PART 2: TECHNICAL NOTES

The technical notes are the second of four parts contained in this module. They provide an introduction to *HIV/AIDS* and nutrition. The technical notes are intended for people involved in nutrition programme planning and implementation. They provide technical details, highlight challenging areas, and provide clear guidance on accepted current practices. Words in italics are defined in the glossary.

Summary

This module provides an overview of the key issues that are arising in the relatively new field of HIV, nutrition and emergencies. There are still a number of gaps in the knowledge and practice which are highlighted. These technical notes provide information for decision making on key issues that affect the response to emergencies in areas of high HIV prevalence.

Key messages

1. HIV should be integrated into all aspects of the emergency management planning and response.
2. Integration of HIV into nutrition planning can have the effect of increasing HIV awareness as well as serving those already infected.
3. People living with HIV have increased nutritional needs in terms of energy requirements.
4. Because acute malnutrition is more common among people living with HIV at any age, specialized food distributions for specific patient care may need to be incorporated into community nutritional planning.
5. People living with HIV should be monitored regularly for weight loss which may be a sign of decreased intake or disease progression.
6. Steps can be taken to reduce the rate of transmission of HIV from mother to child with counselling on infant feeding and *ART* (antiretroviral therapy). Food/nutrition support may be needed.
7. Services for HIV care should be established as a priority. These include provision of ART and *cotrimoxazole* and *VCT* (voluntary counselling and testing) facilities.
8. All severely malnourished children require therapeutic care. HIV positive children should be regularly assessed and assigned to appropriate nutritional care plans.
9. Longer term needs of households affected should be taken into consideration, including livelihood support planning and job training.
10. Home based care (HBC) programmes and livelihood support programmes are important for improving the long-term food security status of HIV affected families.
11. People living with HIV are prone to infections, so access to clean water, appropriate food hygiene and sanitation are a key part of the emergency response for these people/families.
12. Targeted policies and practices are required to protect the rights and ensure the safety of people living with HIV as well as those at risk of contracting HIV.

These technical notes are based on the following references and the Sphere standards:

- WHO 2009. *Guidelines for an Integrated Approach to the Nutritional care of HIV-infected children 6 months-14years, preliminary version for country introduction*. Available at http://whqlibdoc.who.int/publications/2009/9789241597524_eng_Handbook.pdf
- World Health Organization (2010), *Guidelines on HIV and Infant Feeding: Principles and recommendations for infant feeding in the context of HIV: a summary of evidence*. Geneva, WHO. Available at http://whqlibdoc.who.int/publications/2010/9789241599535_eng.pdf
- Inter-Agency Standing Committee 2010. Guidelines for Addressing HIV in Humanitarian Settings. Geneva, Inter-Agency Standing Committee. available at http://www.humanitarianinfo.org/iasc/pageloader.aspx?page=content-products-products&productcatid=9
- UNHCR 2004. Integration of HIV/AIDS activities with food and nutrition support in refugee settings: specific programme strategies. Available at: http://www.unhcr.org/45fa72ea2.html
- World Health Organization, Food and Agriculture Organization of the United Nations 2009. Nutritional Care and Support for people living with HIV/AIDS: A training course. WHO/FAO. Available at: http://www.who.int/nutrition/publications/hivaids/PLWHIVcourse_Facilitators_Guide.pdf

Sphere standards

The Sphere Project Humanitarian Charter and Minimum Standards in Humanitarian Response 2011 does not have specific standards for HIV and nutrition. HIV and AIDS are considered cross-cutting issues and HIV prevention and treatment is included in the standards of various chapters. It is noted that the provision of ART during emergencies has been feasible and that continuation of ART for those already on treatment prior to the emergency must be considered a priority intervention, including emphasis on pregnant and lactating women and infants born to HIV positive mothers.

According to Sphere standards, although being a person with HIV does not, of itself, make a person vulnerable or at increased risk, when vulnerable groups are identified with respect to the nature of the emergency, their special needs should play a role in food security and nutrition planning.

Introduction

The challenge of effectively working with HIV in emergencies has been explicitly recognised by the humanitarian community since the 1990s and has, in recent years, become an integral part of emergency response in many parts of the world, with a particular emphasis on sub-Saharan Africa. The challenges faced by humanitarian workers, governments and civil society fall within all the three pillars of HIV/AIDS programming, namely:

- Prevention
- Health care and treatment
- Support and care

HIV prevalence is highest in sub-Saharan Africa. However, there are no parts of the world that are HIV-free zones. With the increase in natural disasters and the continued states of conflict throughout the world, issues around HIV cannot be avoided when responding to disasters on any continent. Some of the factors that may accelerate the spread of HIV in emergencies are:

- Rape and sexual violence
- Mass displacement of people
- Severe impoverishment leading to *transactional sex* for survival
- Breakdown in normal health and social services leading to reduction in the availability of
  - Voluntary counselling and testing for HIV
  - Reproductive health options
  - Treatment for sexually transmitted infections (STIs)
  - Antenatal care
  - Antiretroviral treatments for breastfeeding HIV-positive women

The 2010 Inter-Agency Standing Committee (IASC) guidelines for addressing HIV in humanitarian settings action framework lists 9 sectors into which HIV considerations should be integrated. HIV has an obvious place in awareness raising, health, protection, and food security. In addition to those clear connections, the IASC recommends that HIV be considered in education; shelter; camp coordination; water, sanitation, and hygiene; and in the workplace. While earlier guidelines focused

Box 1: Summary points from the Action framework of the Inter-Agency Standing Committee (IASC) guidelines for addressing HIV in humanitarian settings

HIV awareness and community support

- HIV prevention programmes and community groups may well be in existence prior to an emergency. These channels of communication should be preserved and utilised in the emergency setting. Representatives of HIV support groups should participate in planning and response.
- It is important to maintain consistency of messages and continue educational programmes to prevent the spread of HIV in new circumstances.

Health

- In health care settings, standard precautions against blood-borne diseases should be combined with banked blood screening and appropriate waste control.
- Condoms should be a part of essential relief supplies. Comprehensive treatment programmes for sexually transmitted infections should be included in health care organisation, and include post-exposure prophylaxis for rape victims and occupational exposures.
- Continue *Maintenance prophylaxis* against opportunistic infections and supply of ART, with special emphasis on the prevention of mother to child transmission. For those already on ART, continuation of ART is a priority intervention.
- The decision to initiate ART should be weighed with consideration to availability of consistent ART supply as well as health status.

Protection

- Violation of human rights increases vulnerability to transmission of HIV and exacerbation of HIV-related illnesses. Stigmatisation is a violation of human rights.
- Woman and girls should receive special protection from gender based violence, sexual exploitation and abuse.

Food Security and Nutrition

- In conjunction with food security assessment, include HIV affected communities and households in distribution of food assistance, targeting them where necessary.
- Ensure that provision of food assistance to people living with HIV and HIV-affected households and families does not increase their stigmatisation.
- Integrate HIV into existing food assistance and livelihood support, and integrate food assistance, security, nutrition, and livelihood support into HIV projects and activities.
- Introduce specific measures to protect/adapt livelihoods of HIV affected households and support homestead food production including:
  - Dietary diversification
  - Processing and preparation with attention to time-saving and labour-saving methods
  - Skill-building programmes in areas with large numbers of vulnerable children and adults
- Ensure adequate nutrition and care for vulnerable people living with HIV:
  - Supplementary feeding and/or food rations for individuals vulnerable to acute malnutrition, meeting micronutrient needs
  - Therapeutic treatment for severe acute malnutrition
  - As soon as feasible, continue or reinstate individual assessments of nutritional status and dietary counselling
- Respond to the specific needs of pregnant and lactating women living with HIV and their children.

And HIV care should be mainstreamed in needs assessment, camp coordination, education, water and hygiene planning, shelter determination, and workplace governance.

on avoiding *stigmatisation*, 2010 guidelines emphasize the need for coordination of existing and fragmented HIV support groups to provide targeted nutritional support, food security, and livelihood support. In the past decade, HIV awareness programmes have been effective in educating communities about the existence of HIV. Increased availability of ART has meant that in stable living conditions, there are frequently visible and productive community members living openly with HIV.

Box 2: The Clinical stages of HIV

The Stage 1: Asymptomatic
Persistent generalised lymphadenopathy (swollen, firm, and tender lymph nodes)

Stage 2: Mild symptoms
Moderate unexplained weight loss (less than 10% of measured body weight) with recurrent infections

- *In children*, unexplained persistent hepatosplenomegaly (large liver and spleen) or persistent fevers
- *In pregnant women*, failure to gain weight during pregnancy

Stage 3: Advanced Symptoms
In adults: Unexplained severe weight loss (greater than 10% of presumed or measured body weight) with chronic diarrhoea for longer than a month, persistent fever, and other infections.

