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Systematic review of infant and young child feeding practices in conflict areas: what the evidence advocates

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ABSTRACT

Background Breast feeding in conflict settings is known to be the safest way to protect infant and young children from malnourishment and increased risk of infections. This systematic review assesses the evidence on infant and young child feeding (IYCF) practices in conflict settings. 

Methodology We conducted a search in PubMed and CENTRAL and also searched for grey literature from the year 1980 to August 2019. We included studies conducted in settings inflicted with armed conflict; which comprised settings undergoing conflict, as well as, those within 5years of its cessation. Studies were included if they discussed IYCF practices, barriers, programmes and guidelines to promote and improve IYCF practices. Two review authors independently evaluated and screened studies for eligibility and extracted data; followed by a descriptive and thematic analysis. 

Results We included 56 studies in our review including 11 published articles and 45 reports from grey literature and broadly classified into four predetermined sections: epidemiology (n=24), barriers/enablers (n=18), programmes/interventions (n=15) and implementation guidelines (n=30). Epidemiological evidence shows that IYCF practices were generally poor in conflict settings with median prevalence of exclusive breast feeding at 25%, continued breast feeding at 29%, bottle feeding at 58.3%, introduction to solid, semisolid or soft foods at 71.1% and minimum dietary variety at 60.3%. IYCF practices were affected by displacement, stress, maternal malnutrition and mental health, family casualties and free distribution of breast milk substitutes. To improve IYCF, several interventions were implemented; including, training of health workers, educating mothers, community networking and mobilisation, lactation-support service, baby friendly hospital initiative, mother–baby friendly spaces and support groups.

Conclusion The evidence suggests that IYCF practices are generally poor in conflict inflicted settings. However, there is potential for improvement by designing effective interventions, responsibly disseminating, monitoring and implementing IYCF guidelines as prescribed by WHO development partners, government and non-government organisations with dedicated funds and investing in capacity development.

INTRODUCTION

Optimal infant and young child feeding (IYCF) practices play a critical role in determining the nutritional status, health, growth and development of children, along with improving the health of mothers.1-4 The current guidelines suggest breast feeding should be initiated within the first hour of birth and infants be exclusively breast fed for the first 6months of life, that is, receive only breast milk, with the exception of oral rehydration syrups solutions, drops/vitamins, minerals and medicines.5,6 Exclusive breast feeding (EBF) offers the required nourishments for normal growth and development till 6months of age; thereafter safe, timely and nutritionally adequate complementary foods should be added to the diet of infants, along with continued breast feeding up to 2years of age.1,5,6 Children who have been breast fed for longer periods of time tend to exhibit lower

Strengths and limitations of this study

- To our knowledge, this is the first systematic review on infant and young child feeding (IYCF) practices in conflict settings that looks at the evidence on the current practices of breast feeding and complementary feeding, and assesses specific barriers to adapting optimal IYCF practices. This review also explores the evidence on effective strategies to improve IYCF practices, as well as evidence from implementation guidelines, which suggest the way IYCF should be approached in conflict contexts.
- The review highlights the suboptimal IYCF practices in children affected by conflict.
- The review highlights the evidence derived from strategies/interventions implemented in conflict areas to improve IYCF practices, although weak, provides important insights for future approaches to improve IYCF practices.
- The review is limited by the scarcity of evidence as many programmes in conflict contexts are not reported. And even within published reports, very few studies have clearly specified the scale of the intervention, year of conflict, year of ‘baseline’ data or performed a formal evaluation of the programme and its impact on IYCF outcomes.
odds of infectious morbidity and mortality,\(^7\) as infants who are not breast fed have sixfold greater risk of infections related in the first 2 months of life when compared with infants that have been adequately breast fed.\(^3\) The current evidence suggests that high-income countries (HICs) practice shorter duration of breast feeding (\(< 20\%\)) compared with low/middle-income countries (LMICs).\(^7\) However, even within LMICs, approximately only 37\% of infants younger than 6 months are exclusively breast fed.\(^7\) Just scaling up and promoting breast feeding to a universal level could possibly prevent 823,000 annual deaths in children under the age of 5 years\(^2\) and 13.8\% of these under 2 years of age.\(^7\) After 6 months of age, energy–and–nutrient dense foods that can be easily eaten and digested should be added to infants’ diet in order meet their dietary demands.\(^9\) Both breast feeding and appropriate complementary feeding are pivotal for child growth and the prevention of disease and malnutrition.\(^1\) Breast feeding coupled with complementary feeding has the potential to reduce mortality among children under the age of 5 years by 19\%.\(^5\)

During times of armed conflict, vulnerable groups including children bear the greatest negative consequences. The onset of conflict increases death rates by up to 24 times, with adverse effects especially for children under the age of 5 years.\(^10\) Newborns are specifically at a higher risk of dying if they are poor, exposed to unsafe environments or if they are within a conflict setting.\(^8\) Armed conflict significantly impacts breast feeding practices with lower rates of breast feeding observed in war-torn areas.\(^11\) Before Lebanon’s conflict in 2006, approximately 27\% of mothers exclusively breast fed for the first 4 months of life and after the conflict escalated, the breast feeding practices were severely affected with most mothers discontinuing breast feeding altogether or initiating mixed feeding and/or reduced breast feeding.\(^12\) Similarly, in these war-torn areas, complementary feeding may also become severely eroded and disrupted.\(^1\) This could be attributed to safety, access to sufficient quantity and quality of complementary foods, and also appropriate knowledge of complementary feeding.\(^1\) Often, misconceptions associated with the introduction of solid foods results in mothers or caregivers, results in either initiating solid food early or waiting more than required.\(^13\) Suboptimal complementary food intake can result in deterioration of health status of infants and young children, increasing the risk of morbidity and mortality.\(^1\)

In conflict settings; breast feeding and appropriate complementary feeding is of crucial importance because it is regarded as the safest way to protect infants and young children from infections and malnourishment.\(^14\) This can be corroborated by the fact that during emergency situations; mortality rates of artificially fed infants are greatly elevated in comparison to breastfed babies,\(^8\) as the risk mortality due to diarrhea and other infectious diseases are 20 times higher than infants who have been exclusively breast fed.\(^12\) This is due to prevalent unhygienic conditions coupled with lack of safe water and facilities to sterilise feeding bottles and prepare formula safely. Support for optimal breast feeding, re-lactation, and timely introduction of complementary foods should be the first choice of intervention during conflict situations to mitigate feeding problems for infants and young children\(^3\) and should not be undermined by inappropriate distribution of breast milk substitutes (BMS).\(^2\)\(^9\)\(^10\) There is currently no existing comprehensive review for IYCF in conflict settings. The objective of this systematic review is to assess the evidence on IYCF practices, factors associated with IYCF, evidence on the interventions undertaken and guidelines to improve IYCF practices in children under 2 years of age living in conflict settings.

**CONCEPTUAL FRAMEWORK**

During armed conflicts, IYCF practices are disrupted due to displacement, casualties, lack of resources, stress and malnutrition, as well as due to unregulated BMS donations by agencies. We developed a conceptual framework to guide this review and highlighting the IYCF practices and factors responsible for improving IYCF practices in an armed conflict and post-conflict settings (figure 1). It also focuses on the evidence of current IYCF practices, factors associated with improving IYCF and the evidence from interventions and programmes implemented in these settings. We also explored existing implementation guidelines and programme recommendations for improving IYCF practices from different agencies working in such settings.

**METHODOLOGY**

We conducted a systematic review for available published and grey literature, assessing four domains including; epidemiology (coverage of key IYCF and malnutrition indicators), enablers/barriers (for recommended IYCF practices), interventions/programmes (effectiveness in improving IYCF practices) and implementation guidelines to improve IYCF practices in conflict settings.

**Eligibility criteria**

We included studies assessing the impact of conflict on IYCF practices and enablers/barriers, interventions/programmes and guidelines to promote or facilitate IYCF
in conflict settings. We included studies conducted in an armed conflict setting, defined as ‘a political conflict in which armed combat involves the armed forces of at least one state (or one or more armed factions seeking to gain control of all or part of the state) and in which people have been killed by the fighting during the course of the conflict’. We included studies conducted during conflict and within 5 years of its cessation. Included studies comprised primary research articles, reports and grey literature and policy and guidelines. We included all studies conducted in conflict settings of low, low-middle and upper-middle income countries classified by World Bank during the period of 1980–2018. Additionally, studies conducted in refugee camps of HIC were also included for analysis.

We excluded studies conducted in HICs apart from refugee camps. Clinical studies (exclusively looking at microbiological/laboratory outcomes/screening or diagnostic test evaluations or surgical techniques/outcomes), mathematical modelling or economic studies (with no empirical data/information), systematic and literature reviews were excluded from the study. We also excluded studies conducted in humanitarian emergencies apart from armed conflict.

**Data management**

We searched PubMed and CENTRAL using our search strategy constructed by using Medical Subject Headings (MeSH) and key words (Box 1). The bibliographies of relevant systematic reviews and included studies were searched to identify the missing records in the database search. We only included articles in English language. Additionally, a grey literature search was conducted on Google and websites and publications of relevant agencies such as WHO, UNICEF, United Nations High Commissioner for Refugees (UNHCR), International Baby Food Action Network, Emergency Nutrition Network, Baby Milk Action, Save the Children, Action Against Hunger and Wellstart International.

We also searched for additional data by entering titles of all included studies on Google Scholar and reviewing the first 10 pages to include any relevant missing studies.

**RESULTS**

We identified a total of 56 studies (Figure 2) which were broadly classified into the pre-determined four sections; epidemiology, enablers/barriers, programmes/interventions and implementation guidelines.

**Epidemiology**

Twenty-four studies reported on the prevalence of breast feeding and the burden of disease in different conflict-affected regions. Eighteen were reports, five were cross sectional studies and one was a cohort study. Seven studies were conducted in Middle East, six in Europe, five in Africa, and two reported on prevalence in more than one region which included Africa and Middle East. The included studies collected data through various sources and methods; five studies included data from national assessments done by the WHO and other developmental partners, five conducted cross sectional household surveys, four collected data from multiple indicator cluster survey, one distributed questionnaires, one collected data from national surveillance system registry, one through Disease Early Warning System surveillance network and two did not specify.

Twenty studies reported on IYCF according to the WHO IYCF indicators which are summarised in Table 1. These studies analysed IYCF indicators divided into WHO eight core indicators (early initiation...
of breast feeding, EBF under 6 months, continued breast feeding at 1 year, introduction of solid, semisolid or soft foods, minimum dietary diversity, minimum meal frequency, minimum acceptable diet and consumption of iron-rich or iron-fortified foods) and seven optional indicators (children ever breast fed, continued breast feeding at 2 years, age-appropriate breast feeding, predominant breast feeding under 6 months, duration of breast feeding, bottle feeding and milk feeding frequency of non-breastfed children). Using the data extracted from included studies, the median prevalence of early initiation of breast feeding in conflict-affected areas was 51% (range: 31.3%–85%), EBF was 25% (range: 5.5%–77.1%), proportion of children with appropriate introduction of solid, semisolid or soft foods was 71.1% (range: 40.7%–98.6%), proportion of children with minimum dietary diversity was 60.3% (range: 9.2%–79.4%), children ever breast fed was 92% (range: 62.8%–98.4%), continued breast feeding at 2 years was 29% (range: 9%–66%), age-appropriate breast feeding was 43.2% (range: 19.5%–77.8%), predominant breast feeding was 31.3% (range: 7.1%–77.3%) and bottle feeding was 58.3% (range: 31.8%–71.4%).

Two studies reported on association of breast feeding with malnutrition in displaced Bosnian and Saharawi children. Infants were more likely to be malnourished who were never breast fed (OR: 1.78, 95% CI 1.26 to 2.52) or who were not breast fed for at least 4 months (OR: 1.45, 95% CI 1.02 to 2.07) than those who were ever breast fed or were breast fed for 4 months. Malnutrition persisted among infants who were not exclusively breast fed and infants who were breast fed for less than 5–6 months were more likely to be malnourished (OR: 1.98, 95% CI 1.01 to 7.35) than those who were breast fed for more than 6 months. After adjusting for diseases, mother’s body mass index and child’s age; prevalence of underweight...
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<th>Indicators</th>
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<tr>
<td>Early initiation of breast feeding (n=10)</td>
<td>▶ IDPs: South Sudan, Ukraine</td>
<td>Camp: Algeria, Jordan, Kenya, Lebanon</td>
<td>51% (range: 31.3%–85%)</td>
<td>357 (range: 111–1368)</td>
<td>Camps: Algeria, Jordan, Kenya</td>
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<tr>
<td></td>
<td>▶ Refugees: Algeria, Jordan, Kenya, Lebanon, Pakistan</td>
<td>Community: Pakistan, South Sudan, Ukraine, Yemen</td>
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<td>Village: Pakistan</td>
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<tr>
<td></td>
<td>▶ Not specified: Bosnia-Herzegovina, CAR, Yemen</td>
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<td>District: Yemen</td>
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<tr>
<td></td>
<td>▶ IDPs: Bosnia-Herzegovina, Ukraine, Sierra Leone, South Sudan</td>
<td>Camp: Algeria, Kenya, Lebanon</td>
<td>25% (range: 5.5%–77.1%)</td>
<td>432 (range: 58–250 000)</td>
<td>Camps: Algeria, Jordan, Kenya</td>
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<tr>
<td></td>
<td>▶ Refugees: Algeria, Greece, Jordan, Kenya, Lebanon, Pakistan</td>
<td>Community: Bosnia-Herzegovina, Iraq, Kosovo, Pakistan, South Sudan, Yemen</td>
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<td>Village: Pakistan</td>
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<tr>
<td></td>
<td>▶ Not specified: Afghanistan, Bosnia-Herzegovina, Iraq, Kosovo, Lebanon, Syria, Yemen</td>
<td>Community and healthcare facility: Jordan</td>
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<td>District: Yemen</td>
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<tr>
<td></td>
<td>▶ IDPs: Ukraine</td>
<td>Camp: Kenya, Lebanon</td>
<td>57.20% (range: 8.5%–78.2%)</td>
<td>326 (range: 38–1368)</td>
<td>Camp: Kenya</td>
</tr>
<tr>
<td></td>
<td>▶ Refugees: Greece, Kenya, Lebanon, Pakistan</td>
<td>Community: Pakistan, Ukraine, Yemen</td>
<td></td>
<td></td>
<td>Village: Pakistan</td>
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<td>▶ Not specified: Bosnia-Herzegovina, Yemen</td>
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<td>District: Yemen</td>
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<tr>
<td>Introduction of solid, semisolid or soft food (n=6)</td>
<td>▶ IDPs: Ukraine</td>
<td>Camp: Algeria, Kenya, Community: Pakistan</td>
<td>71.05% (range: 40.7%–98.6%)</td>
<td>477 (range: 111–1368)</td>
<td>Camps: Algeria, Kenya</td>
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<tr>
<td></td>
<td>▶ Refugees: Algeria, Greece, Kenya, Pakistan</td>
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<td>Village: Pakistan</td>
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<td>▶ Not specified: Bosnia-Herzegovina, Yemen</td>
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<td>District: Yemen</td>
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<tr>
<td>Minimum dietary diversity (n=5)</td>
<td>▶ IDPs: South Sudan</td>
<td>Community: Pakistan, South Sudan, Yemen</td>
<td>60.25% (range: 9.2%–79.4%)</td>
<td>309 (range: 148–1055)</td>
<td>Camp: Pakistan</td>
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<td>▶ Refugees: Greece, Pakistan</td>
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<td></td>
<td>▶ Not specified: CAR, Yemen</td>
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<td></td>
<td>▶ IDPs: South Sudan</td>
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<td>National: CAR</td>
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<td>▶ Refugees: Greece, Pakistan</td>
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<td></td>
<td>▶ Not specified: CAR, Yemen</td>
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Table 1 Continued

