<sup>49</sup>

**In short:**

1. Keep families together.
2. Create safe havens for pregnant and breastfeeding mothers. These havens should provide security, counselling, water, and food. Paediatricians can contribute using offices, hospitals, or other shelters.
3. Assure mothers that human milk can contribute significant nutrition in the absence of safe complementary foods for the first year of life and beyond.
4. Advocate for optimal feeding options for orphaned infants, including HIV-negative donor human milk.
5. Assist new mothers to initiate breastfeeding within 1 hour of birth, promote exclusive breastfeeding for 6 months, and encourage breastfeeding for at least 1 year or longer.
6. Provide support for breastfeeding through assessment of the infant's hydration and nutritional status.
7. In situations where human milk is not available, recommend ready-to-feed formula. Powdered formula is the last resort. Use concentrated or powdered formula only if bottled or boiled water is available.
8. Lactating women may be immunized as recommended for adults and adolescents to protect against measles, mumps, rubella, tetanus, diphtheria, pertussis, influenza, *Streptococcus pneumoniae*, *Neisseria meningitidis*, hepatitis A, hepatitis B, varicella, and inactivated polio.<sup>18-50</sup>



## **Abstract**

Massive displacement of people is a major effect of all disasters, be it natural or man made, causing large population groups to become vulnerable to disease and malnutrition as well as social disruption. Most children do not die due to conflicts or natural disasters themselves, but rather due to resulting food shortages, lack of safe water, inadequate health care, and poor sanitation and hygiene. In an emergency situation, whether natural or man-made disaster, breastfeeding is an important strategy for increasing infant and child survival. . It is estimated that over one million children die each year from diarrhoea, respiratory and other infections because they are not adequately breastfed. Many more children suffer from unnecessary illnesses that they would not have if they were breastfed.



**Keywords** : Breastfeeding, breast milk, emergency situations, massive displacement, population displacement, infant malnutrition, breast milk formula, exposure to diseases, counseling, guidelines.



## Περίληψη

Οι μαζικές μετακινήσεις των πληθυσμών είναι αποτέλεσμα όλων των καταστροφών, είτε πρόκειται για φυσικές καταστροφές είτε έχουν προκληθεί από τον άνθρωπο, οδηγώντας μεγάλες ομάδες του πληθυσμού σε ασθένειες, υποσιτισμό και κοινωνική αναστάτωση. Οι ελλείψεις τροφίμων που προκύπτουν, η έλλειψη πόσιμου νερού, η έλλειψη υγειονομικής περίθαλψης και γενικά οι κακές συνθήκες υγιεινής είναι οι αιτίες που οδηγούν τα περισσότερα παιδιά σε θάνατο από ότι οι ίδιες οι συγκρούσεις ή οι φυσικές καταστροφές. Μια σημαντική στρατηγική για την αύξηση της βρεφικής και της παιδικής επιβίωσης σε καταστάσεις έκτακτης ανάγκης, είτε φυσικών είτε ανθρωπογενών καταστροφών, είναι ο μητρικός θηλασμός. Εκτιμάται ότι πάνω από ένα εκατομμύριο παιδιά πεθαίνουν κάθε χρόνο από διάρροια, αναπνευστικές και άλλες λοιμώξεις διότι δεν θηλάζουν επαρκώς ενώ πολλά περισσότερα παιδιά υποφέρουν από ασθένειες που δεν θα είχαν αν είχαν θηλάσει.

**Λέξεις κλειδιά :** μητρικός θηλασμός, μητρικό γάλα, έκτακτες καταστάσεις, μαζικές μετακινήσεις, μετακινήσεις πληθυσμών, βρεφικός υποσιτισμός, φόρμουλα μητρικού γάλατος, έκθεση σε ασθένειες, συμβουλευτική, οδηγίες.

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## **Photos**

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