- *In children:* moderate acute malnutrition or wasting not responding to standard therapy

Stage 4: Severe Symptoms
HIV wasting syndrome with multiple persistent infections affecting many organs of the body.

- *In children:* unexplained severe wasting, stunting, or severe acute malnutrition not responding to therapy
- AIDS is clinical stage 4 for both adults and children

Clinical signs with specific relevance to nutritional status include oral ulcerations and sore corners of the mouth in stage two. People in stage three may be burdened with unexplained persistent diarrhoea, persistent oral thrush as well as ulcerations in the mouth, oesophagus, and stomach, anaemia, and loosening teeth.

Source: *WHO case definitions of HIV for surveillance and revised clinical staging and immunological classification of HIV-related disease in adults and children*. World Health Organization, 2007. Available at: http://www.who.int/hiv/pub/guidelines/HIVstaging150307.pdf. Guidelines for children can also be found in Appendix 1 of the WHO 2009 Handbook, *"Guidelines for an integrated approach to the nutritional care of HIV-infected children (6 months-14 years)."*

The link between HIV/AIDS and Nutrition

HIV is a virus that attacks the immune system. In the early stages of infection a person will not show any visible signs of the illness and is considered to be in an asymptomatic phase. After a period of time, if no treatment is given, the effect of a weakened immune system manifests itself through a wide range of opportunistic infections, weight loss, and low-grade fever. AIDS applies to the most advanced stages of HIV infection.

Good nutrition has a role to play in all phases of HIV illness, from the asymptomatic phase, through initial opportunistic infections to AIDS.

Early detection of HIV provides an opportunity to build up good nutritional status and healthy eating habits. Good nutrition is a form of immune protection, especially important in the presence of HIV.

One of the most common signs of HIV progression is weight loss. Unexplained weight loss (more than 10 per cent of body weight) is one of the signs used to indicate that a patient is moving from the asymptomatic phase towards AIDS. There are two patterns of weight loss. The first pattern is a slow gradual decline in weight over time with HIV infection. The second pattern is a rapid and drastic weight loss often associated with a serious infection.

People living with HIV may reduce the amount of food they are consuming due to the following factors:

- Sores in the mouth, throat, and digestive tract
- Persistent nausea, vomiting, diarrhoea, or stomach pains
- Depression reducing appetite
- Economic problems due to a loss of income or lack of access to adequate food
- Tiredness making food preparation slow or difficult

People living with HIV may also have poor absorption of nutrients from food consumed due to:

- diarrhoea
- intestinal tract infection
- side effects of medications

The metabolism of a person living with HIV is altered, partly due to the constant struggle to fight infections. People living with HIV in the asymptomatic phase require an additional 10 percent of energy to meet their increased energy requirements. As a person moves into the symptomatic phases, this energy requirement goes up 20 to 30 per cent more. Children in symptomatic phases require 50-100 per cent more energy than expected by age and weight.

When nutritional needs are not met, the body is more susceptible to infections and may take longer to recover from minor illnesses. This leads to a cycle of more weight loss, more vulnerability, and worsening illness.

Nutrition during pregnancy and early infancy for those affected by HIV

Preventing HIV in women of childbearing age, and knowing the HIV status of pregnant women are important steps to reducing HIV in any community. Even during an emergency, women should have access to reproductive health care options. This is why condoms and ART supplies particularly for pregnant women are an important part of integrated HIV and nutrition planning.

Women who are pregnant or breastfeeding require additional energy and micronutrients to maintain their own health and to build strong babies. Mothers with HIV require the same increase in foods and added micronutrients as other pregnant women, plus the additional 10 per cent to maintain their health in the context of HIV infection.

New WHO guidelines on HIV and infant feeding give countries two options for developing national recommendations. A healthy mother who receives appropriate health care during her pregnancy (with ART) plus a breastfeeding baby protected by ART (given to either the infant or the mother, usually the mother) will most often be the best way to approach nutritional care and prevent mother to child transmission of HIV. In cases where replacement feeding is feasible and can be safely sustained, a country may recommend this. In either case, it should be a national guideline.

Breastfeeding is the most important part of infant nutrition through at least a year of age and beyond. In general, breastfeeding is recommended for up to two years and beyond. In the absence of ART, breastfeeding is still the safest method to prevent infant mortality during an emergency.

Lactating women should be supported with good nutrition and access to adequate clean water supplies in order to maintain breastfeeding through at least the first year of the infant's life. Asymptomatic HIV positive lactating women require the same increase in rations as other lactating women, plus the additional 10 per cent for maintaining health in the context of HIV. One reason that an HIV positive woman may stop breastfeeding early is her own illness, so good nutrition and health maintenance is important for both mothers and babies.

Nutrition during childhood for those affected by HIV

Beyond the first year of life, HIV exposed but uninfected children should transition to family foods. This is an early transition point in many cultures, and they may require some additional nutritional support in terms of animal-based proteins, especially milk, that they would otherwise be receiving in breast milk. These are children vulnerable to acute malnutrition because of their early weaning.

Beyond the first year of life, children known to have contracted HIV should continue to breastfeed up to 24 months of age and beyond. In this case, the breast milk offers no additional risk, and provides the best source of nutrition. Complementary foods should be added to the diet at 6 months to provide energy, nutrients, and dietary diversity.

HIV positive children should be assessed regularly for their nutritional and health status, and be placed on a nutritional care plan to meet their increased energy and micronutrient needs. They are at risk for severe acute malnutrition as the HIV progresses.

All HIV exposed children should also be assessed for vulnerability based on the health status of their caregivers. A child of HIV positive parents may be in the home of parents who are less able to provide for him or her. He or she may also be cared for by other relatives or community members. This can increase the food insecurity pressure on supporting families. HIV exposed children may also become orphans and unaccompanied in the face of an emergency. The amount of HIV in a community may determine the degree of nutrition support that must be targeted towards unaccompanied minors in emergency settings.

HIV/AIDS and nutrition in emergencies

HIV can exacerbate the effects of humanitarian crisis. Likewise displacement from stable home environments, food insecurity, and poverty may increase vulnerability to HIV.

Increasingly, humanitarian disasters occur in areas of high HIV prevalence. In emergencies there is reduced access to nutritious foods, health services, and sanitation. Antiretroviral treatments, HBC programmes, nutritional support programmes, and palliative care programmes are likely in disarray. HIV infection causes poor immunity and increased metabolic demands. The health status of people living with HIV can deteriorate rapidly under these conditions and pose an additional burden on strained emergency services. The lack of awareness and prevention programmes, disrupted families, and gender based violence may increase the spread of HIV through the community. Eight critical HIV/AIDS and nutrition related activities in emergencies need to be distinguished.

Goals of an effective programme of integrated HIV and nutritional care

An effective programme of integrated HIV care and nutritional care and support can be constructed during an emergency. Goals of such a programme would be:

- Maintaining body weight and strength of HIV positive patients
- Ensuring that all patients receive 1 Recommended Daily Allowance of micronutrients
- Maintaining a strong defence against infection
- Improving ability to respond to medications to treat HIV
- Treating the nutritional consequences of HIV infection
- Extending the healthy and productive interval before HIV progresses to AIDS
- Preventing the spread of HIV
- Enabling those affected by HIV to obtain basic services
- Protecting the human rights of those affected

Eight critical HIV/AIDS and nutrition-related activities in emergencies

1. Integration of HIV into all aspects of emergency care - prevention, education, health, basic services, planning and management
2. Targeted food support
3. Maternal and infant health and feeding
4. Treatment and care of HIV
5. Treatment of severe acute malnutrition
6. Support networks, including livelihood support and HBC
7. Food hygiene, sanitation, water, shelter
8. Protection

1. Integration of HIV into all aspects of emergency care – prevention, education, health, basic services, planning and management

Mainstreaming HIV programming into emergency coordination and management can help to prevent the transmission of HIV and uphold the human rights of those living with HIV. Food security and nutrition planning is at the forefront of all emergency planning. HIV is a cross-cutting issue that will impact every aspect of life for those affected. Exclusion of HIV positive individuals in the planning phases increases vulnerability and stigma. Representatives of HIV support groups should participate in planning and response. By including these groups and HIV-positive representatives in governance, the stigmatisation of people living with HIV can be minimised.