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<th>Indicators</th>
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<th>Estimates median (range)</th>
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<tbody>
<tr>
<td>Minimum meal frequency (n=6)</td>
<td>IDPs: South Sudan, Ukraine</td>
<td>Community: Pakistan, South Sudan, Yemen</td>
<td>58% (range: 58%–97.6%)</td>
<td>432 (range: 148–1055)</td>
<td>Village: Pakistan</td>
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<tr>
<td></td>
<td>Refugees: Greece, Pakistan</td>
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<td>District: Yemen</td>
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<td>Not specified: CAR, Yemen</td>
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<td>National: CAR</td>
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<tr>
<td>Minimum acceptable diet (n=5)</td>
<td>IDPs: South Sudan</td>
<td>Community: Pakistan, South Sudan, Yemen</td>
<td>24.95% (range: 30.5%–33%)</td>
<td>309 (range: 148–1055)</td>
<td>Village: Pakistan</td>
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<td>District: Yemen</td>
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<td>National: CAR</td>
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<tr>
<td>Consumption of iron rich and iron fortified food (n=5)</td>
<td>IDPs: Ukraine</td>
<td>Camp: Jordan</td>
<td>51.61% (range: 29%–84.7%)</td>
<td>379 (range: 281–477)</td>
<td>Camp: Jordan</td>
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<td></td>
<td>Refugees: Jordan</td>
<td>Community: Ukraine</td>
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<tr>
<td>Optional indicators</td>
<td>All (refugees, displaced and not displaced): Bosnia-Herzegovina</td>
<td>Camp: Macedonia</td>
<td>92% (range: 62.8%–98.4%)</td>
<td>766 (range: 148–1123)</td>
<td>Camp: Macedonia</td>
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<td></td>
<td>IDPs: Ukraine</td>
<td>Community: Bosnia-Herzegovina, Pakistan, Ukraine</td>
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<td>Village: Pakistan</td>
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<tr>
<td></td>
<td>Refugees: Greece, Macedonia, Pakistan</td>
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<td>National: Bosnia-Herzegovina</td>
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<tr>
<td>Continued breast feeding at 2 years (n=6)</td>
<td>IDPs: Ukraine</td>
<td>Camp: Lebanon</td>
<td>29% (range: 9%–66%)</td>
<td>477 (range: 148–55 194)</td>
<td>Village: Pakistan</td>
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<tr>
<td></td>
<td>Refugees: Lebanon, Pakistan, Greece</td>
<td>Community: Iraq, Pakistan, Ukraine</td>
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<td>National: Iraq</td>
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<tr>
<td>Age appropriate breast feeding (n=3)</td>
<td>Refugees: Greece, Pakistan</td>
<td>Community: Pakistan</td>
<td>43.20% (range: 19.5%–77.8%)</td>
<td>602 (range: 148–1055)</td>
<td>Village: Pakistan</td>
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<tr>
<td>Predominant breast feeding under 6 months(n=5)</td>
<td>Refugees: Algeria, Greece, Pakistan</td>
<td>Camp: Algeria</td>
<td>31.30% (range: 7.1%–77.30%)</td>
<td>176 (range: 111–1055)</td>
<td>Village: Pakistan</td>
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<td></td>
<td>Not specified: Bosnia-Herzegovina, Kosovo</td>
<td>Community: Kosovo, Pakistan</td>
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<tbody>
<tr>
<td><strong>Duration of breast feeding (n=2)</strong>&lt;sup&gt;27,31&lt;/sup&gt;</td>
<td>► All (refugees, displaced and not displaced): Bosnia- Herzegovina, Guinea-Bissau</td>
<td>► Community: Bosnia-Herzegovina, Guinea-Bissau</td>
<td>22.7 months</td>
<td>2149 (range: 1741–2556)</td>
<td>► City: Guinea-Bissau, National: Bosnia-Herzegovina</td>
</tr>
<tr>
<td>Bottle feeding (n=3)&lt;sup&gt;21,36,38&lt;/sup&gt;</td>
<td>► IDPs: Ukraine, Refugees: Lebanon, Pakistan</td>
<td>► Camp: Lebanon, Community: Pakistan, Ukraine</td>
<td>58.30% (range: 31.8%–71.4%)</td>
<td>477 (range: 174–1055)</td>
<td>► Village: Pakistan</td>
</tr>
<tr>
<td>Milk feeding frequency of non-breastfed children (n=1)&lt;sup&gt;33&lt;/sup&gt;</td>
<td>► Refugees: Greece</td>
<td>► Not stated</td>
<td>33.90%</td>
<td>148</td>
<td>► Not stated</td>
</tr>
</tbody>
</table>

**Malnutrition**

| Underweight (n=4)<sup>10,25,28,38</sup> | ► IDPs: Afghanistan, Sierra Leone, Refugees: Algeria, Pakistan, Not specified: East Timor, Yemen | ► Camp: Algeria, Community: Pakistan, Yemen | 33.10% (range: 12.01%–48%) | 1055 (range: 111–250 000) | ► Camp: Algeria, Village: Pakistan, District: Yemen |
| Acute malnutrition (n=3)<sup>10,24,36</sup> | ► All (IDPs, residents): Southern Somalia | ► Camp: Southern Somalia, Ukraine, Camps, hospitals and mobile clinics: Pakistan | 30.10% (range: 0.5%–81%) | 80 000 (range: 477–3 000 000) | ► Camps and healthcare facilities: Pakistan |
| GAM (n=7)<sup>14,18,20,23,28,32,38</sup> | ► IDPs: South Sudan, Refugees: Jordan, Kenya, Pakistan, Not specified: CAR, Yemen | ► Camp: Jordan, Kenya, Community: Pakistan, South Sudan, Yemen | 9.95% (range: 2.6%–25.1%) | 498 (range: 208–1368) | ► Camp: Jordan, Kenya, Village: Pakistan, Yemen, District: Yemen |
| MAM (n=9)<sup>10,19,20,25,28,34,36,38,44</sup> (Z-score <−2 to <−3 SD) | ► IDPs: Afghanistan, Bosnia-Herzegovina, Sierra Leone, South Sudan, Sudan, Ukraine | ► Camp: Algeria, Ukraine, Community: Bosnia-Herzegovina, Jordan, Pakistan, South Sudan, Yemen | 4.0% (range: 0.27%–25%) | 563 (range: 111–250 000) | ► Camp: Algeria, Village: Pakistan, District: Yemen, Governorates: Jordan |
### Table 1 Continued

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| **SAM** (<8) **(Z-score <−3 SD)** | ▶ IDPs: South Sudan, Sudan  
▶ Refugees: Jordan, Kenya, Pakistan  
▶ Not specified: CAR, Yemen | ▶ Camp: Kenya  
▶ Community: Jordan, Pakistan, South Sudan, Sudan, Yemen | 1.50%  
(range: 0.15%–5.3%) | 809  
(range: 208–46383) | ▶ Camp: Kenya  
▶ Village: Pakistan, Yemen  
▶ District: Yemen  
▶ Governorates: Jordan |
| **Chronic malnutrition** | | | | | |
| Stunting (<7) | ▶ IDPs: Afghanistan, Sierra Leone, South Sudan  
▶ Refugees: Algeria, Pakistan  
▶ Not specified: East Timor, CAR, Yemen | ▶ Camp: Algeria  
▶ Community: Pakistan, South Sudan, Yemen | 38.60%  
(range: 13.6%–53%) | 432  
(range: 111–1055) | ▶ Camp: Algeria  
▶ Village: Pakistan, Yemen  
▶ District: Yemen |
| Overweight (n=1) | ▶ Refugees: Pakistan | ▶ Community | 18.1% | 1055 | Village |
| Anaemia (n=1) | ▶ Refugees: Pakistan | ▶ Community | 23.2% | 1055 | Village |
| **Other indicators** | | | | | |
| Diarrhoea prevalence (n=3) | ▶ IDPs: Guatemala, Pakistan  
▶ Not specified: Yemen | ▶ Camps, hospital and mobile clinics: Pakistan  
▶ Community: Yemen | 30%  
(range: 28.9%–73.8%) | 303  
(range: 42–563) | ▶ Healthcare facilities: Pakistan  
▶ District: Yemen |
| Mortality due to diarrhoea (n=3) | ▶ IDPs: Bosnia-Herzegovina, Somalia  
▶ Refugees: Iraq, Nepal, Pakistan, Uganda, Zaire | ▶ Camps: Southern Somalia  
▶ Community: Bosnia-Herzegovina, Pakistan | 39%  
(range: 22.3%–87%) | 100 000  
(range: 1055–3 000 000) | Village: Pakistan |

Note: GAM: Global Acute malnutrition; MAM: moderate acute malnutrition; SAM: severe acute malnutrition  
CAR, Central African Republic; DRC, Democratic Republic of the Congo; IDP, internally displaced person; IYCF, infant and young child feeding.
and wasting was low among children who were predominantly or exclusively breast fed (mean difference: 0.62, 95% CI 0.10 to 1.13 and 0.41, 95% CI −0.08 to 0.91, respectively).25

Enablers/barriers
Eighteen studies reported on enablers/barriers to IYCF practices in conflict settings (figure 3).13 14 19–22 29 33 37 40–43 Of these, 12 were reports13 14 19–22 29 33 37 40–43 and 6 were cross sectional studies.25 27 34–36 41 Seven studies were conducted in Europe,27 33–37 45 five in Middle East,13 14 19–21 22 three in Africa,20 25 41 one in Asia,29 one study was conducted in both Asia and Europe40 and one failed to report.41 Nine studies reported on refugees,13 14 19 21 25 32 37 40 43 four on internally displaced persons (IDPs),20 22 34–36 three on non-displaced residents27 29 41 and two failed to report on the target population.35 42 Nine studies were conducted in camps,13 14 19–21 25 32 37 40 43 seven in community20 22 27 29 34 36 41 and two did not report.35 42

Conflict-related violence
Breast feeding declined significantly in regions with high levels of conflict-related violence relative to areas which were considered the ‘safest areas’ in Iraq.29 A mother residing in dangerous areas of Iraq was 17.4% more likely to stop breast feeding compared with mothers living in the safe areas.29 In Bosnia-Herzegovina, illness of mother/baby disrupted breast feeding and a few mothers made a personal decision not to breast feed.35 Other reasons that negatively affected breast feeding practices in conflict affected areas were unavailability of trained healthcare professionals, and disruption in knowledge created by violent conflict.19 29

Misconceptions
Ten studies reported the common misconception among refugees, media and humanitarian workers that mothers produce poor quality, insufficient milk due to malnourishment and stress induced as an impact of war.19–22 29 33 34 37 40 42 These misconceptions led to mothers feeding undiluted animal milk to infants younger than 4 months.20 In Bosnia-Herzegovina and Jordan, health professionals discouraged mothers from breast feeding due to significant maternal weight loss during conflict.19 34 Breast feeding practices of mothers were affected by mental trauma from fighting and due to war-related casualties in male members of the family.20 21 27 29 40
In Bosnia-Herzegovina, infants were less likely to be breast fed for more than 4 months if they resided closer to the area of conflict and if the household was not receiving remittances from abroad.\textsuperscript{25}

Initiation of breast feeding

Studies conducted in Algeria, Jordan and Northern Uganda mentioned factors leading to delayed initiation of breast feeding by refugee mothers as home delivery, C-section, breast pain, discarding initial milk, illiteracy, lack of support from medical staff, previous experience, mother being ill and being the sole person responsible for decision of initiating breast feeding.\textsuperscript{25,26,41} Mothers used pre-lacteal feeds before initiating breast feeding, as colostrum was believed to be of low nutritional value and was considered ‘dirty’ and harmful.\textsuperscript{25,41} The report from Iraq and Greece mentioned that many mothers assumed that their milk was ‘dirty’ because her previously born infant died while breast feeding, resulting in them refraining from breast feeding the next baby.\textsuperscript{40}

Introduction of complementary foods

Early introduction of complementary food and infant formula also led to suboptimal breast feeding practices.\textsuperscript{13,21,33,35,42} They were introduced as early as 1–3 months because of the misconception that breastmilk was not sufficient for meeting the nutritional requirements of the infants.\textsuperscript{21,35} Seven studies focusing mainly on refugees from conflict affected countries, explored reasons for mix feeding or fully artificial feeding infants.\textsuperscript{13,19,21,33,35,40,42} Breast feeding and complementary feeding practices were influenced by religious and cultural determinants and frequent migrations.\textsuperscript{29,33} Studies from Jordan and Bosnia-Herzegovina mentioned about the role of grandmothers in influencing breast feeding and complementary feeding practices.\textsuperscript{13,35} Grandmothers often pressurised mothers to feed BMS (water and herbs) to infants and asked mothers to follow their traditional approach. Moreover, there was a cultural belief that formula milk is safer than breast milk and to introduce complementary feeding early.\textsuperscript{19,40}

Breast milk substitutes

Refugees in Lebanon and Greece considered BMS as necessary food for infants during emergencies and many mothers pursued mixed feeding because of the physician’s prescription of infant formula.\textsuperscript{13,33,42} The study on Syrian refugees in Lebanon stated that in children above 6 months, child refusal of food was due to inadequate knowledge regarding complementary feeding practices and the quantity of solid food that a young child should receive per day.\textsuperscript{21} In Azraq refugee camp in Jordan, poor quality food and lack of iron-rich foods in the market was the reason for low consumption of iron-rich foods by the infants and young children.\textsuperscript{40} In Bosnia-Herzegovina and Lebanon, mothers introduced tea, sugar, water, juice and infant formula in the feeding practice to spend less time breast feeding which negatively influenced the rate of EBF.\textsuperscript{21,35} Two studies mentioned ‘lack of milk’ as the reason for early weaning by mothers,\textsuperscript{33,35} and many mothers wrongly thought that weaning cannot be reversed.\textsuperscript{42} Another reason for suboptimal breast feeding practices, mentioned by four studies from Iraq, Greece, Lebanon and Jordan, was the heavy marketing of artificial feeding and big push from infant formula companies, which made mothers believe that it was better.\textsuperscript{13,14,35,40}

Programmes/interventions

Breast feeding in an emergency is known to be the safest way to protect infants and young children from an increased risk of infection and undernutrition.\textsuperscript{44} To reduce the burden of disease and poor IYCF practices; several programmes were launched in conflict-affected countries by different organisations (WHO, international non-governmental organisations (NGOs) and local NGOs). The interventions were mostly based on the WHO guidelines to promote, protect and support appropriate IYCF practices.