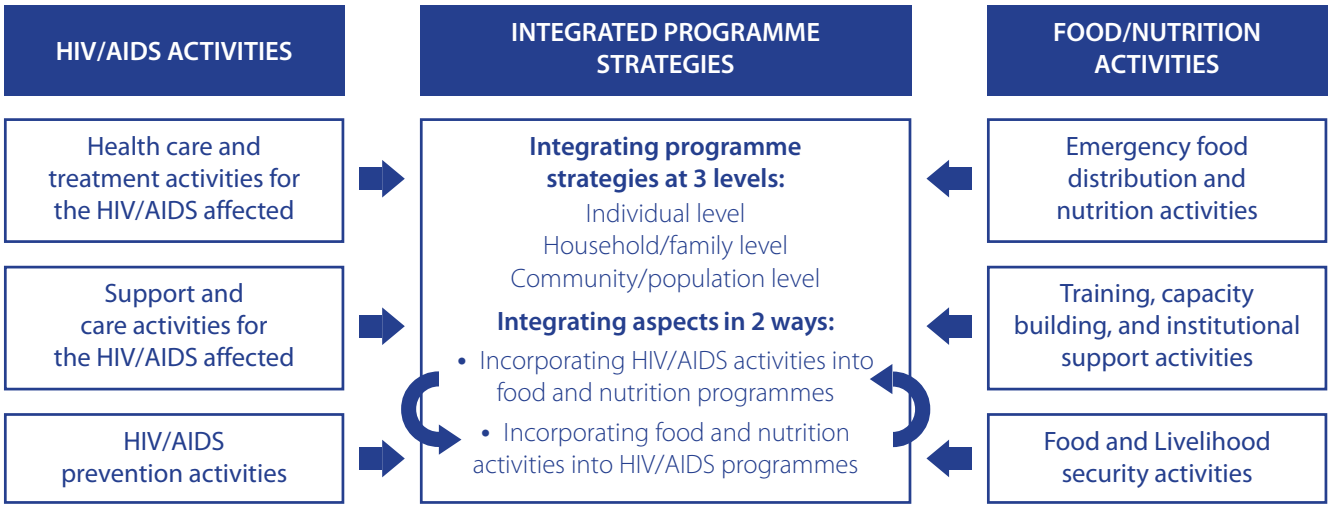
Each community affected by a disaster is unique. There may be a high baseline level of HIV in the area. Alternatively, the community affected may have a hidden element of HIV infection, such as a specific profession or migrating population, which could spiral into a larger epidemic because of the emergency. In either case, HIV awareness messages are important in preventing further spread of the virus during this time. Keeping the problem of HIV at the forefront during all discussions of organisation, shelter allocation, water supply mechanisms, education delivery, health care facility organisation, and security will ensure that the threats of spread are minimised.

The type of emergency and the stage of the emergency will influence the HIV/AIDS and nutrition interventions that need to be undertaken. In the early stages of a quick onset emergency, rapid-response mechanisms may simply consider people living with HIV as vulnerable groups and HIV as a generalised risk, without attending to the individualised differences. If the emergency continues, increased emphasis must be placed on re-establishing services and the active identification of people living with HIV in order to tailor services to respond to specific needs. The feasibility of these goals may depend on the nature of the emergency and the resources available. In the following matrix, each section should build on the previous one to create a tailored response.

Food distribution activities provide a unique and straightforward opportunity to deliver messages that may prevent and mitigate the effects of HIV.

Box 3: HIV/AIDS and nutrition considerations by type of emergency

Nutrition Needs	Important to HIV/AIDS and Nutrition planning
Quick onset emergencies such as flash floods and earthquakes	
Immediate food needs of general population	General distribution of cash or food rations Identify child-headed households, elderly headed households, households with chronically sick members Equal access to food regardless of HIV status
Selection of moderately or severely malnourished adults and children	Establish supplementary feeding and therapeutic feeding programmes as needed Maintain supplementary feeding programmes for those at risk of acute malnutrition due to HIV infection
Selection of pregnant and lactating women – cover nutritional needs of women, support infant feeding practice promoted by national authorities	Breastfeeding promotion, protection and support Identification of HIV positive women ART for pregnant and lactating women as high priority
Establishment of access to health care	ART for those already on therapy as high priority Prophylaxis medications re-established Treatment of opportunistic infections
Proactive protection plans to avoid sex-for-food and/or access to benefits	Rights based education for all vulnerable groups HIV awareness and education Post-contact prophylaxis Condom distribution
Slow onset emergency such as drought	
Protecting and promoting livelihood	Early intervention to protect income and food sources Skills training for changing capabilities due to HIV
Maintaining nutritional status	Consider Blanket Supplementary feeding as general risk of malnutrition increases Programmes to monitor and identify weight loss and illness early Therapeutic feeding care plans
Maintaining access to services providing treatment, care, and support	Antiretroviral treatments continued Prophylaxis medications uninterrupted Treatment of opportunistic infections Clinical staging programme maintenance Home-based care programming
Conflict (displacement and refugees)	
Maintaining nutritional status of populations	Vouchers/cash grants/food aid for basic needs Nutritional assessments for HIV positive individuals Ration modification to decrease labour costs for families with members in poor health, such as grains already milled or ready to use food components
Health care delivery	ART programmes maintained and established Re-established support programmes
Basic Services	Establish services such as food distribution, water, latrines, and sanitation to maintain food safety and decrease illness Avoid stigmatisation or ghetto development while maintaining proximity for those disabled
Proactive protection action plans to avoid sex for food/access to benefits, gender based violence, and child labour	Rights based education for all groups In a conflict situation, additional security needed to ensure safe access to services and prevent violence against women Rape and abuse counselling



Situational assessment as a basis for programme design, adapted from UNHCR (2004), Integration of HIV/AIDS activities with food and nutrition support in refugee settings: specific programme strategies.

Depending upon the baseline prevalence of HIV in the community affected by the emergency, HIV prevention programmes, specialised clinics treating HIV patients, HIV community support groups, and Preventing Mother to Child Transmission (PMTCT) programmes may have already been established prior to the emergency. These programmes may have incorporated either nutritional support or education programmes, and reconstitution of these vital programmes will provide a link to food distribution activities.

The ideal is to integrate HIV into existing food assistance and livelihood support, and integrate food assistance, security, nutrition, and livelihood support into HIV-related projects and activities. The two programming activities can strengthen one another.

2. Targeted food support

In emergencies, guaranteeing access to adequate food to meet all the nutritional needs of the affected population is essential. Food assistance is part of a life-saving short term response for people in emergencies, as are efforts to restore and secure food security. Some considerations include:

- Household food insecurity should be the main (initial) targeting principle, regardless of whether HIV status is known
- HIV prevention and sensitisation activities should be linked to large-scale food distribution
- Particular attention should be given to the identification of households that may be vulnerable because of the presence of HIV or AIDS. These may include:
  - Child-headed households
  - Orphan-hosting households (these may be relatives of the children or other community members who have taken in the children of those who have died from AIDS)
  - Elderly-headed households (grandparents or others caring for small children)
  - Households caring for chronically sick members
  - Households with only sick members (when communities and families have ostracised them)
- Targeting people living with HIV/AIDS directly may be possible if there is no stigma or discrimination; if the targeting does not increase stigma; if the targeting does not unjustly exclude non affected households.

There are many issues surrounding targeted food support, principally:

Should there be targeted food support?

What should the food support consist of?

How should it be carried out?

What are the nutritional considerations in designing a ration for people living with HIV?

People living with HIV have special nutritional requirements. These needs relate to both quality and quantity of food. There is no need for a change in the relative proportion of protein or fat in the diet.

Challenge 1: Targeting in areas of high prevalence

Position one: The particular nutritional needs of people living with HIV require a specific programmatic response in terms of additional rations and/or cash in order to provide for all nutritional requirements.

Position two: Positive discrimination of people living with HIV, over and above specific clinical considerations (such as those suffering from severe or moderate acute malnutrition) is not appropriate or acceptable in emergencies because it is unfair to others also struggling with difficult circumstances.

Position three: Food distribution to people living with HIV, over and above specific clinical considerations (such as those suffering from severe or moderate acute malnutrition) is not appropriate or acceptable in emergencies as this targeting identifies the status of the beneficiaries to the communities and may lead to stigmatisation of people living with HIV or their households.

It is essential to consult people living with HIV and the wider community in order to understand the cultural sensitivities and the potential impact of targeting people living with HIV in their households. Decisions about whether to institute targeted programmes or to ensure access to non-targeted programmes should be driven by the results of the consultation together with an assessment of financial and logistical factors.

Research has not conclusively determined, and the humanitarian policy community has not concluded, whether micronutrient needs are the same or greater for HIV positive individuals than for others. However, it is known that HIV positive individuals do frequently have micronutrient deficiencies. Policy currently states that people living with HIV should receive one daily requirement of all vitamins and minerals. This is often not possible in the best of circumstances, and the requirement is not met through the standard emergency ration food baskets even with fortified foods. This may represent an additional requirement for HIV positive people if the micronutrient balance of the food basket is not adequate.

Due to increased metabolic strain from fighting infections, the energy needs of people living with HIV are increased. These are summarised below:

When there is a known high prevalence of HIV and individuals or families affected by HIV are not targeted, the general food distribution ration may need to be altered to include these considerations.

Rations need also to be designed for utilisation by people living with HIV/AIDS. Because of increased illness, increased metabolic strain, and decreased energy levels of people living with HIV, the foods should be easy to receive, carry, cook, and serve. Modifications to the food distribution planning may include:

- Short distances to households, with smaller packages and more frequent distributions. Where there are child or elderly-headed households, carrying a large ration a long distance can be difficult. Where feasible, smaller (two-weekly) rations should be considered in order to reduce the quantity to be carried.
- Milled cereal/flour/meal is preferable to un-milled cereals because of ease of preparation, consumption and digestion. This will reduce the burden on the carer travelling to a mill or pounding grain. Meals must also be prepared and served more frequently during the day for chronically ill people.

Box 4: Energy Needs of People living with HIV

Asymptomatic HIV-positive adults	Increase energy by ~10%
Pregnant or lactating women with asymptomatic HIV	Increase energy by ~20% +~10% = ~30%
Adults with symptomatic HIV-related infection or AIDS (including pregnant or lactating women)	Increase energy by ~20-30%
Asymptomatic HIV-positive children	Increase energy by ~10%
HIV-positive children experiencing weight loss or HIV-related illness	Increase energy by ~50-100%
Children with severe acute malnutrition	According to WHO guidelines for all children with severe acute malnutrition

Box 5: Good breastfeeding practice

Age of infant	Guidelines
0-6 months	Exclusive breastfeeding
6-9 months	Gradual introduction of complementary food with continued breastfeeding
9-24 months	Introduction of family food with continued breastfeeding

- *Ready to Use Therapeutic Foods* (RUTF) or *Lipid Nutrient Supplements* should be considered for those who need a high energy density delivered with a limited ability to eat because of illness or lack of appetite. Because of their expense, these foods may need to be reserved for specific situations.
- Micronutrients may need to be supplemented in addition to fortified flours, and adjusted to the level of fortification. This may be met with vitamin supplements or micronutrient *sprinkles*, in ways similar to the distribution methods of vitamins for children or for pregnant or lactating women.

For details on how to adjust minimum ration size and composition, consult the Annex.

The individuals and families receiving food aid must have safe access to foods:

- Women and girls should have direct access to food distributions and rations, in order to protect them from potential abuse and sexual exploitation
- Programmes may need to allow for an alternative recipient of food if the head of the household is sick or otherwise unable to receive rations on behalf of the household
- When possible, efforts should be made to avoid revealing the HIV status of individuals to communities that are not supportive or may cause harm to those known to be infected.

Targeting of food aid to HIV/AIDS affected households has been carried out in a variety of ways through existing HIV/AIDS programmes. These include:

- HBC programmes where additional rations or support is given to households through the network of carers
- Orphans and vulnerable children programmes where additional rations or supplementary foods are provided
- Distributions to patients on ART therapy where medical interventions are supplemented by food aid packages to mitigate side effects and increase the positive impact of the medication. Food aid can encourage adherence to treatment regimes.
- Food By Prescription programmes, which may not necessarily be linked to ART
- Treatment of acute malnutrition through community-based therapeutic feeding programmes in areas of high HIV prevalence

The World Health Organization released revised Guidelines on HIV and infant feeding in 2010. The key principles identified were:

1. Balancing HIV prevention with protection from other causes of child mortality
2. Integrating HIV interventions into maternal and child health services (including access to CD4 testing and antiretroviral treatment)
3. Setting national or sub-national recommendations for infant feeding in the context of HIV (making a decision to either promote breastfeeding and ARV treatment or to avoid all breastfeeding)
4. When antiretroviral drugs are not (immediately) available, breastfeeding is still the best prevention for infant mortality. Infants below the age of six months should be exclusively breastfed (no additional or mixed feeds)
5. Informing mothers known to be HIV-infected about infant feeding alternatives
6. Providing services to specifically support mothers to appropriately feed their infants
7. Avoiding harm to infant feeding practices in the general population
8. Advising mothers who are HIV-uninfected or whose HIV status is unknown
9. Investing in improvements in infant feeding practices in the context of HIV

Source: *World Health Organization (2010), Guidelines on HIV and Infant Feeding: Principles and recommendations for infant feeding in the context of HIV: a summary of evidence*. WHO, Geneva.

When health facilities are established with the capacity to manage ART, health care staff should provide individual assessments to take into account specific factors that affect nutritional status. Issues of food availability, access and utilisation all have a place in the determination of food security for HIV positive individuals.

3. Maternal and infant health and feeding

The most important principle of infant feeding in emergencies should be breastfeeding support. Women in emergency situations should be encouraged to continue breastfeeding in order to preserve both the physiological and psychological health of the young infant. Module 17 covers infant and young child feeding in detail.

Good breastfeeding practice should be encouraged as outlined in **Box 5**.

Mothers with HIV may transmit the virus to their infants in several ways. Before antiretroviral treatments, the combined effect of transmission during pregnancy, intrapartum transmission, and transmission through breastfeeding was as high as 40%. With the introduction of antiretroviral therapy during pregnancy and delivery, this has reduced to around 10%. Recent data has shown that the provision of ART to either the mother or the infant can significantly reduce the incidence of postnatal transmission of HIV through breastfeeding. This evidence combined with the well-known risks of illness and mortality in non-breastfed infants, strengthens the importance of encouraging breastfeeding to HIV positive mothers.

One of the most important effects of this new guidance is the delivery of a consistent message to HIV-positive mothers. In the case of an emergency, breastfeeding is the clear choice. The guidelines state *"In circumstances where ARVs are unlikely to be available, such as acute emergencies, breastfeeding of HIV-exposed infants is also recommended to increase survival."* Infants below the age of six months should be exclusively breastfeed. Complementary feeds should be added to the infant's diet at 6 months and gradually increased. It is high priority to deliver the same clear guidelines and support of breastfeeding to all mothers regardless of HIV status. At the same time they should provide HIV testing for all mothers to determine status and to obtain and dispense appropriate ART treatments to breastfeeding mothers as a complement to breastfeeding.

- All mothers should receive the care that they need to prevent the progression of their HIV infection and to protect their infants from contracting HIV.
- When an HIV-positive mother is breastfeeding, either she or the infant should receive ART. While neither method is prioritised in the guidelines, it is more common for the mother to have begun ART while pregnant and continue this treatment for the entire duration of breastfeeding than for the infant to be started on ART without treating the mother.
- HIV-positive mothers should exclusively breastfeed for the first 6 months and then continue to breastfeed while introducing healthy complementary feeds for at least the next 6 months of life.
- Breastfeeding should only stop when a nutritionally adequate diet can be achieved without breast milk.
- When a mother decides to stop breastfeeding, the child should be weaned gradually over 1 month rather than abruptly. ART for the infant should continue for a week after all exposure to breast milk has ceased.
- Complementary foods should be provided to children over 6 months of age. Children should be fed at least 4 or 5 times a day.
- When a child is known to be HIV-infected, the mother should be encouraged to continue to breastfeed up to 2 years or beyond as is recommended for the general population.

In **Case example 1**, observations from a Tanzanian refugee camp show how establishing a breastfeeding corner in the acute stage of an emergency can support mothers to improve breastfeeding practice. In areas of high HIV prevalence the support given to mothers in acute emergencies to exclusively breastfeed would be an important part of the HIV/AIDS treatment and support programme.

Despite the strong recommendation to advise breastfeeding up to 12 months of age, a mother may choose to stop breastfeeding at another point. The decision to replace breastfeeding with formula feeding should be carefully made so that infants have sufficient nutrition for normal growth and development. While the mnemonic AFASS (acceptable, feasible, affordable, sustainable, and safe) is easy to remember, the more explicit recommendations in Box 6 should be followed:

An alternative to formula feeding for HIV-positive mothers without access to ART is the expression and heat treatment of breast milk. This is meant to be an interim feeding strategy rather than a long-term solution for a lactating mother. It may also be used to safely treat donated breast milk from a breast milk bank or wet nurse. This is a very time intensive activity as it involves both expressing milk and treating milk before each feed. In the majority of emergency settings it would not be possible to store expressed and treated milk safely. Women would be required to spend long hours expressing and treating the milk in order to satisfy on-demand feeding of young infants. This may become an option after the six months exclusive breastfeeding stage when other food stuffs have been introduced to complement breast milk, and the infants have additional sources of caloric intake. The complexity and safety of this option should be carefully considered in emergencies before recommending it as a viable option for HIV-positive mothers.