We included 15 studies which reported on promotion of optimal IYCF practices in conflict settings (table 2).\textsuperscript{10,13,14,16–23,32,35,40,43,44} Fourteen were reports\textsuperscript{10,13,14,16–23,32,35,40,43,44} and one was a cross-sectional study.\textsuperscript{35} These programmes were formulated based on literature review, document review and extensive discussions of stakeholders during conferences, through semistructured interviews (eg, open group discussions of mothers/caregivers), and knowledge, attitude and practices surveys. Six studies were conducted in Middle East,\textsuperscript{13,14,19,21–23} four in Africa,\textsuperscript{18,20,32,44} three in Europe,\textsuperscript{10,35,45} one in Asia\textsuperscript{34} and one study was conducted at more than one place, that is, Europe and Asia.\textsuperscript{40} Eight of these focused on refugees,\textsuperscript{13,14,19,21,32,40,43,44} three involved IDPs,\textsuperscript{20,22,24} one reported on both hosts and IDPs,\textsuperscript{41} and three studies failed to report on it.\textsuperscript{18,23,35} Six studies were conducted in refugee camps,\textsuperscript{10,13,21,32,40,43} ‘five in community,’\textsuperscript{10,20,22,24,41} three in both camps as well as in clinics,\textsuperscript{14,19,24} and one study failed to report on it.\textsuperscript{35}

The specific interventions in these programmes included capacity building of healthcare staff, education and awareness activities for mothers, community mobilisation, provision of baby friendly spaces, lactation support services, complementary and safe artificial feeding support services, baby friendly hospital initiative (BFHI) and monitoring and control of BMS.\textsuperscript{10,13,14,16–23,32,35,40,43,44} Five studies focused only on one intervention for promotion of optimal breast feeding practices,\textsuperscript{22–24,35,45} while rest had a multi-pronged approach.\textsuperscript{10,13,14,18–21,32,40,44} Most of the studies/programmes did not evaluate the programmes and its impact on IYCF practices or health and nutrition indicators. A follow-up survey after 3 months of intervention, assessed breast feeding practices among Syrian refugees in Jordan, which showed an increase in breast feeding knowledge from 49.5% in 2013 to 71% in community and 91.2% in health facility in 2014. However, no improvement in breast feeding practices was observed.\textsuperscript{19} Similarly, in Greece, formula
<table>
<thead>
<tr>
<th>Programme</th>
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<th>Setting</th>
<th>Health workforce involved</th>
<th>Programme/intervention details</th>
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<tbody>
<tr>
<td>Capacity building and programme-strengthening projects for health workers (n=7)</td>
<td>IDPs: Sudan, Syria</td>
<td>Camps: Jordan</td>
<td>Trained physician (doctors, nurses)</td>
<td>Training sessions on IYCF, Malnutrition screening and treatment, Continuous follow-up and coordination</td>
<td>Coverage of training: In Lebanon and Syria: &gt;190 doctors and health workers27,29</td>
</tr>
<tr>
<td></td>
<td>Refugees: Jordan, Kenya, Lebanon</td>
<td>Fixed and mobile clinics: Jordan, Lebanon</td>
<td>Paramedic staff (midwives, TBAs)</td>
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<td></td>
<td>Not specified: Greece, Iraq</td>
<td>Community workers (facility and community based IYCF counsellors, local reproductive health worker)</td>
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<td></td>
<td>Camps: Jordan</td>
<td>► Training sessions on IYCF</td>
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<td>► Malnutrition screening and treatment</td>
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<td>► Continuous follow-up and coordination</td>
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<tr>
<td>Education and awareness activities for mothers (n=7)</td>
<td>IDPs: Pakistan</td>
<td>► Coverage of training:</td>
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<td></td>
<td>Refugees: Jordan, Kenya, Lebanon</td>
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<td></td>
<td>Not specified: CAR</td>
<td>► In Jordan: 30–40 mothers counselled/day9, 4690 PLWs and 919 mothers counselled in 10 months17</td>
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<td></td>
<td>Camps: Jordan, Kenya, Lebanon, Pakistan</td>
<td>In Lebanon: 10 000 mothers were counselled in 1 year27</td>
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<td></td>
<td>Community: CAR, Lebanon</td>
<td>In CAR: 758/900 (84.2%) PLW participated16</td>
<td>► Counselling sessions on optimal IYCF-E practices</td>
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<tr>
<td></td>
<td>Fixed and mobile clinics: Jordan, Pakistan</td>
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<td>► Educational materials and counselling cards distributed</td>
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<td></td>
<td>Healthcare facility: Jordan Pakistan</td>
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<td>► Sensitisations on childcare practices and cooking demonstrations given to PLW</td>
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<td></td>
<td>► Trained physician (lactation specialists)</td>
<td>► Distribution of hygiene and baby kits (soaps, blankets, baby spoons and cups for children), and bangles for mothers</td>
<td>► Sensitisations on childcare practices and cooking demonstrations given to PLW</td>
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<th>Health workforce involved</th>
<th>Programme/intervention details</th>
<th>Outcomes</th>
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<tbody>
<tr>
<td>Community networking and mobilisation (n=8)</td>
<td>▶ IDPs: South Sudan, Sudan</td>
<td>▶ Community workers (refugee mothers, community leaders, ‘leader mothers’ (mothers trained by promoters to teach neighbour women), and ‘neighbour women’ (chosen by community as community mobilisers))</td>
<td>▶ Training of community mobilisers by IYCF counsellors, educators, ‘promotors’, programme supervisors and IYCF coordinators on IYCF and the importance of exclusive breast feeding, nutrition</td>
<td>Coverage of health workers training:</td>
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<td></td>
<td>▶ Refugees: Jordan, Kenya, Lebanon</td>
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<td>▶ Dissemination of messages among mothers through household visits, demonstrations and information sharing within care groups</td>
<td>In South Sudan, 320 ‘leader mothers’ trained IYCF</td>
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<td></td>
<td>▶ Not specified: Greece, Iraq, Yemen</td>
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<td>▶ Screening and referring malnourished mothers</td>
<td>Coverage of IYCF counselling</td>
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<td>In Jordan: 4977 PLWs and 31 485 caregivers in 10 months</td>
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<td>In South Sudan: 320 neighbourhood groups, reaching 3832 women</td>
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<td>In Yemen: 50%–60% increase in awareness of mothers/caregivers on nutritious food along with an increase in utilisation of local foods for preparing nutritious meals for infants</td>
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<td>Mass screening and SAM/MAM treatment</td>
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<td>In Yemen: 90% of children &lt;2 years screened for SAM and MAM, 2563 children were treated for SAM, reduction in number of cases of SAM and MAM children; zero cases of SAM (MUAC&lt;115 mm) in 13/68 model villages by the end of the project</td>
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<td>In Sudan: 150 617 children screened for malnutrition</td>
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<td>In Yemen: reduction in bottle feeding to almost zero</td>
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<tr>
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<th>Health workforce involved</th>
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<th>Outcomes</th>
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<tbody>
<tr>
<td>Mother baby friendly spaces and mother to mother support groups (n=10)</td>
<td>IDPs: South Sudan, Sudan</td>
<td>Camps: Albania, Kenya, Lebanon</td>
<td>Trained Physician: paediatrician, lactation consultant</td>
<td>Construction of mother–baby friendly spaces, caravans and mother baby centre for counselling and 24 hours support</td>
<td>Coverage of IYCF counselling in baby friendly spaces and mother-to-mother support groups:</td>
</tr>
<tr>
<td></td>
<td>Refugees: Albania, Croatia, Jordan, Kenya, Lebanon</td>
<td>Caravans: Jordan</td>
<td>Community workers: relief workers, psychosocial workers, paediatrician, lactation consultant, IYCF counsellors and community mobilisers</td>
<td>Formation of mother to mother/caregiver support groups</td>
<td>In Jordan: 15 600 mothers in 18 months in Jordan&lt;sup&gt;9&lt;/sup&gt;</td>
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<td></td>
<td>Not specified: CAR</td>
<td>Community: South Sudan, Sudan</td>
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<td>Distribution of high energy biscuit, a bottle of water, and shawls for privacy</td>
<td>In Kenya: 581 facilitators trained in IYCF&lt;sup&gt;36&lt;/sup&gt;</td>
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<td>Containers: Croatia</td>
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<td>Distribution of food vouchers to mothers for nutritional security and psychological support</td>
<td>In CAR: 199 mothers/caregivers given psychosocial support&lt;sup&gt;16&lt;/sup&gt;</td>
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<td></td>
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<td>Primary healthcare centres: Lebanon</td>
<td></td>
<td>Screening of children for malnutrition</td>
<td>Other outcomes:</td>
</tr>
<tr>
<td>Lactation support service (n=3)</td>
<td>Refugees: Albania, Jordan, Lebanon,</td>
<td>Camps: Albania, Jordan</td>
<td>Trained physician (lactation specialists, obstetrician/gynaecologist)</td>
<td>Assist mothers for re-lactation and in breast feeding difficulties (painful nursing, latching problems, low breast milk production and on correct positioning for feeding)</td>
<td>In Jordan: 120–150 mothers/ day visited baby friendly spaces in Jordan&lt;sup&gt;9&lt;/sup&gt;</td>
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<td>Community: Lebanon</td>
<td>Paramedic staff (midwives)</td>
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<td>In Jordan: 50 women attended support group gatherings&lt;sup&gt;17&lt;/sup&gt;</td>
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<td>In Sudan: 14 272 infant/mother pairs attended MtMSG &lt;sup&gt;42&lt;/sup&gt;</td>
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<td>In Kenya: 713 MtMSG (2801 mothers/caregivers in MtMSG) &lt;sup&gt;36&lt;/sup&gt;</td>
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<tr>
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<tbody>
<tr>
<td>Baby friendly hospital initiative (n=2)</td>
<td>Refugees: Lebanon</td>
<td>Camps: Lebanon</td>
<td>Not specified</td>
<td>Labelling of maternity wards as ‘baby-friendly’ to support breast feeding</td>
<td>In Bosnia-Herzegovina, from 1997 to 1999: Predominant breast feeding increased from 64.3% to 77.3% Continued breast feeding at 2 years increased from 8.5% to 40.7%</td>
</tr>
<tr>
<td>Breast milk substitutes (n=5)</td>
<td>Refugees: Jordan, Lebanon</td>
<td>Camps: Greece, Iraq, Jordan and Lebanon</td>
<td>Trained physician (lactation specialists and obstetrician/gynaecologist) Paramedic staff (IYCF midwife)</td>
<td>Training of healthcare staff and mothers on artificial feeding Counselling of mothers on importance of breast feeding, appropriate use of infant formula and on adverse effects of artificial feeding on infant’s health Monitor and control the distribution of infant formula Provision of BMS supplies and kits (cups and clean water) for safe preparation of infant formula</td>
<td>In Lebanon: 50 infants were assisted with artificial feeding support In Jordan: seven mothers received artificial milk supplies</td>
</tr>
</tbody>
</table>

BMS, breast milk substitutes; CAR, Central African Republic; EBF, exclusive breast feeding; IDPs, internally displaced persons; IYCF, infant and young child feeding; IYCF-E, infant and young child feeding in emergencies; MAM, moderate acute malnutrition; MtMSG, mother to mother support groups; PLWs, pregnant and lactating women; SAM, severe acute malnutrition; TBAs, traditional birth attendants.
use in the refugee camps decreased from 60% to 0% within 6 months, through their IYCF programme in emergencies.40

**Implementation guidelines**

We included 30 implementation guidelines by different organisations in our review, mentioning key policies and operational guidelines to be followed during conflicts to ensure optimal IYCF practices.1 2 6 29 30 33 42 45–68 Eight guidelines were by international NGOs,1 30 33 42 46 51 59 67 nine by United Nations agencies,6 47 50 53 55–57 65 66 and three by academic organisations,48 49 64 while ten guidelines were formulated by collaboration between developmental partners and international NGOs.2 6 26 45 52 54 58 60–63

These implementation guidelines were formulated after conducting random cluster surveys (including quantitative and qualitative analysis), meetings to gathering empirical evidence, past emergency experiences and technical guidance from community, stakeholders, development and implementation partners (online supplementary appendix table 1).

We included implementation guidelines from 1981 through 2018. Only one guideline was from 1981 to 1990, one was from 1991 to 2000,30 47 51 53 54 66 67 12 were from 2001 to 2010,2 6 26 42 46 49 52 55 56 62 63 68 and 10 were from 2011 to 2018.1 26 32 45 57–59 61 64 65 These guidelines focused on refugees and IDPs affected by conflict. We summarised these operational guidelines from different organisations, to be used during conflict settings, using the components from ‘WHO’s guiding principles for feeding infants and young children during emergencies’6 (figure 4).

**Breast feeding**

The guidelines on protecting, promoting and supporting breast feeding were mentioned by 28 publications.1 2 6 26 30 33 42 45–55 57–67 They recommend to practice EBF till 6 months of age, followed by frequent breast feeding until 2 years, along with complementary feeding to protect babies from infection, especially in crisis situations. There should be formation of practical guidelines, capacity building of healthcare staff and continuous flow of funds for the sustainability of programmes.

General population (including mothers) should be educated on breast feeding, its benefits, colostrum use, feeding methods and consequences of artificial feeding.

Figure 4 Implementation guidelines.
based on ‘UNICEF/WHO Baby Friendly Hospital’s initiative’s Ten Steps to breast feeding’. Moreover, mothers should be counselled not to stop breast feeding in emergency situations, sickness and when malnourished. They should be encouraged to practice skin-to-skin contact, initiate breast feeding within the first hour of birth, and use of pacifiers, artificial nipples and oestrogen containing contraceptive pills should be discouraged. Guidelines also recommend formation of baby friendly spaces and mother to mother support groups to encourage breast feeding and privacy. There should be a system set in place for identification of newly arriving mothers and children, registration for rations and referral for immediate assistance. Mothers should be facilitated for re-lactation if separated from the baby or experiencing difficulties in breast feeding. When natural breast feeding is not possible, wet-nursing and the use of milk banks should be considered before providing infant formula or home-modified milk.

**Breast milk substitutes**

Twenty-six guidelines reported on the use of BMS in emergency situations. Donations, procurement, promotion (through advertisements and gifts) and distribution of BMS, bottles and teats should be strictly controlled and should comply with the International Code and World Health Assembly regulations, and all violations should be reported (see box 2). The distribution should be managed by a single designated agency and blanket distribution of BMS should be discouraged in emergency situations, especially where hygienic conditions cannot be ensured.

BMS are not recommended for children under 6 months of age and should only be distributed to infants who have no other viable breast milk options that is, orphans, severe maternal illness or malnutrition (based on established criteria—where distribution can be targeted, the supply chain is secure, and the conditions for safe preparation and use can be met), determined by a qualified health worker trained in IYCF. There should be training of workforce handling BMS and demonstrations should be given to mothers on proper and safe use of infant formula, followed by regular infant health and growth monitoring. Availability of fuel, safe water and equipment should be ensured before BMS distribution and mothers should be advised to use cups instead of bottles for feeding. Moreover, it should be ensured that distribution of BMS to the targeted infant continues for as long as the infant needs (at least 6 months).

Infant formula (generic, unbranded formula) should be distributed with labels in the local language to the infants in need. These labels should have clear instructions on its safe preparation, along with stating the importance of breast milk. Infant formula should not be excluded from the commodities that a mother can access via cash/voucher schemes, but it should have clear information on superiority of breast feeding. For infants under 6 months of age, the only suitable BMS is infant formula and condensed milk should not be used for infant feeding and home-modified milk should be the last resort.

Relief workers should ensure that milk products are received and distributed in a dry form and dried milk products are distributed only when premixed with a milled staple food and should not be distributed as a single commodity. Moreover, it should be ensured that dried skimmed milk is not given to infants and for older children, it should be given after fortifying it with vitamin A. Relief and healthcare workers should counsel mothers to avoid baby juices and teas, and they should take appropriate measures to reduce spill-over by ensuring that feeding BMS to a minority of children does

### Box 2 Violation of IYCF-emergency guidelines in conflict settings (case studies)

**Case study 1: campaigning by Bledina company during Hezbollah–Israel conflict, 2006: Lebanon**

A marketing campaign by Bledina (production company of infant formula and complementary foods), after the war in 2006 in Beirut, offered mothers gifts packages containing promotional leaflets. The attending paediatrician also gave mothers a card with the Bledina hotline. Moreover, free Bledina gift packages were also distributed at a health centre which had a high number of refugees, as a promotional campaign after the war, which was a violation of the IYCF-emergency guidelines.

**Case study 2: civil unrest, 2002: East Timor**

Healthcare facilities in Dili distributed infant formula donated by a service organisation to assist infants who have been orphaned and mothers who are unable to breast feed, which was a violation of the guidelines because healthcare facilities should not distribute infant formula as it can be wrongly interpreted as them promoting the products, even if they are doing so to meet the needs of the targeted population.