Case example 1: From breastfeeding corners to community-supported breastfeeding in Tanzania

In the refugee camps in north-west Tanzania babies were generally breastfed and there was little or no availability of replacement food for infants. Breastfeeding corners were established in the camps due to the problems faced by mothers to exclusively breastfeed during the first six months as women were facing high levels of stress and social disruption. Women with high levels of stress having given birth in traumatic circumstances; prima gravidaes (first babies); and women separated from normal support structures were identified and attended the breastfeeding counselling sessions. The main counselling sessions in the Tanzanian refugee camps included the following topics:

- The importance of exclusive breastfeeding
- The importance of feeds during the nights
- The need to respond to demand feeding
- Identification of the signs that the baby wanted feeding
- Identification of the signs of a 'full' breastfed baby

Although the breastfeeding corners were felt to be useful in the acute stage of the emergency, the authors recommended that in long-term refugee situations it was important to establish community-based breastfeeding support to reduce the time women spent away from their homes and decrease the amount of resources needed for the service.

Source: Kulwa Machibya, L. 2007, *'Breastfeeding support in the refugee camps of North Western Tanzania'*, Field Exchange, 31.

Box 6: Conditions needed to safely formula feed

a) Safe water and sanitation are assured at the household level and in the community

b) The mother, or other caregiver, can reliably, continuously, provide sufficient infant formula milk to support normal growth and development of the infant

c) The mother or caregiver can prepare formula cleanly and frequently enough so that it is safe and carries a low risk of diarrhoea and acute malnutrition

d) The mother or caregiver can, in the first six months, exclusively give the infant formula milk and continue to provide appropriate formula or powder milk during the next 6 months and beyond as the child weans to other foods

e) The family is supportive of the practice

f) The mother or caregiver can access health care that offers comprehensive child health services

Source: World Health Organization (2010), *Guidelines on HIV and Infant Feeding: Principles and recommendations for infant feeding in the context of HIV and a summary of evidence*. WHO, Geneva.

Any breast milk substitute should always be administered via a cup rather than a bottle and teat. Bottles and teats are extraordinarily difficult to keep clean and sanitary. Contaminated milk containers easily transmit diarrheal illness to infants. One reasonable approach to preventing these diarrheal infections would be to ban bottles entirely. An alternative to cup feeding would be cup and spoon feeding.

Case example 2 from the Lebanon demonstrates how relief aid can negatively affect breastfeeding practice. If the experience in Lebanon occurred in areas of high HIV prevalence, the impact on babies born to HIV-positive mothers would be extremely serious.

Whether an infant continues to breastfeed to the recommended 12 months, avoids all contact with breast milk according to a national guideline, or stops breastfeeding at some other time because of the mother's death, illness, or inability or unwillingness to breastfeed, care must be taken to ensure the adequate nutritional intake of children below the age of 24 months. The following guidelines were developed for non-breastfeeding children above the age of 6 months:

- Ensure that energy needs are met: approximately 600 kcal per day at 6-8 months of age, 700 kcal per day at 9-11 months of age, and 900 kcal per day at 12-23 months of age.
- Gradually increase food consistency and variety as the infant gets older, adapting to the infant's requirements and abilities: mashed food at 6 months, finger foods at 8 months, a variety of family foods at 12 months. Avoid foods in a form that may cause choking.

Case example 2: Impact of an emergency response on breastfeeding in Lebanon: 2006

In July 2006 a major military offensive started between Hizbollah and Israel and 900,000 people were displaced within Lebanon. During this period there was increased availability of infant formula through donations, disruption of normal social support systems and high levels of fear and stress. A study carried out by Save the Children Alliance showed that of 20 mothers, 5 had stopped breastfeeding completely, 8 had started mixed feeding (before six months) and/or reduced breastfeeding. The reasons given by the mothers were:

- Being too busy
- Recommendations of medical staff as they were on medication for stress
- Embarrassment of breastfeeding in public (they were in temporary shelter)
- Infant refusal

Humanitarian workers, doctors and nurses in camps for internally displaced persons (IDPs) stated that the availability of infant formula was another important factor.

Source: Maclaine, A. and M. Corbett (2006), *'Experiences from Indonesia and Lebanon: Infant feeding in emergencies,'* Field Exchange, 29.

- For the average healthy infant, meals should be provided 4-5 times per day, with additional nutritious snacks (such as pieces of fruit or bread or chapatti with nut paste) offered 1-2 times per day, as desired. The appropriate number of feedings depends on the energy density of the local foods and the usual amounts consumed at each feeding. If energy density or amount of food per meal is low, more frequent meals may be required.
- Feed a variety of foods to ensure that nutrient needs are met. This should include animal-source foods in addition to or including milk if possible or if not both grains and legumes for protein quality. Foods should contain adequate calcium, vitamin A, and adequate fat content. Do not give drinks with low nutrient value, such as tea, or sugared drinks, and limit juice to avoid displacing higher nutrient content foods.
- As needed, use fortified foods or vitamin-mineral supplements that contain iron (8-10 mg/d at 6-12 months, 5-7 mg/d at 12-24 months). If adequate amounts of animal-source foods are not consumed, these fortified foods or supplements should also contain other micronutrients, particularly zinc, calcium and vitamin B12.
- Non-breastfed infants and young children need at least 400-600 mL/d of extra fluids (in addition to the 200-700 mL/d of water that is estimated to come from milk and other foods) in a temperate climate, and 800-1200 mL/d in a hot climate. Plain, clean (boiled, if necessary) water should be offered several times per day to ensure that the infant's thirst is satisfied.
- Practise good hygiene and proper food handling.
- Practise responsive feeding, applying the principles of psycho-social care. Remember that feeding times are periods of learning and love – talk to children during feeding, with eye to eye contact.
- Increase fluid intake during illness and encourage the child to eat soft, varied, appetising, favourite foods. After illness, give food more often than usual and encourage the child to eat more.

Adapted from *'World Health Organization 2009: Guiding principles for feeding non-breastfed children 6-24 months of age'*, WHO, Geneva.

It is useful to note that HIV-exposed infants have decreased growth compared to infants who are not HIV-exposed, independent of infant HIV infection. Possible sources of this difference are the decision to stop breastfeeding early, decreased ability of the mothers to care for their infants, psychological neglect by HIV-positive women, or decreased nutritional content of maternal breast milk. Because of this known difference, it is important to regularly screen HIV-exposed children for appropriate growth and the HIV-positive mothers for excessive weight loss, illness, and depression.

Testing an Infant for HIV

Antibody based HIV testing is not definitive until after 18 months and several months past the end of breastfeeding exposure to antibodies. A child can retain maternal antibodies and test positive because of those antibodies (without infant infection) up to 18 months after delivery. A negative test, however, is definitive. Repeat testing after all exposure to breast milk has ceased is indicative of true infection. An *RNA based test* is specific for the presence of HIV infection at any age, but these are infrequently available.

Maternal Health

Pregnant and lactating women with HIV should receive the same health care and nutritional support as other pregnant and lactating women. Guidelines for care of mothers in emergencies are covered in module 17. Interventions include increased caloric and micronutrient supplementation, support of maternal health services, and keeping the infant and mother together when possible during maternal illness. It is important that HIV-positive women be identified so that they can also

receive appropriate care to prevent mother to child transmission. All HIV-positive women who are pregnant or breastfeeding should receive antiretroviral therapy and appropriate treatment for opportunistic infections.

Key action points:

- Identify HIV-positive pregnant women.
- Provide HIV-positive pregnant women with ART and either lactating mothers or their infants with ART to prevent mother to child transmission of HIV.
- Establish breastfeeding support services delivering strong messages for exclusive breastfeeding up to 6 months of age and continued breastfeeding up to 12 months of age.
- Test infants for HIV by 12 months (in the most definitive way available). Those who are HIV-positive should continue to breastfeed, but those who are not HIV-positive by 12 months should be weaned over the course of a month while still protected by ART.
- Monitor HIV-exposed infants and HIV-infected mothers for growth, weight gain, and infections.
- Ensure adequate complementary foods for infants and encourage frequent feedings.
- Mothers should be considered for supplementary feeding programmes and infants for complementary feeding programmes.

4. Treatment and care of HIV

In emergencies, it is essential to establish health care systems that can provide support to people living with HIV. A balanced diet is an important part of HIV management. The medical treatment itself, primarily the use of ART and cotrimoxazole for prevention of opportunistic infections, has become an essential component of the care of people living with HIV. Nutritional assessment and counselling are key health maintenance efforts.

Appropriate medical treatment for HIV positive individuals assists nutrition in the following ways:

- The use of ART can improve health status and appetite to the degree that food consumption improves
- ART reduces the catabolic state and enables the body to utilise nutrients better
- The use of cotrimoxazole therapy can prevent opportunistic infections which cause decreased appetite, nausea, or vomiting
- ART in conjunction with breastfeeding is the healthiest way to feed infants of HIV-positive mothers
- The treatment of mouth sores and thrush can make eating less painful for HIV patients
- Treatment of opportunistic infections can restore individuals to health so that they can again contribute to the income generating and food security activities of their families

It is also important to note that medication programmes for people living with HIV have been shown to be more effective when combined with food distribution programmes. Sometimes this is called food by prescription (FBP). FBP is almost always provided based on biomedical criteria, usually a state of acute malnutrition. It is finite in duration, just as another prescription might be used. Medication adherence is improved with these programmes: it offsets the side effects of other drugs given, and thus the health of the people living with HIV is improved. Food by prescription programmes can be a form of income transfer, and they can be a way to deliver food aid to those in need in a way that is seen as just to the remainder of the community.

Identification of people with HIV infection is essential to both preventing the spread of HIV and to providing those individuals with lifesaving and life improving interventions. Voluntary counselling and HIV testing should be established as a priority for pregnant women, because intervention at this stage may help to prevent the transmission of HIV and enable the mother to provide appropriate care for her infant. As soon as possible, widespread HIV testing should be made available as part of the HIV awareness and prevention strategies (which can be fruitfully integrated with food distribution activities).

Protecting and caring for health care personnel and other members of the community is also important to delivery of health care to HIV-positive individuals. The following measures for the health sector are recommended by IASC in their HIV and nutrition action framework:

- Prevent HIV transmission in health care settings with standard precautions, appropriate waste disposal, and safe blood supplies
- Provide access to good-quality condoms
- Provide post-exposure prophylaxis for occupational and non-occupational exposure
- Manage sexually transmitted infections
- Prevent mother to child transmission through ensuring safe and clean deliveries, appropriate use of ARTs, treatment and care of infants, and the availability of *contraception*
- Provide care for people with HIV-related illnesses
- Provide ART to those in need, beginning with pregnant and lactating women and uninterrupted provision to those already on ART therapy
- Provide basic health care and support to key populations at higher risk of exposure to HIV

Case example 3: Treatment of AIDS patients in conflict settings in the Democratic Republic of the Congo: 2004

Drawing on lessons learned from treating tuberculosis in conflict settings, Médecins Sans Frontières (MSF) established a comprehensive care programme, including ART, for AIDS patients in Bukavu, in the eastern region of the Democratic Republic of the Congo (DRC). There was a need for extensive sensitisation campaigns and participation of people living with HIV in setting up treatment regimes. Particular attention was paid to involving the patient in decisions around care and treatment. Heavy fighting erupted in May 2004 leading to the temporary evacuation of health staff and the significant displacement of the population. Dedicated local staff maintained a minimum programme and an announcement was made on local radio to inform patients that the clinic would be open for the distribution of ARV treatment. Delivery of ARVs with good adherence was maintained throughout. No patients were lost to follow-up and treatment continued without disruption when the situation stabilised.

Source: Médecins Sans Frontières and Ellman, Thomas, Heather Culbert, Victorio Torres-Feced (2005), *'Treatment of AIDS in conflict-affected settings: a failure of imagination'*, The Lancet, 365(9456), 22 January.

Case example 3 shows how not only is it possible to establish functional HIV/AIDS treatment programmes in extremely difficult circumstances, but also that it is, in fact, an imperative.

Because the use of ART has become a mainstay of HIV treatment, it is important to consider the following aspects of ART as they relate to nutrition. Medication is most effective when people are well nourished. There are 4 main ways that medication interacts with food/nutrition:

1. Food affects medication absorption, metabolism, distribution and excretion.
2. Medication affects nutrient absorption, metabolism, distribution and excretion.
3. Medication side effects affect food consumption and nutrient absorption.
4. Medication and certain foods create unhealthy side effects.

ART food management may be drug specific as:

- Some ART needs to be taken on an empty stomach.
- Others should not be taken with certain foods.
- Some ART reduces nutrient absorption and may require foods rich in certain nutrients.
- Certain ARTs cause side effects that affect food consumption.
- Some side effects of ART can be managed through specific food responses.

Steps for managing diet in relation to the interaction between ARVs and food are shown in Box 7. However, these are extremely difficult to carry out in emergency situations where there are limited options in terms of diet, medical support, and diagnostic facilities.

Box 7: Dietary management of interactions between ART, food and nutrition

1. Identify the specific food and nutrition interactions of the drugs and the dietary needs that stem from the interactions.
2. Identify available and accessible foods that meet the nutritional needs the drugs call for and identify the foods that are contraindicated by the drugs.
3. Plan a diet and drug meal timetable that addresses the drug-food interactions and that meets the overall nutritional needs of the person living with HIV/AIDS.
4. Follow up to elicit feedback and assess whether the person living with HIV/AIDS is facing difficulties in following the planned diet and timetable.
5. Adjust the planned diet and timetable if necessary and make the plan more feasible in terms of food access, acceptability, quality, taste, or timing.

Whether an individual is on ART or not, regular weight and nutritional assessment is key to identification and early treatment of those who are either becoming malnourished or advancing towards AIDS. Treatments for acute malnutrition for people living with HIV will always involve nutritional assistance, but they may also signal the appropriate time to begin ART or to investigate for other treatable infections.

5. Treatment of severe acute malnutrition

Children with HIV frequently become severely malnourished. Any child who presents with severe acute malnutrition and unknown HIV status should be treated with therapeutic feeding. Standards for treating severe acute malnutrition can be found in module 13, Management of severe acute malnutrition.

HIV-positive children have high metabolic needs, especially when sick, and are thus more commonly malnourished than HIV-negative children. The existence of another family member with a chronic illness may result in decreased food security within a family and precipitate childhood malnutrition. The general population of malnourished children may therefore include families burdened by previously unidentified cases of HIV infection. Caregivers in acute treatment programmes should never assume that malnourished individuals in an emergency are infected, but VCT for HIV should be offered to all patients with severe acute malnutrition and their carers. This can be an opportunity to identify individuals in need of more extensive food aid and community support services. It is another example of the importance of integration of HIV into general emergency planning and action.

Known HIV- infected children deserve special attention because of their increased metabolic needs and their dependency upon adults who are themselves vulnerable because of their HIV infection. The World Health Organization has developed further guidance on the management of HIV-positive children in the publication *Guidelines for an Integrated Approach to the Nutritional care of HIV-infected children 6 months-14years, preliminary version for country introduction*, WHO, 2009.

The growth of HIV-infected children should be assessed regularly. Regular assessment provides opportunities to monitor HIV disease progression, identify complications, and plan interventions as needed. Assessment of the child includes asking the caregiver about the child's growth and health status, evaluation of the growth curve of the child according to well-kept records, and anthropometric assessments of current nutritional status.

- The standards for **severe acute malnutrition** are the same in HIV-positive children as in all children. The presence of oedema in both feet, weight for height less than -3 z scores below median WHO reference values, or *MUAC* below 115 mm in children aged 6-60 months.
- *BMI* z-scores can be used in school age children and adolescents but there are no international standards for cut-offs. Alternately, MUAC cut-offs of less than 129 mm in children 5-9 years or of less than 160 mm in children 10-14 years could be used.[1, 2]
- An additional category of **poor weight gain** for HIV-infected children includes moderate acute malnutrition denoted by weight for height less than -2 z score. **Undernutrition** may also be identified in this population by growth curve flattening or through documented or reported weight loss.
- **Increased nutritional needs** in HIV-positive children could be indicated with a history of persistent diarrhoea, chronic lung disease (including tuberculosis), or malignancy.

HIV-infected children should be clinically staged and started on antiretroviral therapy according to WHO guidelines. Often the initiation of ART can improve the clinical status and resolve the increased nutritional needs.