**Case study 3: Israel–Hezbollah conflict, 2006: Lebanon**

1. During the Lebanon conflict, an NGO violated the IYCF-emergency guidelines by distributing 1500 ‘baby kits’, including infant formula and bottles, directly to displaced households, as well as to hospitals and local municipalities. Even after the conflict, the same NGO distributed ‘village kits’ containing infant formula (25 boxes containing 24 cans each) and baby food (80 units) along with other items to each village municipality.

2. Another violation was the donation of infant formula to the healthcare facilities by an international NGO during the Lebanon conflict.

3. Moreover, one local NGO distributed the infant formula among the displaced population, without clearly specifying on the tins that it should only be used on the advice of a health worker thus violating the labelling requirements, and promoting infant formula use.

4. Another violation occurred when single tins/samples of infant formula were distributed to mothers by health workers, without the undertaking that the infant formula supplies would continue for as long as the concerned infant needs them.

**Case study 4: Israel–Hezbollah conflict, 2006: Lebanon**

1. The formulas received by Lebanese government organisations and NGOs had labels written in English and/or Greek, instead of the local language, Arabic.

2. One local NGO distributed infant formula, advertising and promoting artificial feeding, which was in violation of labelling requirements.

IYCF, infant and young child feeding; NGO, non-government organisation.
not undermine breast feeding practices of the majority. In case of unfavourable circumstances for BMS distribution, an on-site supplementary ‘wet’ feeding programme should be conducted in closed spaces under supervision.

Complementary feeding
Eighteen guidelines reported on complementary feeding in infants and young children 6–24 months of age.1 4 6 26 42 45 48 49 51 54 55 57–59 61–65 For normal growth and development of infants and children (>6 months), easily digestible complementary foods should be started along with continuation of breast milk. Discussions should be conducted in groups, and mothers should be encouraged to increase the frequency and variety of complementary food with the growing age of child to meet their nutritional demands. Mothers should be encouraged to use locally produced, inexpensive complementary foods. However, in emergency situations, micronutrient fortified blended foods, ready-to-use supplementary foods, lipid based nutrient supplements or ferrous sulphate iron solution (iron drops) can be used depending on nutritional situation. Relief workers should ensure that complementary food products are labelled in local language with instructions on preparation and do not have the images of bottle feeding on them, and donations of complementary foods, baby teas or juices should be refused. For children over the age of 12 months, it is recommended that they should eat the same food as older children. If safe complementary foods are not available, mothers should be advised to continue breast feeding.

Caring for caregivers and protecting children
Thirteen guidelines reported on caring for caregivers during emergencies1 6 57 45 52 58 60–62 64–67 and nine reported on protecting children.1 35 45 48 49 52 57–59 61 62 64 67 Guidelines recommend provision of psychological support and empowering mothers during crisis and advising them to continue breast feeding (via milk expression). It should be ensured that infants are screened for childhood illnesses and mothers of artificially fed infants have access to cleaning facilities for washing utensils for safe preparation of BMS as artificially fed infants are known to be at a greater risk of malnutrition, diarrhoea and chest infections. If an infant is ill with reduced appetite, they should eat the same food as older children. If safe complementary foods are not available, mothers should be advised to continue breast feeding.

Malnutrition
Nine guidelines reported on management of malnutrition in infants and young children during emergencies.1 6 52 54 55 58 60 65 67 Guidelines recommend continuous monitoring of nutritional status of mothers, infants and young children with the purpose of identifying, assessing, preventing and treating malnourished mothers and children. Malnutrition treatment and prevention programmes should incorporate and prioritise IYCF in their agenda as the risk can be decreased with optimal IYCF practices. Education should be provided to community support networks on the prevention and treatment of acute malnutrition and care/voucher programmes should be introduced. For prevention of malnutrition, micronutrients should be distributed to all pregnant and lactating women in form of powders and tablets. It is recommended to identify malnourished children through regular monitoring and they should be referred and admitted along with their mothers to a nutritional rehabilitation programme in case of severe malnourishment. In crisis situations, supplementary feeding should be the primary strategy for prevention and treatment of moderate acute malnutrition and pre-formulated therapeutic milk products or dried skimmed milk can be used to treat severe acute malnutrition.

Acute phase of emergencies
Twelve guidelines reported on interventions to be undertaken during the acute phase of emergencies.1 2 6 42 45 51 55 58 61 62 64 67 In case of an emergency, interventions should start immediately with focus on capacity building to improve IYCF practices, supporting caregivers and catering to nutritional needs of children in order to minimise the negative impact of emergency. In places with prior high infant formula use, appropriate interventions should be undertaken by relevant organisations to increase prevalence of appropriate IYCF practices and increase the rate of EBF. Measures should be taken to monitor BMS donations and distribution during the early phases of emergencies. Moreover, mothers should be educated and encouraged to breast feed every 2–3 hours at breast feeding stations scattered across the refugee sites. If mothers are experiencing difficulty in breast feeding, chlorpromazine can be used to stimulate milk production and wet-nursing and milk banks can also be used as an alternative to BMS.

Assessment, intervention and monitoring
Fifteen guidelines mentioned assessment, intervention and monitoring during emergencies.1 2 6 26 45 51 52 57–61 64 65 67 There should be a regular systematic monitoring to track BMS distribution and careful monitoring of optimal feeding and nutritional status of infants and young children. It is recommended to conduct weight monitoring, assess intake, urination frequency and activity level for those receiving BMS. Healthcare staff should use qualitative as well as quantitative methods to gather data regarding pre-crisis practices, demographics, morbidity, mortality, malnutrition and current IYCF practices.

Breast feeding and HIV
Ten guidelines reported on breast feeding in HIV situations.1 4 5 7 14 47 55–58 60 63 67 Guidelines recommend that appropriate measures should be undertaken to prevent mother-to-child transmission of HIV, and improve child survival from HIV. If the mother’s HIV status is negative or unknown (or HIV testing is not available), she should
be advised to continue age appropriate breast feeding and replacement feeding should only be supported if is acceptable, feasible, affordable, sustainable and safe. For sustainable access to medical care, HIV positive mothers should be provided with antiretroviral treatment and even in case of unavailability, breast feeding should be continued.

If HIV-positive mothers choose not to breast feed the infant, appropriate BMS should be provided along with counselling on the risks of mixed feeding and artificial feeding. Wet nursing should also be considered in cases of HIV-positive mothers and wet nurse should be counselled on prevention of disease transmission. IYCF staff should make supportive arrangements for HIV-positive mothers to build confidence, reduce isolation, encourage age appropriate feeding and educate the family members to provide full support to the mothers and conduct regular follow-ups. Furthermore, activities related to prevention/elimination of mother-to-child transmission should be regularly done as part of nutritional interventions and the measures taken by IYCF staff should be sensitive.

**DISCUSSION**

This review included a total of 56 primary studies, comprising 11 published articles and 45 reports from grey literature. The included studies covered IYCF practices, programmes and guidelines for the countries affected by armed conflict. The review shows that the coverage of IYCF practices are low in conflict settings; with only half of the children receiving early initiation of breast feeding and only a quarter being exclusively breast fed. The other IYCF indicators are also not encouraging, with high rates of bottle feeding.

The low IYCF indicators can be attributed to a multitude of factors in conflict settings which may also exist in non-conflict settings, though armed conflicts tend to aggravate and amplify these and there are also factors unique to conflict settings. Displacement, stress, maternal malnourishment, lack of awareness and unavailability of trained healthcare professionals, are all reasons contributing to poor IYCF. The death of the male members within the family also poses an additional barrier, as apart from increased maternal mental stress, it also leads to additional maternal responsibilities. This in turn may compromise the mothers’ ability to provide attention to their children. The review highlights certain misconceptions in the community that contribute to the misguided belief that maternal malnourishment and stress lead to insufficient quantity and quality of breast milk and may stimulate the undesired use of BMS. Additionally, in some instances health workers due to their lack of awareness and knowledge, advocated for and prescribed BMS resulting in the unregulated marketing, provision and distribution of BMS.

The evidence from this review suggests that there is a need to enhance the capacity of health workers and to improve their communication with the community by using various channels including pictorials, videos or face to face meetings. Though various programmes have been initiated in conflict settings, unfortunately, none of them have been formally evaluated to gauge the impact of these different approaches on IYCF indicators. As discussed in the review, the major evidence and recommendations derived from the experiences of the various implementation agencies working in such contexts rather than from scientific evaluation of programmes. These guidelines suggest that first and foremost, the importance of IYCF should be underscored and it should be a top priority for improving the health of children in conflict settings. There should be early dissemination of policies to all concerned agencies and healthcare workers and steps should be taken to register women and mothers in camps, as IDPs or as residents of conflict-inflicted areas. The educational approaches should be drafted with specific messages to alleviate the context-specific misconceptions within the community. There is evidence from various communications platforms which could be used to spread relevant messages including women support groups, involving prominent community members, designing pictorials, brochures or videos. The need for designated places like feeding tents was also emphasised as these could provide personal spaces for women to feed their children, seek support from peers and also use them as avenues for skin to skin care for preterm and low birth weight infants.

The provision of clean hygienic utensils and safe drinking water should also be ensured for preparing complementary feeds. The guidelines also emphasise the need for strengthening BFHI in the functioning health facilities. Apart from access to required healthcare, mothers should also be provided with lactation and psychological support. The factors identified which negatively affect IYCF practices include, high turnover rate of health workers, lack of funds, poor multi-sectoral coordination, poor monitoring and evaluation system, more focus on malnutrition treatment than prevention, strengthened marketing efforts of BMS by industries, and poor capacity at community level.

The additional approaches identified included ‘wet nurse’ and ‘milk banks’ which could be sought after confirmation from specialists solely for mothers who were unable to breast feed. BMS should be treated as the last resort and efforts should be put in place that allow for stringent regulatory checks on BMS, nipples and pacifiers. All of the commodities in a conflict setting should flow through a common medium and designated agency/agencies, who should be responsible for controlling donations and distributing appropriately labelled infant formula, and any violation to these should be reported with timely action taken.

The major strength of our review is that it systematically looks at various areas of IYCF which includes current IYCF practices, specific barriers and strategies to improve breast feeding and complementary feeding using evidence from implementation guidelines. The limitations of our review include restricted access to studies conducted by various NGOs/agencies as most of them do not report and inclusion of articles was limited to English language only and...
only three studies were included from conflict-affected countries in the Asian region. Some of the included studies missed on reporting important information like reporting on study context (eg, year and scale of conflict/surveys), outcomes, process indicators and programme impact. Hence, there is a critical need of further research on the process of implementation, effectiveness of IYCF interventions and cost effectiveness of these interventions in conflict settings.

To ensure effective scale-up of interventions for promotion of IYCF in conflict settings, the emphasis of the stakeholders should be on advocacy and implementation of evidence-based context specific interventions. A multi-sectoral approach together with stringent monitoring and evaluation mechanisms should be in place with capacity building and accountability.

Correction notice  The license type of the paper has changed from CC BY-NC to CC BY.

Contributors ZB and JKD conceived the idea of the review. ZAP developed the search strategy. AR, ZAP and FAS conducted the search and data extraction with specific inputs from JK D. AR, ZAP and JKD developed the first draft of the paper. ZB and JKD reviewed and finalised the final manuscript.

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## Appendix

Table 1: operational guidelines for IYCF in conflict

<table>
<thead>
<tr>
<th>Components of breastfeeding</th>
<th>Operational Guidelines</th>
</tr>
</thead>
</table>
| I. Protecting, promoting and supporting breastfeeding | 1. Infants should be exclusively breast fed for the first 6 months of life, followed by appropriate complementary feeding along with continued breastfeeding for two\textsuperscript{14}.
2. Relief agencies should create internationally-coordinated breastfeeding policies with practical guidelines explicitly stated for field workers and decision\textsuperscript{2, 7, 10, 12, 13, 15, 16}.
3. National policies and technical guidelines on IYCF- E should be explicitly stated and communicated to relevant staff in order to increase preparedness if an emergency strikes. This is particularly important for high-risk countries\textsuperscript{2, 12, 13, 17, 18}.
4. Funding should be provided for programs to support breastfeeding\textsuperscript{2, 13, 19}.
5. It should be ensured that optimal breastfeeding practices and maternal care is promoted according to ‘UNICEF/WHO Baby Friendly Hospital Initiative’s Ten Steps to Successful Breastfeeding’\textsuperscript{2, 10, 20}.
6. Ensure that relief workers, healthcare staff, technical and non-technical personnel are trained in appropriate infant and young child feeding practices using available training material and key information on IYCF integrated into routine assessment\textsuperscript{2, 7, 10, 12-16, 20-23}.
7. Appropriate and timely support and trainings for breastfeeding and young child feeding should be integrated at all levels of healthcare\textsuperscript{2, 16, 21, 23}.
8. Efforts should be made to raise awareness supporting the superiority of breastfeeding as a life-saving intervention to health personnel, relief staff, NGOs, stakeholders and the general public focusing primarily on pregnant and breastfeeding women\textsuperscript{2, 10, 12, 20, 22, 24, 25}.
9. In conflict and refugee settings, traditional birth attendants (TBAs) are more accessible to mothers than nurses and midwives, therefore TBAs should be trained regarding appropriate breastfeeding practices\textsuperscript{17, 20, 24}.
10. Pregnant women and breastfeeding mothers should be informed using clear language about maternal health, how to properly breast feed, advantages and maintenance of breastfeeding, negative effects of bottle-feeding and the difficulty to reverse decision not to breastfeed\textsuperscript{2, 6, 7, 10, 14, 17, 20, 22, 24, 25}.
11. Encourage mothers to initiate breastfeeding within the first hour of birth, and to exclusively breastfeed for the first six months of life (do not give them extra water, juices, tea or food) unless medically indicated otherwise. Thereafter, solid foods should be introduced, but breastfeeding should continue for at least a year or two\textsuperscript{6, 7, 10, 11, 14, 15, 17, 26}.
12. Educate mothers to not stop breastfeeding in emergency situations and spread awareness that exclusive breastfeeding provides the best nutrition to babies. Moreover, breastmilk contains ingredients that protects babies from infection, so it’s particularly useful in emergency situations\textsuperscript{6, 10, 13, 15, 17}.
13. Encourage mothers to breastfeed on demand\textsuperscript{2, 7, 14, 17}.
14. Practice rooming-in of infants and their mothers (allow mothers and infants to remain together 24 hours a day) to support breastfeeding practice\textsuperscript{2, 7}.
15. Colostrum should be given to the baby to improve its physical growth and feeding baby should not be interrupted in between. The baby lets go off the breast when he/she is done\textsuperscript{10, 17, 26}.
16. Discourage the use of artificial nipples or pacifiers\textsuperscript{2, 7, 10, 24}. |

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17. Educate mothers on breastfeeding and the procedure to maintain lactation even when the mother-infant pair is temporarily separated. 

18. Ensure that mothers are facilitated by the provision of counseling and other forms of assistance for the purpose of re-lactation or difficulty in breastfeeding.

19. Mothers should also be made aware that breast milk supply is not reduced by stress, though the release of milk could be affected.

20. Encourage mothers to practice skin to skin contact as this aids in reducing stress (cortisol) levels and helps the flow of mother’s milk. This can be practiced using slings and wraps. Moreover, correct positioning of baby during breastfeeding is important as effective suckling also triggers breast milk production.

21. Malnourished mothers can produce enough milk to breastfeed, however, she should be treated for malnourishment.

22. Relief workers should provide nutritional support by giving a general ration to pregnant and lactating women. If full general ration is not possible, then food and micronutrient supplements should be sufficiently provided. This is because an optimally fed mother will be able to optimally feed her infant. Give adequate food to the malnourished mother to prevent depletion of her own nutrients and closely monitor the weight and urine production of the infant.

23. In emergency settings, extra breastfeeding support should be provided by encouraging Baby Friendly Spaces, which provide a platform to support mothers/caregivers and promote appropriate infant and young children feeding practices, privacy and safety.

24. For refugees and displaced populations, establish rest areas for pregnant women/caregivers/mothers and children in transit. These should be secluded, private and culturally appropriate areas that assist women and children to relax and nurse.

25. Establish a program to encourage mother to mother/women to women support.

26. Establish registration of newborn infants, i.e. within two weeks of delivery, to ensure timely additional rations and breastfeeding support for lactating and breastfeeding mothers. Nutrition workers should help mothers to establish exclusive breastfeeding.

27. Vulnerable groups, especially newly arriving mothers and infants with severe feeding problems should be identified and referred for immediate assistance.

28. Create referral and follow-up systems for mothers/caregivers and their infants.

29. Avoid giving estrogen containing contraceptive pills to mothers because they decrease breastmilk production.

30. Encourage mothers to build their confidence which leads to production of oxytocin to improve blood flow.

31. Continue to breastfeed sick children or when they are less hungry. In case they are not hungry then put them to breast more repeatedly to ensure that they take enough breastmilk.

32. When natural breastfeeding is not possible, available alternatives should be evaluated before an appropriate choice is made. This may include evaluating between: wet-nursing, the use of milk bank, home-modified milk and the use of locally purchased commercial infant formula or generic unbranded infant formula.

33. Access to infant formula should be based on the guidelines set by the WHO International Code of Marketing of Breast Milk Substitutes, 1981.

34. Support should be provided for artificial feeding and this should be distinct from the support being provided for breastfeeding.

35. Lactating women can take most medicines (including antibiotics) and can be immunized as well, as recommended for adults and adolescents to protect against infectious diseases (measles, mumps, rubella, tetanus, diphtheria, pertussis, influenza, Streptococcus pneumoniae, Neisseria meningitidis, hepatitis A, hepatitis B, varicella, and inactivated polio).

36. In case of radiation exposure...
a. Women who were exposed to radiation should be advised to temporarily stop breastfeeding unless there is no other source of feeding available for the infant. These mothers should pump and discard their milk until the infant can resume breastfeeding.
b. In case of interruption of breastfeeding, preferred source of infant feed is human milk that was pumped and stored prior to the radiation exposure or ready-to-feed infant formula. Mothers should use powdered or concentrated formula only if they are sure that water used to reconstitute is free from radiation.
c. Mothers can resume breastfeeding when advised by local health officials or when they have been evacuated from the radiation affected area.
d. Mothers do not need to stop breastfeeding if both mother and infant have been given appropriate doses of potassium iodide at the right time, according to the advice of local health officials.  

II. Protecting non-breastfed infants and minimizing the risks of artificial feeding

<p>| | |</p>
<table>
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<tr>
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<tbody>
<tr>
<td>1</td>
<td>Breast milk substitute (BMS) is not recommended for children &lt;6 months of age.</td>
</tr>
<tr>
<td>2</td>
<td>Procurement, management and distribution of breastmilk substitutes, bottles and teats, and commercial complementary foods should be controlled during emergencies and should comply with the ‘no bottle’ policy and International Code and WHA guidelines and violations should be reported.</td>
</tr>
<tr>
<td>3</td>
<td>Procure BMS after conducting need assessment of artificial feeding at population level assessment. It may also include nutrition survey, household and community survey. This is recommended to be done in close collaboration with government bodies and by developing Program Cooperation Agreements (PCAs) with local bodies for task implementation.</td>
</tr>
<tr>
<td>4</td>
<td>On distribution of BMS, it should be ensured that workforce involved should have enough capacity for assessment, counselling, supply chain management and in providing support to families on WASH and IYCF practices.</td>
</tr>
<tr>
<td>5</td>
<td>Donations of free or subsidized breast-milk substitutes, bottles and teats and commercial baby foods at emergency sites should be refused and advocated against as this could put infants lives at risk and undermine breastfeeding practices.</td>
</tr>
<tr>
<td>6</td>
<td>The distribution, use and quantity of breast milk substitutes should be controlled by collecting unsolicited donations from all ports of entry and the recipient agencies, and should be stored and managed centrally by a single designated agency.</td>
</tr>
<tr>
<td>7</td>
<td>BMS should only be distributed to the infants who really need it and have no viable breastmilk options, based on established criteria (where distribution can be targeted, the supply chain is secure, and the conditions for safe preparation and use can be met). This should be determined by a qualified health or nutrition worker trained in breastfeeding and infant feeding issues.</td>
</tr>
<tr>
<td>8</td>
<td>Breast-milk substitutes, milk products, bottles and teats should never be part of a general or blanket distribution and their use should be avoided, especially in case of emergency situations or in situations where hygienic conditions can’t be ensured and their use should be discouraged. Bottles should be exchanged for cups instead as it’s easier to keep them clean.</td>
</tr>
<tr>
<td>9</td>
<td>Promotion of breast-milk substitutes at the point of distribution should be strictly discouraged. There should be no advertisement or display of products or items with milk company logos and BMS supplies should not be used as a sales inducement and there should be no provision of single tins/samples of BMS or gifts to mothers. Moreover, no incentives should be offered by manufacturers to health workers to promote BMS products.</td>
</tr>
<tr>
<td>10</td>
<td>In case of crisis, WHO developmental partners and/or the designated nutrition co-ordinating agency should train as well as support training of staff and mothers on the proper and safe use of infant formula.</td>
</tr>
</tbody>
</table>
| 11 | When the use of infant formula is indicated, before its distribution, mothers and caregivers responsible for feeding should be educated on the specific care needed by a non-breast fed infant, and given practical training and one-
12. There should be regular follow-up visits, to caregivers of targeted infants receiving BMS comprising of regular infant health and growth monitoring and distribution of BMS should be frequent and regular (at least bimonthly), with minimum delays.

13. It should also be ensured that there is availability of fuel, safe water and sanitation and equipment for safe preparation of BMS in the house, prior to distribution of BMS and implementing a household based program.

14. For infants determined to be in need of infant formula, the adequate and continued provision of infant formula must continue for as long as they require it, even if it needs to be purchased. IYCF-E programs that include an infant formula provision component should plan to provide it for at least 6 months, or if there is no availability of adequate complementary food, then 12 months.

15. Non-breastfed infants over 6 months of age, provided with 6 months of BMS, may require 2-4 weeks of buffer supply to offer transition to non BMS feeding.

16. An improvement should be brought about in health services to manage the adverse effects of artificial feeding, especially the increase in incidence of severe diarrhea and respiratory infections in infants.

17. Generic, unbranded formula is recommended for infants who require infant formula, followed by locally purchased and relabeled infant formula (to be in compliance with The International Code). Home modified milk should only be used temporarily as the last resort for infants less than 6 months old. The type of infant formula should have a shelf life of at least 6 months and be appropriate for the infant, including their age.

18. Labels must adhere to the specific labelling requirements of The International Code and should be in the language of the local population. The BMS packaging should have clear instructions, with pictures, on how to use it, along with clearly specifying the superiority of breast milk.

19. The labels should include a sign of “Important Notice” stating importance of breastfeeding and a statement stating, “The product should be used only on the advice of a health worker as to the need for its use and the proper method of use.” They instructions should also state about its safe preparation and health hazard on inappropriate use, and a warning against the health hazards on inappropriate preparation of infant formula.

20. Supply department should assure that BMS manufactured should follow Codex Alimentarius standards. UNICEF has not included BMS in its supply catalogue as a non-standard product.

21. For infants under 6 months of age, the only suitable BMS is infant formula. However, infants over the age of 6 months do not need infant formula but can use other sources of milk (pasteurized full-cream animal milk (cow, goat, sheep), Ultra High Temperature (UHT) milk, fermented milk or yogurt) as these are easier to find and are less dangerous than powdered milk. Condensed milk should not be used for infant feeding.

22. Liquid milk, if being used, should be consumed within a few hours of opening. Baby juices and teas should be avoided as they are low in nutrition and high in sugar. For infants over 6 months of age, infant formula can be mixed into the child’s food instead of giving it to drink.

23. Milk products should only be received and distributed in a dry form and even dried milk products should be distributed only when pre-mixed with a milled staple food and should not be distributed as a single commodity. However, dried skim milk is not an appropriate BMS for infant, and even for older children it must be fortified with vitamin A and not given on its own.

24. It should be ensured that there are no spill-over risks of infant formula provision. Measures should be taken to reduce spill-over by ensuring that feeding BMS to a minority of children doesn’t undermine breastfeeding practices of the majority. Advertising of infant formula should be stopped, and the provision of infant formula should be discrete, monetary support should be
| III. Protecting, promoting and supporting appropriate, safe and timely complementary feeding | provided to breastfeeding mothers, and a separate space dedicated for breastfeeding support and counseling<sup>1, 2, 4, 6, 10, 12, 19, 23</sup>
| 25. When circumstances are not favorable for BMS distribution (safe preparation and use of infant formula can’t be ensured), an on-site supplementary “wet” feeding program should be conducted in closed spaces under supervision<sup>4, 7, 21, 23</sup>
| 26. Infant formula should not be excluded from the commodities that a mother can access via general cash/voucher schemes. However, it should be accompanied by interventions such as providing essential information on breastfeeding and on how to reduce the risks of formula feeding<sup>6</sup>
| 27. Breast milk donations should be authorized and be regulated by the Ministry of Health. Until the arrival of the beneficiary, cold chain should be maintained for donated frozen breast milk<sup>2, 26, 28</sup>
| 28. The psychosocial impact of discontinued breastfeeding on children whose mothers have died or are no longer able to breastfeed should also be considered and support services should be set up to address this<sup>12, 16</sup>
| 29. One guideline mentioned that it should be known and taken care of that transitioning out from an emergency IYCF-E program with an infant formula provision component requires a solid, long-term exit strategy with ties to both facility and community-based structures<sup>12</sup>

| 1. To promote growth and development of infants, encourage appropriate, timely and safe complementary feeding for infants (aged > 6 months) and young children (aged between 12 to < 24 months), along with continued breastfeeding<sup>1, 7, 9, 11, 12, 14, 18, 23</sup>
| 2. Children over the age of 6 months of age should be given complementary foods (solid, semi-solid and soft foods) that are easy to eat and digest and nutritionally complement breast milk<sup>1, 2, 6, 18</sup>
| 3. Conduct discussion in groups on complementary feeding and weaning<sup>26</sup>
| 4. Promote the growth of locally produced food and encourage mothers/caregivers to use these locally-produced, inexpensive foods for complementary feeding. These include basic food commodities, such as: fruits, vegetables, rice, beans and lentils<sup>9, 12, 18, 23</sup>
| 5. Increase frequency and variety of complementary food with the growing age of child to meet his/her nutritional needs<sup>16</sup>
| 6. In emergencies, locally produced foods, micro-nutrient fortified blended foods, ferrous sulphate iron solution (iron drops), Ready-to-Use Supplementary Foods (RUSFs) or Lipid based Nutrient Supplements (LNS) can be used for complementary feeding depending on the nutritional situation<sup>12, 18, 23, 28</sup>
| 7. Special attention must be given to ensure that the food ration distributed for old infants and young children have an adequate nutritional value (food should be fortified with vitamins and minerals<sup>4, 6, 16, 20, 23</sup>
| 8. Establish services to extend nutritional support to vulnerable groups, such as: orphans and unaccompanied infants and young children<sup>6, 12, 15, 16, 21, 23</sup>
| 9. Promote hygienic preparation of complementary foods by providing mothers/caregivers necessary information and support<sup>6, 23</sup>
| 10. In emergencies, special consideration should be made to mitigate the obstacles faced by mothers/caregivers in the preparation (cook, mash, etc.) of age-appropriate complementary foods. Measures needed to counter these obstacles should be incorporated in the program design<sup>6, 12, 16</sup>
| 11. IYCF-E programs relating to complementary feeding should include:
  a. Group sensitization and education
  b. Develop local food recipes focusing on nutritional value, affordability and food dietary diversity
  c. Provide cooking demonstrations, and
  d. Support mothers/caregivers to prepare complementary foods via initiatives such as fresh food vouchers<sup>12</sup>
| 12. Dependence upon commercially-produced complementary foods should be avoided<sup>9, 23</sup>
| 13. Mothers should be assured that in the absence of safe complementary foods, breastmilk is a significant source of nutrition for infants the first year of life and beyond<sup>15</sup>
14. Donations of complementary foods, baby teas, or juices should be refused. If there are donated supplies, they should be directed to the designated coordinating agency on nutrition/health to be managed appropriately.  
15. Promotion of a varied diet, dairy products in particular, to ensure that energy, protein, mineral and vitamin requirements are met. Moreover, when preparing food for infants such as porridges, mashed potatoes, etc., milk and infant formula can be added to it to increase the nutrient content.  
16. Pastoral communities mainly use milk and milk products, which contains a significant amount of nutrition for children over six months. As a part of complementary feeding, milk (such as animal milk) and milk products (such as yoghurt) can be provided to infants over 6 months of age. In such cases, distribution of milk products can only be conducted in controlled environments under strict supervision, such as on-the-spot feeding.  
17. Good nutrient sources for infants are animal source foods, such as yogurt and cheese whereas products containing only fruits/vegetables are less energy and nutrient dense. Baby teas and juices should not be given to infants as they do not have much nutrient value.  
18. Complementary food products should be labelled in the language of the targeted population and be acceptable to them, according to their culture. The products should also have information on how to prepare the food.  
19. Moreover, these products should not have images of bottle feeding on them or recommend it in any way.  
20. If needed, commercial 'baby' foods should be purchased and distributed to mothers or products recommended to mothers, for infants over 6 months of age, that have the most nutritional value.  
21. It is recommended that children over the age of 12 months eat the same foods as older children.  

### IV. Caring for Care-givers

1. Efforts should be made to increase caregivers' coping capacity because the number of caregivers is often reduced during emergencies and stress levels increase, so psychological support and encouragement plays an important role in enhancing optimal IYCF-E practices.  
2. Treat the mother during illness, keep the infant close to the mother and do not stop breastfeeding. The mother should be educated on the appropriate method of milk expression as she can maintain breastmilk flow through milk expression.  
3. Breastfeeding mothers require identification, protection and active support. Conflict situations and displacement can negatively affect maternal confidence and breastfeeding practices. Breastfeeding mothers tend to stop or reduce breastfeeding in such situations and thus a lot of support and counselling should be provided to newly arriving refugee mothers, caregivers and infants with special needs (orphans and unaccompanied children).  
4. Provide restorative care to mothers in case of trauma, stress, sexual violence, grief or infant rejection.  
5. Adequately trained and skilled staff should support mothers with difficulties in breastfeeding their infants and provide private safe spaces for mothers to breastfeed and to connect with other mothers. Access to cleaning facilities should also be provided to mothers to wash feeding utensils, especially to mothers who are formula feeding. Prioritize mothers of infants and young children for basic screening of childhood illnesses, access to registration and basic services, shelter and non-food items.  
6. It should be ensured that mothers/caregivers of artificially fed infants are given targeted support and receive counselling as well as kits for preparing BMS safely, including soap, fuel, water purification tablets, etc.  

### V. Protecting Children

1. Artificially-fed infants need more protection and support than breast-fed children.  
2. Infants are at higher risk of malnutrition and illness like diarrhea and chest infections if they are being fed infant formula. In emergency conditions, this could be fatal.  
3. In case the infant is ill (e.g. if the infant has diarrhea), continue feeding the infant since breastmilk contains water to replace losses through diarrhea and important minerals and vitamins to help prevent dehydration. It also contains...
proteins to help strengthen the immune system of the baby. Give smaller amounts of breastfeed and more frequently if the infant’s appetite is reduced. However, in serious or prolonged cases of diarrhea, rehydration therapy may be required.

4. Newborn infants are the most vulnerable group which should be targeted and ensured that they are exclusively breast fed and artificial feeding is prevented.