There are three recommended nutritional care plans for HIV-positive children:

A. **For the child who is growing well** – these children should be reviewed every 2-3 months. Nutritional counselling should focus on dietary diversity, safe food preparation, and continued breastfeeding if appropriate. General counselling should include the necessity of exercise and play to maintain strong bodies, regular health maintenance, and avoiding risk factors for acute malnutrition. These children should increase energy intake by 10% and have adequate micronutrient intake. If this cannot be achieved with general food distribution rations and local adaptation of diet, these children may be candidates for food or micronutrient supplementation programmes.

B. **For the child with poor weight gain or increased nutritional needs** – These children should be reviewed initially within 1-2 weeks and then every 1-2 months if child is responding to interventions. Child should be clinically staged and assessed for ART needs/eligibility, and referred for medical treatment of infections. Nutritional counselling should include several steps:
   - *Evaluation of the child's current diet*. The variety in the diet, the inclusion of milk and other animal products, the child's appetite and ability to eat should be reviewed.
   - *Discussion of who gives the child his or her food and how the child eats*. Children without consistent caregiver support and responsiveness may be at risk of undernutrition.

[1] WHO 2009. *Guidelines for an integrated approach to the nutritional care of HIV-infected children (6 months -14 years)*. Geneva, WHO.

[2] The recommendation for children 10-14 years of age is consistent with WHO (2004). *Acute care. Integrated Management of Adolescent and Adult Illness. Interim Guidelines for First-Level Facility Health Workers at Health Centre and District Outpatient Clinic*. (2004). Geneva, WHO.

Case example 4: Ready-to-use therapeutic foods for the treatment of acute malnutrition in Malawi

Malawi has one of the highest rates of HIV prevalence in sub-saharan Africa, combined with a high rate of childhood acute malnutrition. From 2001 onwards, St. Louis Nutrition Project of the Malawi College of Medicine has been researching the effectiveness of Ready-to-Use Therapeutic Foods (RUTFs) for the treatment of severe acute malnutrition. During the food crisis of 2002-2003, efforts to treat children with home-based therapy accelerated. In one study of 260 children, either imported or locally produced RUTF resulted in a recovery rate of 95% in HIV negative children, and of 59% in HIV-positive children, even in an era when ART treatment was unavailable for childhood HIV infection. Not having a mother alive and in the home meant that children were 8 times more likely to have a poor outcome. Further studies by this group have shown that these high recovery rates can be achieved in a decentralised setting at community health posts by staff with only basic training. Lessons which could be drawn from these studies include:

- Outpatient management of severe acute malnutrition can be the same for both HIV-positive and HIV-negative children
- Appropriate nutritional management of children with HIV can improve outcomes even when ART supplies are unavailable
- Sick or absent mothers can determine the health outcomes of the entire family, emphasising the need to identify and target household food insecurity.

Source: Sandige H et al. (2004). *Home-based treatment of malnourished Malawian children with locally produced or imported ready-to-use food.* J Pediatr Gastroenterol Nutr. Aug; 39 (2): 141-6.

Ciliberto M et al. (2005). *Comparison of home-based therapy with ready-to-use therapeutic food with standard therapy in the treatment of severely malnourished Malawian Children: a controlled, clinical effectiveness trial.* Am J Clin Nutr Apr; 81 (4): 864-70.

Linneman Z et al. (2007). *A large-scale operational study of home-based therapy with ready-to-use therapeutic food in childhood malnutrition in Malawi*. Matern Child Nutr. Jul; 3 (3): 206-15.

- *Assessment of food and income at home*. The ability of the family to acquire, store, and prepare food is a complex interaction of labour, time, money, access, and organisation. Major changes in a child's home or community situation may precipitate nutritional decline. Local availability of food in an emergency may decline.
- *Counselling on Safe food preparation, food and water storage and hygiene*. Environmental factors play a strong part in the development of preventable illnesses.

These children should receive an additional 20-30% food based on the weight of the child. Integrated HIV and nutrition programmes should identify children at risk and communicate the increased energy need to the caregivers. When local resources allow, the increased energy may be provided in increased serving sizes or increased energy density in the diet may be increased through such means as added oil or butter in each serving for the child. In emergency situations when caregivers cannot supply the extra calories, this requirement will likely need to be met through supplementary feeding programmes of fortified processed foods.

C. For the severely malnourished HIV-infected child – those with medical complications should be admitted for inpatient stabilisation. Home therapy with RUTF is the therapy of choice for severely malnourished children without medical complications. Therapeutic feeding should provide 50-100% extra energy (approximately 200 kcal/kg/day) and a balanced supply of micronutrients. Clinical staging, assessment for ART, and medical review for other treatable conditions is indicated during nutritional recovery.

Children with HIV may have special nutritional needs based on poor appetite, mouth sores, and other illnesses. Food intake should be continued during illnesses and targeted to the recovery period after acute illnesses to recover short-term weight loss. Food must be made available day and night and administered in a patient and loving way. Food should not be withheld from a sick child unless there is a medical reason.

Children on ART may also have altered nutritional needs.

- Growth on ART is a good indicator of treatment response. Increased appetite during this time should be met with access to healthy food with adequate amounts of fat, protein, and carbohydrates. Vitamins and minerals should be balanced during this time of rapid growth, and dietary diversity preserved. When a child has stabilised to an appropriate weight, he or she will once again require only appropriate maintenance energy intake plus the increased 10% for asymptomatic HIV infection.

Challenge 2: HIV/AIDS and adult undernutrition

HIV may increase the prevalence of severe acute adult malnutrition. However, understanding of adult undernutrition and how to measure it in emergencies is limited. Body mass index (BMI) is a measure of undernutrition in adults; however, there is a lack of clarity and agreement on cut-offs. MUAC is not definitive either. Different body shapes are normal across different cultures. Weight loss is a measure of undernutrition. However, adult weights are not measured or recorded frequently, so the amount of weight loss is difficult to gauge or to evaluate. Patients may only mention loosening of clothes when asked directly. When weight loss is intentional to improve health and activity level, it should not be considered a sign of undernutrition. Increasingly, there are suggestions that weight and BMI should be routinely measured in adults. Please see Module 6, Measuring Malnutrition: Individual Assessments for more information. Both weight and height measuring capacity is needed to determine BMI and subsequent eligibility for Food by Prescription programmes. These issues are urgent in areas where there is a high prevalence of HIV.

- If the child on ART is gaining weight well, medical review should take place every 3 months and emphasise adherence and food security and health status of caregivers.
- If the child on ART is not gaining weight there should be investigations to determine whether food intake is adequate and hygienically administered. Opportunistic infections, failure to take ART correctly, side effects of ART, and early treatment failure should also be assessed.
- Vomiting in the child on ART should be considered with respect both to medication side effects and to general causes of vomiting, and managed according to *IMCI* guidelines. ARTs may be responsible for severe lactic acidosis requiring urgent medical treatment.
- Children on ART should be monitored regularly for longer term side effects of ARTs such as *lipodystrophy* and metabolic disorders. This will likely not be routine in emergency situations.

HIV-positive adults may also suffer from severe acute malnutrition. Clinical signs and body measurements such as BMI or MUAC are helpful to diagnose malnutrition. Because adults vary greatly in their body types, there is no general consensus or internationally accepted cut-offs to classify the degree of acute malnutrition in adults. Severely malnourished adults should be identified and rehabilitated through an inpatient method for complicated cases and through HBC with therapeutic foods for uncomplicated cases. In the case of adults, prevention of acute malnutrition through the early identification and treatment of HIV, regular assessment of needs and deficiencies, and the provision of medical care and targeted food support will be most effective in management.

Models for management of child acute malnutrition, in particular the experience of home based therapies and community therapeutic care with RUTF should be adapted for the management of severe acute adult malnutrition in emergency settings.

Key action points:

- Assess HIV-positive children regularly.
- Implement appropriate nutrition care plans for patients based on their nutritional needs and disease status.
- Establish community therapeutic care programmes to treat severe acute malnutrition.
- Incorporate medical management, including clinical HIV staging and management of ART, into nutritional programmes.
- Incorporate VCT into programmes managing severe acute malnutrition in the community to identify HIV patients requiring further management.
- Identify special needs of HIV-positive patients and intervene to mitigate them.

6. Support Networks, including livelihood support and home based care

People living with HIV are also at increased risk of nutritional deterioration because of their decreased ability to earn a livelihood. Increased episodes of illness mean missed days of productivity. Even healthy individuals may require more regular health maintenance visits to get medications or participate in monitoring activities. Earning potential under normal circumstances may be hampered, and in emergency situations this may further decline. This is true for the family members of people living with HIV as well. Supporting a family member through an illness can drain limited resources quickly.