5. Support breastfeeding as the best way to safeguard infants against cholera. Infants with cholera should continue breastfeeding as soon as they are able to suckle, and mothers with cholera should re-initiate breastfeeding as soon as they are stable.

6. Efforts should be made to protect cholera-free breast-fed babies from cross-contamination.

7. IYCF managers, field staff and registration staff should collaborate and ensure screening of infants at registration to identify and refer infants at risk or those who are highly vulnerable (i.e. orphans and unaccompanied infants and young children, non-breastfed infants <6 months, ill infants or malnourished infants) and establish services to give these vulnerable infants nutritional support.

8. Prioritize support service:
   a. For re-lactation: Prioritize non-breastfed infants 0 - <6 months or of 0 - <2 months whose mother/wet nurse is willing to re lactate
   b. Re-establish exclusive breastfeeding: Always prioritize infants aged 0 - <2 months (including newborns). Infants 0 - <4 months are a priority, but it’s an ideal situation for infants 0 - <6 months
   c. BMS provision and associated support services: prioritize not breastfed infants who are <6 months

9. The psychosocial impact of discontinued breastfeeding on children whose mothers have died or are no longer able to breastfeed should also be considered and support services should be set up to address this.

10. Consideration should also be given to special needs of artificially fed children (0-23 months) and PLW (i.e. insecticide treated mosquito nets; hygiene items including soap and washing containers; cooking and eating items; breastfeeding shawls; blankets and infant/young child clothing and shoes with thermal needs considered; potties, diapers), with a particular preference for items that can be locally sourced.

VI. Malnutrition

1. Ensure availability of endorsed nutritional strategies in policies and guidelines and establish cross-sectoral IYCG working group to discuss challenges, needs and success.

2. IYCF teams should coordinate and generate a treatment plan where mothers should be admitted at stabilization centers along with her children where they would be provided with nutritional support and counselling to improve lactation.

3. Select an IYCF specialist from each nutrition post or community group.

4. Standardize IYCF messages for caregivers and PLWs with children of 0-23 months and incorporate IYCF indicators in the monitoring system.


6. Promote IYCF practices (i.e. early initiation, exclusive breastfeeding and complementary feeding).

7. Timely introduction of complementary food in infants of 6-9 months.

8. Micronutrients should be distributed to all PLWs in form of powders and tablets.

9. Malnutrition treatment and prevention programs should incorporate and prioritize infant and young child feeding in their agenda.

10. Efforts should be made to investigate the underlying cause of malnutrition and measures should be taken to correct it.

11. Monitor nutritional status of mothers, infants and young children with the purpose of identifying, assessing, preventing and treating malnourished children.

12. Strong referral mechanisms should be put in place for acute malnutrition to cater to worsening nutritional status of infants.
13. Admit malnourished children along with their mothers to a nutritional rehabilitation program.  
14. There should be community-based management of acute malnutrition, if conditions are favorable. In disasters, supplementary feeding should be the primary strategy for prevention and treatment of moderate acute malnutrition (MAM). Depending on vulnerable population groups and malnutrition level/risk of an increase in acute malnutrition, supplementary feeding can be blanket or targeted.  
15. Pre-formulated therapeutic milk products or dried skimmed milk (DSM) may be used to treat cases of severe acute malnutrition (SAM). However, attention must be given to ensure that supplementary food aid commodities are carefully regulated and distributed to only target vulnerable groups.  
16. Therapeutic milk is not appropriate for BMS use. Therapeutic milk like F75 and F100 should be used for the treatment of children with severe acute malnutrition (SAM). It can be given to infants less than 6 months. SAM children require appropriate treatment at right time with immediate referral.  
17. Cash/voucher programmes (conditional) could be started that promote good nutrition outcomes i.e. preventing malnutrition. Unconditional cash programs should be promoted in case of food security and livelihood. But in this case optimal IYCF practices should be considered through an expert. Women should be educated and sensitized for appropriate use on food and nonfood items for children of 0-23 months.  
18. Community support networks should be educated on the prevention and treatment of acute malnutrition.  

VII. The acute phase of emergencies (prevention through interventions)  
1. In case of an emergency, interventions should start immediately to minimize the emergency’s negative impact on feeding practices and every agency should develop a policy on infant feeding in emergencies, focusing on supporting caregivers and nutritional needs children.  
2. An appropriate agency should be appointed and resourced at the start of an emergency to co-ordinate IYCF-E practices and ensure the implementation of policies and it should be conveyed to all agencies working in the area.  
3. In emergencies, donations of BMS are not needed and may put endanger infant lives due to poor hygienic conditions.  
4. If emergencies occur in places where there was already high infant formula use, promotion of IYCF-E can be even more difficult and WHO, and its developmental partners, along with local authorities and/or the national Nutrition Cluster (if activated) should ensure that appropriate IYCF-E is adequately promoted, protected and supported.  
5. Interventions should be undertaken to increase the prevalence of appropriate IYCF-E practices such as culturally-appropriate behavior-change approaches, along with capacity-building, to increase the rate of exclusive breastfeeding.  
6. A joint statement for protection and support of appropriate IYCF-E should be released and ensured that BMS donations and distributions are carefully monitored.  
7. WHO, its developmental partners, local governments and national Nutrition Cluster (if activated) should work on this and provide this information to all staff, potential donors (including governments and the military) and the media, and ensure that no wrong messages are being disseminated both in emergency preparedness and particularly during the early phase of an emergency response.  
8. Breastfeeding and IYCF support should be a major component of all services for mothers, infants and children and measures should be put in place to ensure that their needs are met in the early stages of an emergency.  
9. Support should also be provided to caregivers and infants with special needs (orphans and unaccompanied children).  
10. It should be ensured that artificial feeding is strictly restricted to the targeted group of infants that require it and mothers who need help with breastfeeding are provided lactation support by mobilizing ‘local breastfeeding facilitators’.  
11. Lactation should be reinforced by educating mothers to breastfeed every 2-3 hours at ‘breastfeeding stations’ scattered across refugee sites.
12. One guideline also suggested the use of ‘chlorpromazine’ to stimulate milk production, according to the protocol and also ‘wet nurses’ to feed the infant.

13. Milk banks can also be used as an alternative to BMS and also as a source of employment in emergency setting.

<table>
<thead>
<tr>
<th>VIII. Assessment, intervention and monitoring</th>
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<tbody>
<tr>
<td>1. In emergencies, co-ordinate, promote and carefully monitor optimal feeding in infants and young children.</td>
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<tr>
<td>2. There should be systematic and comprehensive monitoring systems to track all infant feeding products being distributed.</td>
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<tr>
<td>3. Conduct mother – child pair assessment of HIV positive mothers and for individual child, assessment for artificial feeding (i.e. Simple Assessment and Full Assessment).</td>
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<tr>
<td>4. In areas with high prevalence of HIV, the risk of infant getting HIV via breastfeeding should be weighed against the risk of facing infection and malnutrition as a consequence of not being breastfed.</td>
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<tr>
<td>5. The prevalence of HIV in the affected population, knowledge of HIV status, and availability of counselling and testing facilities should be assessed (including pre-emergency estimates) using secondary sources and relevant information from health information systems.</td>
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<tr>
<td>6. In emergencies, implement an IYCF-E program focusing on infant feeding provision, with robust mechanisms that estimate the number of children that don’t have access to breast milk and then provide them with targeted supply of infant formula.</td>
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<tr>
<td>7. Monitor the nutritional status of infants and young children, particularly weight monitoring for those receiving formula feed and assess intake, urination frequency, activity level, whether infant is feeding vigorously and weight gain.</td>
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<tr>
<td>8. Establish a strong referral system to treat acute malnutrition should the infant’s nutritional status deteriorate.</td>
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<tr>
<td>9. To monitor and to conduct rapid assessments, gather information and statistics regarding: demographic profile, morbidity, mortality, predominant feeding practice, reported feeding problems for infants and young children including problems related to breastfeeding and complementary feeding, pre-crises approach to orphaned children, security risks and availability of conspicuous BMS products and bottles/teats/breast pumps.</td>
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<tr>
<td>10. To monitor and assess, use qualitative methods to gather data regarding:</td>
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<tr>
<td>a. Appropriate complementary foods in the general ration or targeted feeding programs</td>
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<tr>
<td>b. Maternal and child health facilities including antenatal, delivery, postnatal and child care</td>
</tr>
<tr>
<td>c. Capacity of potential support-givers including breastfeeding mothers, trained health workers, trained counselors and experienced women from the community</td>
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<tr>
<td>d. Factors that may disturb breastfeeding practices</td>
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<tr>
<td>e. Key decision-makers at household, community and local health facility level that may influence infant and young child feeding practices</td>
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<tr>
<td>f. Cultural barriers affected practices of re-lactation, wet-nursing, etc.</td>
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<tr>
<td>g. General health environment including: water and sanitation, housing, facilities of food preparation and cooking.</td>
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<tr>
<td>11. To monitor and assess, use quantitative methods to gather data regarding:</td>
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<tr>
<td>a. Estimated number of unaccompanied and accompanied children under two years of age, pregnant and lactating women</td>
</tr>
<tr>
<td>b. Statistics regarding morbidity, mortality, and levels of malnutrition</td>
</tr>
<tr>
<td>c. Information concerning nutritional adequacy of food rations</td>
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<tr>
<td>d. Pre-crisis and recent patterns in infant and young child feeding practices</td>
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<tr>
<td>e. Availability and management of BMS in accordance to The International Code.</td>
</tr>
<tr>
<td>12. Governments should monitor and apply The International Code collaboratively with the assistance of International agencies such as WHO and UNICEF, NGO’s, refugee camp staff, professional groups and customer organizations to ensure that manufacturers and distributors of BMS remain within the scope of the established Code.</td>
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</table>
13. Manufacturers and distributors should monitor their market prices and the practices of their marketing personnel in accordance to The Code. Non-governmental organizations (NGO’s) along with professional groups, institutions and concerned individuals should monitor and criticize manufacturers and distributors that don’t follow the principles of The Code.  

14. Review and monitor the following:  
   a. Advice and knowledge regarding breastfeeding and BMS usage  
   b. Estimate the number of women breastfeeding, weaning and incorporating the use of BMS and bottle in the feed of their infant and young children  
   c. Constraints associated with hygienic BMS preparation  
   d. Availability and management of BMS  
   e. Promote importance of breastfeeding and optimal hygiene practices especially handwashing before preparation of BMS. We should also dispel myths among mothers regarding breastfeeding.  

15. Capacity Building of IYCF staff and outreach workers on nutrition (optimal IYCF practices, lifesaving IYCF practices, rapid IYCF assessment and detection of poor IYCF practices)  

16. Promote importance of breastfeeding and optimal hygiene practices especially handwashing before preparation of BMS. We should also dispel myths among mothers regarding breastfeeding.  

IX. Breastfeeding, HIV, and other considerations  

1. Generate policies on empowering women with HIV on decision making and infant feeding  

2. IYCF staff should take appropriate measures to prevent mother-to-child transmission of HIV, as well as focus on improving child survival from HIV.  

3. Promote the use of optimal infant and young child feeding guidelines when the HIV status of the mother is unknown or she is HIV negative.  

4. In case of unavailability of HIV-testing, it is recommended to breastfeeding the infant for six months, followed by adequate complementary feeding and continued breast feeding for two years.  

5. Mothers should know their HIV status and receive appropriate counselling. Those diagnosed as HIV positive should make an informed decision about feeding options by balancing the prevention of HIV transmission with the nutritional requirements of infants.  

6. HIV positive mother should exclusively breastfeed her child for first 6 months of life unless replacement feeding is affordable, sustainable and safe for their infants. In case, replacement feeding is not acceptable, then complementary feeding with continued breastfeeding at 6 months is recommended, while mother and baby will be assessed regularly.  

7. Supportive arrangements and personal attachment for HIV positive mothers helps to reduce isolation, build confidence, reduce conflicting messages, encourage appropriate feeding, provide privacy and educate family members.  

8. Ensure access to sustainable medical care for mothers with an HIV positive status by supporting the provision of ART and ARV. If due to emergencies, the supply of these medications is hindered then immediate action should be taken for its re-establishment.  

9. In circumstances during acute emergencies, when Antiretroviral Drug (ARVs) are unavailable, it is recommended to breastfeeding HIV-exposed infants to increase his/her survival.  

10. In emergency contexts, HIV-positive mothers should be supported to initiate or continue exclusive breastfeeding/ continued breastfeeding with adequate complementary feeding depending upon the age of the infant. The risk of infection or malnutrition through the use of Breast Milk Substitutes (BMS) outweighs the risk of HIV transmission through breastfeeding.  

11. Support replacement feeding only when this option meets the AFASS criteria, i.e. acceptable, feasible, affordable, sustainable and safe.  

12. All HIV- positive mothers should receive full support and get regular follow ups.  

13. HIV-positive and caregivers of children born to HIV-positive mothers, who have chosen to discontinue or not breastfeed, should be provided with targeted, appropriate, breast milk substitutes (Ready to Use Formula (RUIF) and Powdered Infant Formula (PIF).  

14. Promote and support specific counseling concerned with risks of mixed feeding and HIV transmission. Additionally, ensure the provision of Safe BMS kits, i.e. adapted to the type of BMS administered.
15. Services and activities linked to the Prevention/Elimination of Mother-to-Child Transmission (E/PMTCT) should be provided routinely as a part of nutritional interventions.
16. Measures taken by ICYF-E staff should be sensitive and should avoid actions that may exacerbate any HIV-related stigma.
17. Wet nursing should also be considered in case of HIV positive mothers and for infants who have lost their mothers. It should be administered by any person (other than mother). The wet nurse should be counselled before and after wet nursing to prevent her from catching infection.
18. WHO recommends flash heated breastmilk rather than boiling breast milk to prevent significant nutritional damage of breastmilk.