Where pre-existing support networks exist, these may be instrumental in bringing the needs of the HIV affected members of the community to the forefront in nutrition planning. Home based care has become one of the main pillars of HIV/AIDS programming worldwide. HBC programmes will generally include basic health care for common illnesses, referral protocols for more complex illnesses, and care and sanitation support for the patient and the household. In emergencies, maintaining a functioning HBC programme will help to reduce severe adult and child acute malnutrition and to limit the risk of opportunistic infections.

A functioning HBC system could provide a safe channel for resources to households with chronically sick members. This may include the provision of direct aid:

- Blended fortified foods or fortified cereals combined with a balanced food basket for optimal nutrition
- Ready to use foods or lipid nutrient supplements to decrease the preparation time needed to care for people with limited appetite
- Cash benefits for the purchase of additional foodstuffs for a balanced diet

Or the provision of services:

- Monitoring of weight and health status through HBC programmes can reduce severe adult and child acute malnutrition by identifying areas of need
- Individual nutritional assessments can find gaps in dietary diversity and address them with changes in food basket or provision of micronutrient support
- HBC limits the risk of opportunistic infections when people with weakened immune systems are not required to wait in health care centres also populated by patients seeking assistance for communicable diseases.

HBC programmes should never focus solely on people living with HIV but provide support for all bed-ridden chronically ill patients and home-bound people living with severe disability. In this way, there is no additional stigma attached to participation in a HBC programme.

A key action for nutritional support for people living with HIV should be long term strategies to protect and adapt their livelihoods. Family members may be hampered by reduced activity; family members who did not previously work outside the home may be called upon to bring in additional resources; and children may grow up without guidance into a trade and livelihood which can eventually make them self-sufficient.

Appropriate relief inputs can be provided to empower these families to restore basic household assets and local food production. These may include:

- Dietary diversity support with availability and access to tools, fertilisers, and improved variety seeds
- Labour-saving tools adapted to local conditions
- Alternative income-generating activities compatible with new activity constraints
- Skill building programmes such as junior farmer fields and life school programmes to combine livelihood support with skills education for children who are unaccompanied, orphaned, or made vulnerable by the illness of family members.

Livelihood support mechanisms may be most important where there are large numbers of vulnerable children relative to adults.

7. Food hygiene, sanitation, water, shelter

Food hygiene, sanitation, and potable (drinking) water are critical in an emergency. For people living with HIV, these issues are even more critical. Weakened immune systems make these individuals more susceptible to diarrhoea, and other waterborne infections. Potable water is a universal need in an emergency. When water systems result in standing water and breeding grounds for mosquitoes, malaria prevalence can increase. Recovery from any infection is slower in patients with HIV, extending the period of time when they have decreased appetite, and increased catabolic demands, and decreased ability to work.

Key action points

Food Hygiene

- Avoid cooked food contamination when communal kitchens are established and cooked food is preserved in household pots.
- Avoid poor storage leading to insect infestation, mould/fungus, and rodents

Sanitation and water availability

- Support latrine construction, and control of stagnant water
- Actively promote hand washing
- Ensure sufficient water supplies in health facilities and home-based care programmes to guarantee sanitary conditions and allow for health care workers to practice *universal precautions*
- Hygiene programmes should dispel myths, if present, about HIV transmission through casual contact

Potable water is an important issue for the entire population

- Support people living with HIV so they can consume eight glasses of clean water daily.
- The location of water facilities should be close to the homes of HIV-positive patients and ensured in health facilities and home-based care programmes.

Case example 5: Gender based violence and access to food rations in Burundi: 2004-2005

A study carried out by CARE international branch in Burundi between October 2004 and June 2005 used theatre and participatory techniques to discuss the sensitive issue of sexual exploitation for food benefits. The findings showed that the practice of sexual abuse linked to receipt of food was widespread and was specifically linked to inclusion on food distribution lists. Unprotected women and girls (with no male family members) were the most likely victims. Measures that were suggested by participants in the research to reduce risk were:

- Always have an agency employee present during the creation of lists to ensure transparency.
- Elect mixed committees of recipients, including women, to monitor lists and food aid distribution.
- End the involvement of local administration in creating lists.
- Ensure list validation is done publically with the active participation of women and young people.

Clear policy guidelines must be established on protection with sanctions for all humanitarian agencies and governments working in emergencies.

Shelter

- Select sites that are safe and secure
- Integrate HIV prevention messages into shelter programmes

8. Protection

Sexual exploitation of men, women and children in exchange for resources, including food or cash benefits, is of constant concern in emergency settings. In areas where there are high levels of HIV prevalence protection issues are even more acute. Gender inequalities may be exacerbated in an emergency, increasing the vulnerability of women to HIV. Emergencies often result in a combination of separation of families and the breakdown of social support systems for individuals outside traditional family structures. Rape may be used as a weapon of war, and/or women or children may turn to often risky coping strategies of exploitative sexual work for basic needs. Protection of those at risk and prevention of HIV prevents further deterioration of a situation.

In addition, in areas of high HIV prevalence there is a high probability of an increased number of households in the following categories:

- Child-headed households
- Households with no adult male members
- Elderly headed households
- Orphans without family
- Households hosting orphans
- HIV-positive people who are suffering from discrimination or alienation

These groups require specific protection interventions to ensure they are safeguarded. Some key issues must be taken into consideration, namely: registration for assistance when there is no responsible adult; protection of assistance and resources when there are no responsible adults in the household; protections of orphan's rights within households; and proactive efforts to decrease stigma and discrimination.

The rights of people affected by HIV must be respected and protected to reduce the effect of HIV on their lives. Sometimes this is because of personal infection, or because of the infection of another household member who may or may not still be present in the home. People living with HIV may be segregated and lose the rights of privacy. Equally, their families and households may experience the same discrimination and suffer from denied access to health, education, food, or other support.

Important policy points that should be in place to ensure the rights of individuals and families living with HIV:

1. Monitor allegations of HIV-related rights violations. When violence against individuals or households is related to access to food or services, it may be necessary to change the distribution patterns or eligibility criteria for nutritional assistance.
2. Ensure HIV service provision respects human rights, including the right to privacy. This may be difficult when food distributions are based on HIV status. Alternate determinations of eligibility that will include people living with HIV, people with other chronic wasting illnesses such as TB, and people affected by family structure changes may be appropriate to avoid identifying recipients as only those with HIV. Child-headed, female-headed, and elderly-headed households may be vulnerable to acute malnutrition for reasons other than HIV.

3. HIV testing should not be mandatory, and all HIV testing should be under confidential conditions, with informed consent and counselling according to international standards.
4. Establish protection for women and girls. This will involve organisation of many aspects of life in the emergency setting, including the receipt of food and the acquisition of water and other basic resources, so that women and girls are not placed in dangerous situations. Prevent and respond to sexual exploitation and abuse. This should include post-exposure prophylaxis and counselling. When HIV issues are identified and addressed in the context of gender-based violence, it can empower victims to seek help in time to potentially prevent infection.
5. Protect orphans and unaccompanied, separated, and other vulnerable children and youth. This may involve registering, monitoring and supporting vulnerable children with communally prepared food and safe shelters.
6. Develop programmes addressing gender based violence. Proactive identification and protection of the most vulnerable households should be done in the context of the culture and the emergency situation.

Annex 1: Suggestions for adjusting food aid rations for areas of high HIV/AIDS prevalence

Source: Inter-Agency Standing Committee, *Guidelines for HIV/AIDS interventions in emergency settings*, IASC, 2006.

The magnifying effects that HIV/AIDS can have on acute malnutrition and mortality in emergencies increase the importance of nutritional considerations when designing rations for populations with a high prevalence of HIV/AIDS.

Calculate the energy requirements of the population

The initial planning figure or energy requirement is 2100 kcal/person/day. Adjust this figure upward or downward based on the following four issues:

- Temperature:
  If the temperature is below 20°C, adjust energy requirements upward by 100 kcal for every 5°C below 20°C.
- Health or nutritional status of the population:
  If either of these is extremely poor, adjust the energy requirements upward by 100-200 kcal. A high prevalence of HIV/AIDS may be justification for adjusting the energy requirements of a population upward. Consult with a nutritionist (UNICEF, WHO, WFP) to determine if such an adjustment is desirable.
- Demographic distribution of the population
  If the demographic distribution is not normal, there may be a need to adjust the energy requirements upwards or downwards. HIV/AIDS can have significant effects on the demographic composition of a population that may need to be considered when planning rations.
- Activity levels
  If the population is engaging in moderate to strenuous physical activities, there may be a need to adjust the energy requirements higher. Activity levels are often underestimated in non-refugee situations. Underestimates may have even more detrimental effects in a population with higher basic physiological needs.