References:
3. UNHCR. Infant and young child feeding practices
6. Refugees UHCF. Interim Operational Considerations for the feeding support of Infants and Young Children under 2 years of age in refugee and migrant transit settings in Europe. 2015.
22. WHO. WHA RESOLUTION 47.5

Infant and Young Child Nutrition. 1994.
### Appendix

Table 1: operational guidelines for IYCF in conflict

<table>
<thead>
<tr>
<th>Components of breastfeeding</th>
<th>Operational Guidelines</th>
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</table>
| I. Protecting, promoting and supporting breastfeeding | 1. Infants should be exclusively breast fed for the first 6 months of life, followed by appropriate complementary feeding along with continued breastfeeding for two years.  
2. Relief agencies should create internationally-coordinated breastfeeding policies with practical guidelines explicitly stated for field workers and decision-makers.  
3. National policies and technical guidelines on IYCF-E should be explicitly stated and communicated to relevant staff in order to increase preparedness if an emergency strikes. This is particularly important for high-risk countries.  
4. Funding should be provided for programs to support breastfeeding.  
5. Breastfeeding practices and maternal care should be promoted according to ‘UNICEF/WHO Baby Friendly Hospital Initiative’s Ten Steps to Successful Breastfeeding’.  
6. Ensure that relief workers, healthcare staff, technical and non-technical personnel are trained in appropriate infant and young child feeding practices using available training material and key information on IYCF integrated into routine assessments.  
7. Appropriate and timely support and trainings for breastfeeding and young child feeding should be integrated at all levels of healthcare.  
8. Efforts should be made to raise awareness supporting the superiority of breastfeeding as a life-saving intervention to health personnel, relief staff, NGOs, stakeholders and the general public focusing primarily on pregnant and breastfeeding women.  
9. In conflict and refugee settings, traditional birth attendants (TBAs) are more accessible to mothers than nurses and midwives, therefore TBAs should be trained regarding appropriate breastfeeding practices.  
10. Pregnant women and breastfeeding mothers should be informed using clear language about maternal health, how to properly breastfeed, advantages and maintenance of breastfeeding, negative effects of bottle-feeding and the difficulty to reverse decision not to breastfeed.  
11. Encourage mothers to initiate breastfeeding within the first hour of birth, and to exclusively breastfeed for the first six months of life (do not give them extra water, juices, tea or food) unless medically indicated otherwise. Thereafter, solid foods should be introduced, but breastfeeding should continue for at least a year or two.  
12. Educate mothers not to stop breastfeeding in emergency situations and spread awareness that exclusive breastfeeding provides the best nutrition to babies. Moreover, breastmilk contains ingredients that protects babies from infection, so it’s particularly useful in emergency situations.  
13. Encourage mothers to breastfeed on demand.  
14. Practice rooming-in of infants and their mothers (allow mothers and infants to remain together 24 hours a day) to support breastfeeding practice.  
15. Colostrum should be given to the baby to improve its physical growth and feeding baby should not be interrupted in between. The baby lets go off the breast when he/she is done.  
16. Discourage the use of artificial nipples or pacifiers. |
17. Educate mothers on breastfeeding and the procedure to maintain lactation even when the mother-infant pair is temporarily separated.  
18. Ensure that mothers are facilitated by the provision of counseling and other forms of assistance for the purpose of re-lactation or difficulty in breastfeeding.  
19. Mothers should also be made aware that breast milk supply is not reduced by stress, though the release of milk could be affected.  
20. Encourage mothers to practice skin to skin contact as this aids in reducing stress (cortisol) levels and helps the flow of mother’s milk. This can be practiced using slings and wraps. Moreover, correct positioning of baby during breastfeeding is important as effective suckling also triggers breast milk production.  
21. Malnourished mothers can produce enough milk to breastfeed, however, she should be treated for malnourishment.  
22. Relief workers should provide nutritional support by giving a general ration to pregnant and lactating women. If full general ration is not possible, then food and micronutrient supplements should be sufficiently provided. This is because an optimally fed mother will be able to optimally feed her infant. Give adequate food to the malnourished mother to prevent depletion of her own nutrients and closely monitor the weight and urine production of the infant.  
23. In emergency settings, extra breastfeeding support should be provided by encouraging Baby Friendly Spaces, which provide a platform to support mothers/caregivers and promote appropriate infant and young children feeding practices, privacy and safety.  
24. For refugees and displaced populations, establish rest areas for pregnant women/caregivers/mothers and children in transit. These should be secluded, private and culturally appropriate areas that assist women and children to relax and nurse.  
25. Establish a program to encourage mother to mother/women to women support.  
26. Establish registration of newborn infants, i.e. within two weeks of delivery, to ensure timely additional rations and breastfeeding support for lactating and breastfeeding mothers. Nutrition workers should help mothers to establish exclusive breastfeeding.  
27. Vulnerable groups, especially newly arriving mothers and infants with severe feeding problems should be identified and referred for immediate assistance.  
28. Create referral and follow-up systems for mothers/caregivers and their infants.  
29. Avoid giving estrogen containing contraceptive pills to mothers because they decrease breastmilk production.  
30. Encourage mothers to build their confidence which leads to production of oxytocin to improve blood flow.  
31. Continue to breastfeed sick children or when they are less hungry. In case they are not hungry then put them to breast more repeatedly to ensure that they take enough breastmilk.  
32. When natural breastfeeding is not possible, available alternatives should be evaluated before an appropriate choice is made. This may include evaluating between: wet-nursing, the use of milk bank, home-modified milk and the use of locally purchased commercial infant formula or generic unbranded infant formula.  
33. Access to infant formula should be based on the guidelines set by the WHO International Code of Marketing of Breast Milk Substitutes, 1981.  
34. Support should be provided for artificial feeding and this should be distinct from the support being provided for breastfeeding.  
35. Lactating women can take most medicines (including antibiotics) and can be immunized as well, as recommended for adults and adolescents to protect against infectious diseases (measles, mumps, rubella, tetanus, diphtheria, pertussis, influenza, Streptococcus pneumoniae, Neisseria meningitidis, hepatitis A, hepatitis B, varicella, and inactivated polio).  
36. In case of radiation exposure
a. Women who were exposed to radiation should be advised to temporarily stop breastfeeding unless there is no other source of feeding available for the infant. These mothers should pump and discard their milk until the infant can resume breastfeeding.
b. In case of interruption of breastfeeding, preferred source of infant feed is human milk that was pumped and stored prior to the radiation exposure or ready-to-feed infant formula. Mothers should use powdered or concentrated formula only if they are sure that water used to reconstitute is free from radiation.
c. Mothers can resume breastfeeding when advised by local health officials or when they have been evacuated from the radiation affected area.
d. Mothers do not need to stop breastfeeding if both mother and infant have been given appropriate doses of potassium iodide at the right time, according to the advice of local health officials.  

**II. Protecting non-breastfed infants and minimizing the risks of artificial feeding**

1. Breast milk substitute (BMS) is not recommended for children <6 months of age.

2. Procurement, management and distribution of breastmilk substitutes, bottles and teats, and commercial complementary foods should be controlled during emergencies and should comply with the ‘no bottle’ policy and International Code and WHA guidelines and violations should be reported.

3. Procure BMS after conducting need assessment of artificial feeding at population level assessment. It may also include nutrition survey, household and community survey. This is recommended to be done in close collaboration with government bodies and by developing Program Cooperation Agreements (PCAs) with local bodies for task implementation.

4. On distribution of BMS, it should be ensured that workforce involved should have enough capacity for assessment, counselling, supply chain management and in providing support to families on WASH and IYCF practices.

5. Donations of free or subsidized breast-milk substitutes, bottles and teats and commercial baby foods at emergency sites should be refused and advocated against as this could put infants lives at risk and undermine breastfeeding practices.

6. The distribution, use and quantity of breast milk substitutes should be controlled by collecting unsolicited donations from all ports of entry and the recipient agencies, and should be stored and managed centrally by a single designated agency.

7. BMS should only be distributed to the infants who really need it and have no viable breastmilk options, based on established criteria (where distribution can be targeted, the supply chain is secure, and the conditions for safe preparation and use can be met). This should be determined by a qualified health or nutrition worker trained in breastfeeding and infant feeding issues.

8. Breast-milk substitutes, milk products, bottles and teats should never be part of a general or blanket distribution and their use should be avoided, especially in case of emergency situations or in situations where hygienic conditions can’t be ensured and their use should be discouraged. Bottles should be exchanged for cups instead as it’s easier to keep them clean.

9. Promotion of breast-milk substitutes at the point of distribution should be strictly discouraged. There should be no advertisement or display of products or items with milk company logos and BMS supplies should not be used as a sales inducement and there should be no provision of single tins/samples of BMS or gifts to mothers. Moreover, no incentives should be offered by manufacturers to health workers to promote BMS products.

10. In case of crisis, WHO developmental partners and/or the designated nutrition co-ordinating agency should train as well as support training of staff and mothers on the proper and safe use of infant formulas.

11. When the use of infant formula is indicated, before its distribution, mothers and caregivers responsible for feeding should be educated on the specific care needed by a non-breast fed infant, and given practical training and one-to-one guidance.
on one demonstrations by a skilled health worker on safe and hygienic preparation and administration of infant formula\textsuperscript{1, 2, 4, 6, 7, 10, 12, 19, 21, 23}

12. There should be regular follow-up visits, to caregivers of targeted infants receiving BMS comprising of regular infant health and growth monitoring and distribution of BMS should be frequent and regular (at least bimonthly), with minimum delays\textsuperscript{1, 3, 7, 10, 12, 19, 21}

13. It should also be ensured that there is availability of fuel, safe water and sanitation and equipment for safe preparation of BMS in the house, prior to distribution of BMS and implementing a household based program\textsuperscript{2, 4, 6, 7, 9-11, 14, 15, 21, 23, 25, 26, 28}

14. For infants determined to be in need of infant formula, the adequate and continued provision of infant formula must continue for as long as they require it, even if it needs to be purchased. IYCF-E programs that include an infant formula provision component should plan to provide it for at least 6 months, or if there is no availability of adequate complementary food, then 12 months\textsuperscript{3, 4, 6, 7, 9-12, 14, 19, 22}

15. Non-breastfed infants over 6 months of age, provided with 6 months of BMS, may require 2-4 weeks of buffer supply to offer transition to non BMS feeding\textsuperscript{3, 10}

16. An improvement should be brought about in health services to manage the adverse effects of artificial feeding, especially the increase in incidence of severe diarrhea and respiratory infections in infants\textsuperscript{2, 10}

17. Generic, unbranded formula is recommended for infants who require infant formula, followed by locally purchased and relabeled infant formula (to be in compliance with The International Code). Home modified milk should only be used temporarily as the last resort for infants less than 6 months old. The type of infant formula should have a shelf life of at least 6 months and be appropriate for the infant, including their age\textsuperscript{4, 6, 7, 9, 10, 15, 19, 21, 23}

18. Labels must adhere to the specific labelling requirements of The International Code and should be in the language of the local population. The BMS packaging should have clear instructions, with pictures, on how to use it, along with clearly specifying the superiority of breast milk\textsuperscript{4, 6, 7, 9, 19, 21, 25, 28}

19. The labels should include a sign of “Important Notice” stating importance of breastfeeding and a statement stating, “The product should be used only on the advice of a health worker as to the need for its use and the proper method of use.” They instructions should also state about its safe preparation and health hazard on inappropriate use, and a warning against the health hazards on inappropriate preparation of infant formula\textsuperscript{28}

20. Supply department should assure that BMS manufactured should follow Codex Alimentarius standards. UNICEF has not included BMS in it supply catalogue as a non-standard product\textsuperscript{28}

21. For infants under 6 months of age, the only suitable BMS is infant formula. However, infants over the age of 6 months do not need infant formula but can use other sources of milk (pasteurized full-cream animal milk (cow, goat, sheep), Ultra High Temperature (UHT) milk, fermented milk or yogurt) as these are easier to find and are less dangerous than powdered milk. Condensed milk should not be used for infant feeding\textsuperscript{4, 6, 10}

22. Liquid milk, if being used, should be consumed within a few hours of opening. Baby juices and teas should be avoided as they are low in nutrition and high in sugar. For infants over 6 months of age, infant formula can be mixed into the child’s food instead of giving it to drink\textsuperscript{4}

23. Milk products should only be received and distributed in a dry form and even dried milk products should be distributed only when pre-mixed with a milled staple food and should not be distributed as a single commodity. However, dried skim milk is not an appropriate BMS for infant, and even for older children it must be fortified with vitamin A and not given on its own\textsuperscript{4, 7, 9, 19, 23}

24. It should be ensured that there are no spill-over risks of infant formula provision. Measures should be taken to reduce spill-over by ensuring that feeding BMS to a minority of children doesn’t undermine breastfeeding practices of the majority. Advertising of infant formula should be stopped, and the provision of infant formula should be discrete, monetary support should be
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<tr>
<th>III. Protecting, promoting and supporting appropriate, safe and timely complementary feeding</th>
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<tbody>
<tr>
<td>1. To promote growth and development of infants, encourage appropriate, timely and safe complementary feeding for infants (aged &gt; 6 months) and young children (aged between 12 to &lt; 24 months), along with continued breastfeeding</td>
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<tr>
<td>2. Children over the age of 6 months of age should be given complementary foods (solid, semi-solid and soft foods) that are easy to eat and digest and nutritionally complement breast milk</td>
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<td>3. Conduct discussion in groups on complementary feeding and weaning</td>
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<tr>
<td>4. Promote the growth of locally produced food and encourage mothers/caregivers to use these locally-produced, inexpensive foods for complementary feeding. These include basic food commodities, such as: fruits, vegetables, rice, beans and lentils</td>
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<tr>
<td>5. Increase frequency and variety of complementary food with the growing age of child to meet his/her nutritional needs</td>
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<tr>
<td>6. In emergencies, locally produced foods, micro-nutrient fortified blended foods, ferrous sulphate iron solution (iron drops), Ready-to-Use Supplementary Foods (RUSFs) or Lipid based Nutrient Supplements (LNS) can be used for complementary feeding depending on the nutritional situation</td>
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<tr>
<td>7. Special attention must be given to ensure that the food ration distributed for old infants and young children have an adequate nutritional value (food should be fortified with vitamins and minerals)</td>
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<tr>
<td>8. Establish services to extend nutritional support to vulnerable groups, such as: orphans and unaccompanied infants and young children</td>
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<td>9. Promote hygienic preparation of complementary foods by providing mothers/caregivers necessary information and support</td>
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<tr>
<td>10. In emergencies, special consideration should be made to mitigate the obstacles faced by mothers/caregivers in the preparation (cook, mash, etc.) of age-appropriate complementary foods. Measures needed to counter these obstacles should be incorporated in the program design</td>
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<tr>
<td>11. IYCF-E programs relating to complementary feeding should include: a. Group sensitization and education b. Develop local food recipes focusing on nutritional value, affordability and food dietary diversity c. Provide cooking demonstrations, and d. Support mothers/caregivers to prepare complementary foods via initiatives such as fresh food vouchers</td>
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<tr>
<td>12. Dependence upon commercially-produced complementary foods should be avoided</td>
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<tr>
<td>13. Mothers should be assured that in the absence of safe complementary foods, breastmilk is a significant source of nutrition for infants the first year of life and beyond</td>
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14. Donations of complementary foods, baby teas, or juices should be refused. If there are donated supplies, they should be directed to the designated coordinating agency on nutrition/health to be managed appropriately.

15. Promotion of a varied diet, dairy products in particular, to ensure that energy, protein, mineral and vitamin requirements are met. Moreover, when preparing food for infants such as porridges, mashed potatoes, etc., milk and infant formula can be added to it to increase the nutrient content.

16. Pastoral communities mainly use milk and milk products, which contains a significant amount of nutrition for children over six months. As a part of complementary feeding, milk (such as animal milk) and milk products (such as yoghurt) can be provided to infants over 6 months of age. In such cases, distribution of milk products can only be conducted in controlled environments under strict supervision, such as on-the-spot feeding.

17. Good nutrient sources for infants are animal source foods, such as yogurt and cheese whereas products containing only fruits/vegetables are less energy and nutrient dense. Baby teas and juices should not be given to infants as they do not have much nutrient value.

18. Complementary food products should be labelled in the language of the targeted population and be acceptable to them, according to their culture. The products should also have information on how to prepare the food.

19. Moreover, these products should not have images of bottle feeding on them or recommend it in any way.

20. If needed, commercial ‘baby’ foods should be purchased and distributed to mothers or products recommended to mothers, for infants over 6 months of age, that have the most nutritional value.

21. It is recommended that children over the age of 12 months eat the same foods as older children.

### IV. Caring for Care-givers

1. Efforts should be made to increase caregivers’ coping capacity because the number of caregivers is often reduced during emergencies and stress levels increase, so psychological support and encouragement plays an important role in enhancing optimal IYCF-E practices.

2. Treat the mother during illness, keep the infant close to the mother and do not stop breastfeeding. The mother should be educated on the appropriate method of milk expression as she can maintain breastmilk flow through milk expression.

3. Breastfeeding mothers require identification, protection and active support. Conflict situations and displacement can negatively affect maternal confidence and breastfeeding practices. Breastfeeding mothers tend to stop or reduce breastfeeding in such situations and thus a lot of support and counselling should be provided to newly arriving refugee mothers, caregivers and infants with special needs (orphans and unaccompanied children).

4. Provide restorative care to mothers in case of trauma, stress, sexual violence, grief or infant rejection.

5. Adequately trained and skilled staff should support mothers with difficulties in breastfeeding their infants and provide private safe spaces for mothers to breastfeed and to connect with other mothers. Access to cleaning facilities should also be provided to mothers to wash feeding utensils, especially to mothers who are formula feeding. Prioritize mothers of infants and young children for basic screening of childhood illnesses, access to registration and basic services, shelter and non-food items.

6. It should be ensured that mothers/caregivers of artificially fed infants are given targeted support and receive counselling as well as kits for preparing BMS safely, including soap, fuel, water purification tablets.

### V. Protecting Children

1. Artificially-fed infants need more protection and support than breast-fed children.

2. Infants are at higher risk of malnutrition and illness like diarrhea and chest infections if they are being fed infant formula. In emergency conditions, this could be fatal.

3. In case the infant is ill (e.g. if the infant has diarrhea), continue feeding the infant since breastmilk contains water to replace losses through diarrhea and important minerals and vitamins to help prevent dehydration. It also contains...
proteins to help strengthen the immune system of the baby. Give smaller amounts of breastfeed and more frequently if the infant’s appetite is reduced. However, in serious or prolonged cases of diarrhea, rehydration therapy may be required\(^6, 10, 11, 15, 26\)

4. Newborn infants are the most vulnerable group which should be targeted and ensured that they are exclusively breast fed and artificial feeding is prevented\(^2, 6, 12, 16, 21, 23\)

5. Support breastfeeding as the best way to safeguard infants against cholera. Infants with cholera should continue breastfeeding as soon as they are able to suckle, and mothers with cholera should re-initiate breastfeeding as soon as they are stable\(^12\)

6. Efforts should be made to protect cholera-free breast-fed babies from cross-contamination\(^12\)

7. IYCF managers, field staff and registration staff should collaborate and ensure screening of infants at registration to identify and refer infants at risk or those who are highly vulnerable (i.e. orphans and unaccompanied infants and young children, non-breastfed infants <6 months, ill infants or malnourished infants) and establish services to give these vulnerable infants nutritional support\(^2, 6, 12, 16, 18, 21, 23\)

8. Prioritize support service:
   a. For re-lactation: Prioritize non-breastfed infants 0 - <6 months or of 0 - <2 months whose mother/wet nurse is willing to re lactate
   b. Re-establish exclusive breastfeeding: Always prioritize infants aged 0 - <2 months (including newborns). Infants 0 - <4 months are a priority, but it’s an ideal situation for infants 0 - <6 months
   c. BMS provision and associated support services: prioritize not breastfed infants who are <6 months\(^3\)

9. The psychosocial impact of discontinued breastfeeding on children whose mothers have died or are no longer able to breastfeed should also be considered and support services should be set up to address this\(^12, 16\)

10. Consideration should also be given to special needs of artificially fed children (0-23 months) and PLW (i.e. insecticide treated mosquito nets; hygiene items including soap and washing containers; cooking and eating items; breastfeeding shawls; blankets and infant/young child clothing and shoes with thermal needs considered; potties, diapers), with a particular preference for items that can be locally sourced\(^2\)

**VI. Malnutrition**

1. Ensure availability of endorsed nutritional strategies in policies and guidelines and establish cross-sectoral IYCG working group to discuss challenges, needs and success\(^2\)

2. IYCF teams should coordinate and generate a treatment plan where mothers should be admitted at stabilization centers along with her children where they would be provided with nutritional support and counselling to improve lactation\(^2\)

3. Select an IYCF specialist from each nutrition post or community group\(^2\)

4. Standardize IYCF messages for caregivers and PLWs with children of 0-23 months and incorporate IYCF indicators in the monitoring system\(^2\)

5. Develop standard procedure for health workers for identification and referral of malnourished children\(^2\)

6. Promote IYCF practices (i.e. early initiation, exclusive breastfeeding and complementary feeding)\(^2\)

7. Timely introduction of complementary food in infants of 6-9 months\(^2\)

8. Micronutrients should be distributed to all PLWs in form of powders and tablets\(^2\)

9. Malnutrition treatment and prevention programs should incorporate and prioritize infant and young child feeding in their agenda\(^2, 12\)

10. Efforts should be made to investigate the underlying cause of malnutrition and measures should be taken to correct it\(^1, 2, 10\)

11. Monitor nutritional status of mothers, infants and young children with the purpose of identifying, assessing, preventing and treating malnourished children\(^1, 2, 10\)

12. Strong referral mechanisms should be put in place for acute malnutrition to cater to worsening nutritional status of infants\(^2, 12\)
13. Admit malnourished children along with their mothers to a nutritional rehabilitation program\textsuperscript{12, 21, 24}

14. There should be community-based management of acute malnutrition, if conditions are favorable. In disasters, supplementary feeding should be the primary strategy for prevention and treatment of moderate acute malnutrition (MAM). Depending on vulnerable population groups and malnutrition level/risk of an increase in acute malnutrition, supplementary feeding can be blanket or targeted\textsuperscript{2}

15. Pre-formulated therapeutic milk products or dried skimmed milk (DSM) may be used to treat cases of severe acute malnutrition (SAM). However, attention must be given to ensure that supplementary food aid commodities are carefully regulated and distributed to only target vulnerable groups\textsuperscript{4, 8}

16. Therapeutic milks are not appropriate for BMS use. Therapeutic milk like F75 and F100 should be used for the treatment of children with severe acute malnutrition (SAM). It can be given to infants less than 6 months. SAM children require appropriate treatment at right time with immediate referral\textsuperscript{28}

17. Cash/voucher programmes (conditional) could be started that promote good nutrition outcomes i.e. preventing malnutrition. Unconditional cash programs should be promoted in case of food security and livelihood. But in this case optimal IYCF practices should be considered through an expert. Women should be educated and sensitized for appropriate use on food and nonfood items for children of 0-23 months\textsuperscript{2}

18. Community support networks should be educated on the prevention and treatment of acute malnutrition\textsuperscript{2}

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<th>VII. The acute phase of emergencies (prevention through interventions)</th>
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<tbody>
<tr>
<td>1. In case of an emergency, interventions should start immediately to minimize the emergency’s negative impact on feeding practices and every agency should develop a policy on infant feeding in emergencies, focusing on supporting caregivers and nutritional needs children\textsuperscript{1, 2, 4, 23}</td>
</tr>
<tr>
<td>2. An appropriate agency should be appointed and resourced at the start of an emergency to co-ordinate IYCF-E practices and ensure the implementation of policies and it should be conveyed to all agencies working in the area\textsuperscript{13}</td>
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<tr>
<td>3. In emergencies, donations of BMS are not needed and may put endanger infant lives due to poor hygienic conditions\textsuperscript{2, 4, 10, 13, 23}</td>
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<td>4. If emergencies occur in places where there was already high infant formula use, promotion of IYCF-E can be even more difficult and WHO, and its developmental partners, along with local authorities and/or the national Nutrition Cluster (if activated) should ensure that appropriate IYCF-E is adequately promoted, protected and supported\textsuperscript{2, 10, 12, 23}</td>
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<tr>
<td>5. Interventions should be undertaken to increase the prevalence of appropriate IYCF-E practices such as culturally-appropriate behavior-change approaches, along with capacity-building, to increase the rate of exclusive breastfeeding\textsuperscript{12, 13, 23}</td>
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<tr>
<td>6. A joint statement for protection and support of appropriate IYCF-E should be released and ensured that BMS donations and distributions are carefully monitored\textsuperscript{2, 4, 7, 12, 13, 23}</td>
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<tr>
<td>7. WHO, its developmental partners, local governments and national Nutrition Cluster (if activated) should work on this and provide this information to all staff, potential donors (including governments and the military) and the media, and ensure that no wrong messages are being disseminated both in emergency preparedness and particularly during the early phase of an emergency response\textsuperscript{2, 4, 12, 13, 23}</td>
</tr>
<tr>
<td>8. Breastfeeding and IYCF support should be a major component of all services for mothers, infants and children and measures should be put in place to ensure that their needs are met in the early stages of an emergency\textsuperscript{2, 4, 7, 16}</td>
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<tr>
<td>9. Support should also be provided to caregivers and infants with special needs (orphans and unaccompanied children)\textsuperscript{2, 6, 12, 14, 16, 21, 23}</td>
</tr>
<tr>
<td>10. It should be ensured that artificial feeding is strictly restricted to the targeted group of infants that require it and mothers who need help with breastfeeding are provided lactation support by mobilizing ‘local breastfeeding facilitators’\textsuperscript{7, 10}</td>
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<tr>
<td>11. Lactation should be reinforced by educating mothers to breastfeed every 2-3 hours at ‘breastfeeding stations’ scattered across refugee sites\textsuperscript{7}</td>
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12. One guideline also suggested the use of 'chlorpromazine' to stimulate milk production, according to the protocol and also 'wet nurses' to feed the infant[7]

13. Milk banks can also be used as an alternative to BMS and also as a source of employment in emergency setting[7, 10]

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<tr>
<th>VIII. Assessment, intervention and monitoring</th>
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<tr>
<td>1. In emergencies, co-ordinate, promote and carefully monitor optimal feeding in infants and young children[1, 2, 15, 23]</td>
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<tr>
<td>2. There should be systematic and comprehensive monitoring systems to track all infant feeding products being distributed[13]</td>
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<tr>
<td>3. Conduct mother – child pair assessment of HIV positive mothers and for individual child, assessment for artificial feeding (i.e. Simple Assessment and Full Assessment)[3, 24]</td>
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<tr>
<td>4. In areas with high prevalence of HIV, the risk of infant getting HIV via breastfeeding should be weighed against the risk of facing infection and malnutrition as a consequence of not being breastfed[1]</td>
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<tr>
<td>5. The prevalence of HIV in the affected population, knowledge of HIV status, and availability of counselling and testing facilities should be assessed (including pre-emergency estimates) using secondary sources and relevant information from health information systems[10]</td>
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<tr>
<td>6. In emergencies, implement an IYCF-E program focusing on infant feeding provision, with robust mechanisms that estimate the number of children that don’t have access to breast milk and then provide them with targeted supply of infant formula[12]</td>
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<tr>
<td>7. Monitor the nutritional status of infants and young children, particularly weight monitoring for those receiving formula feed and assess intake, urination frequency, activity level, whether infant is feeding vigorously and weight gain[6, 10, 12, 15, 24, 26]</td>
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<tr>
<td>8. Establish a strong referral system to treat acute malnutrition should the infant's nutritional status deteriorate[2, 12]</td>
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<tr>
<td>9. To monitor and to conduct rapid assessments, gather information and statistics regarding: demographic profile, morbidity, mortality, predominant feeding practice, reported feeding problems for infants and young children including problems related to breastfeeding and complementary feeding, precises approach to orphaned children, security risks and availability of conspicuous BMS products and bottles/ teats/ breast pumps[7, 10, 21, 23]</td>
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</table>
| 10. To monitor and assess, use qualitative methods to gather data regarding:  
  a. Appropriate complementary foods in the general ration or targeted feeding programs  
  b. Maternal and child health facilities including antenatal, delivery, postnatal and child care  
  c. Capacity of potential support-givers including breastfeeding mothers, trained health workers, trained counselors and experienced women from the community  
  d. Factors that may disturb breastfeeding practices  
  e. Key decision-makers at household, community and local health facility level that may influence infant and young child feeding practices  
  f. Cultural barriers affected practices of re-lactation, wet-nursing, etc.  
  g. General health environment including: water and sanitation, housing, facilities of food preparation and cooking[10, 21, 23, 28] |
| 11. To monitor and assess, use quantitative methods to gather data regarding:  
  a. Estimated number of unaccompanied and accompanied children under two years of age, pregnant and lactating women  
  b. Statistics regarding morbidity, mortality, and levels of malnutrition  
  c. Information concerning nutritional adequacy of food rations  
  d. Pre-crisis and recent patterns in infant and young child feeding practices  
  e. Availability and management of BMS in accordance to The International Code[2, 10, 21, 23] |
| 12. Governments should monitor and apply The International Code collaboratively with the assistance of International agencies such as WHO and UNICEF, NGO’s, refugee camp staff, professional groups and customer organizations to ensure that manufacturers and distributors of BMS remain within the scope of the established Code[2, 10, 25] |
13. Manufacturers and distributors should monitor their market prices and the practices of their marketing personnel in accordance to The Code. Non-governmental organizations (NGO’s) along with professional groups, institutions and concerned individuals should monitor and criticize manufacturers and distributors that don’t follow the principles of The Code.

14. Review and monitor the following:
   a. Advice and knowledge regarding breastfeeding and BMS usage
   b. Estimate the number of women breastfeeding, weaning and incorporating the use of BMS and bottle in the feed of their infant and young children
   c. Constraints associated with hygienic BMS preparation
   d. Availability and management of BMS

15. Promote importance of breastfeeding and optimal hygiene practices especially handwashing before preparation of BMS. We should also dispel myths among mothers regarding breastfeeding.

16. Capacity Building of IYCF staff and outreach workers on nutrition (optimal IYCF practices, lifesaving IYCF practices, rapid IYCF assessment and detection of poor IYCF practices).

IX. Breastfeeding, HIV, and other considerations

1. Generate policies on empowering women with HIV on decision making and infant feeding.

2. IYCF staff should take appropriate measures to prevent mother-to-child transmission of HIV, as well as focus on improving child survival from HIV.

3. Promote the use of optimal infant and young child feeding guidelines when the HIV status of the mother is unknown or she is HIV negative.

4. In case of unavailability of HIV-testing, it is recommended to breastfeed the infant for six months, followed by adequate complementary feeding and continued breast feeding for two years.

5. Mothers should know their HIV status and receive appropriate counselling. Those diagnosed as HIV positive should make an informed decision about feeding options by balancing the prevention of HIV transmission with the nutritional requirements of infants.

6. HIV positive mother should exclusively breastfeed her child for first 6 months of life unless replacement feeding is affordable, sustainable and safe for their infants. In case, replacement feeding is not acceptable, then complementary feeding with continued breastfeeding at 6 months is recommended, while mother and baby will be assessed regularly.

7. Supportive arrangements and personal attachment for HIV positive mothers helps to reduce isolation, build confidence, reduce conflicting messages, encourage age appropriate feeding, provide privacy and educate family members.

8. Ensure access to sustainable medical care for mothers with an HIV positive status by supporting the provision of ART and ARV. If due to emergencies, the supply of these medications is hindered then immediate action should be taken for its re-establishment.

9. In circumstances during acute emergencies, when Antiretroviral Drug (ARVs) are unavailable, it is recommended to breastfeed HIV-exposed infants to increase his/her survival.

10. In emergency contexts, HIV-positive mothers should be supported to initiate or continue exclusive breastfeeding/ continued breastfeeding with adequate complementary feeding depending upon the age of the infant. The risk of infection or malnutrition through the use of Breast Milk Substitutes (BMS) outweighs the risk of HIV transmission through breastfeeding.

11. Support replacement feeding only when this option meets the AFASS criteria, i.e. acceptable, feasible, affordable, sustainable and safe.

12. All HIV- positive mothers should receive full support and get regular follow ups.

13. HIV-positive and caregivers of children born to HIV-positive mothers, who have chosen to discontinue or not breastfeed, should be provided with targeted, appropriate, breast milk substitutes (Ready to Use Formula (RUIF) and Powdered Infant Formula (PIF)).

14. Promote and support specific counseling concerned with risks of mixed feeding and HIV transmission. Additionally, ensure the provision of Safe BMS kits, i.e. adapted to the type of BMS administered.
15. Services and activities linked to the Prevention/Elimination of Mother-to-Child Transmission (E/PMTCT) should be provided routinely as a part of nutritional interventions. 12
16. Measures taken by ICYF-E staff should be sensitive and should avoid actions that may exacerbate any HIV-related stigma. 12
17. Wet nursing should also be considered in case of HIV positive mothers and for infants who have lost their mothers. It should be administered by any person (other than mother). The wet nurse should be counselled before and after wet nursing to prevent her from catching infection. 10, 12, 24, 29
18. WHO recommends flash heated breastmilk rather than boiling breast milk to prevent significant nutritional damage of breastmilk. 29

References:
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