



The Kingdom Of Swaziland
Ministry of Health and Social Welfare

Swaziland

Nutrition and HIV

Guidelines for Service Providers



World Health
Organization
REGIONAL OFFICE FOR
Africa



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FOREWORD

The HIV and AIDS pandemic has been on the global map for some time and remains a great challenge. The disease burden is highest in Sub Saharan Africa with Swaziland bearing the highest prevalence rate of 39.2% (Sero Sentinel Surveillance Report, 2006). HIV and AIDS has devastating effects on the socioeconomic and health status of Swaziland, its adverse effects have been felt at individual, household, community and national level.

The Government of Swaziland realizes several studies that have been conducted which indicate the importance of nutritional interventions in the management of HIV and AIDS among different groups within the population and is committed to improving health and social welfare of all people living in the country by ensuring a comprehensive approach in combating the HIV and AIDS catastrophes. The provision of adequate treatment, care and support for PLWHA is of paramount importance and it is for this reason that the Nutrition Policy has been successfully developed where the guidelines are an implementing tool for the policy.

Since the advent of HIV and AIDS there has been many conflicting messages regarding nutrition and HIV and AIDS, for example, myths, misconceptions and conflicting messages, hence the development of the National Guidelines. While there is no known cure for HIV and AIDS, nutritional support and care for PLWHA remains a major sustainable strategy for reducing the progression from HIV to AIDS.

The nutrition guidelines are dynamic and keep evolving to ensure that people get the most in terms of value from the food that they consume and therefore essential for all stakeholders with special emphasis to health workers, PLWHA, government sector ministries and other HIV and AIDS service providers.

I therefore urge you all to use these guidelines in all your efforts to improve the lives of the PLWHAs and the Swazi nation.

The Honorable Minister of Health and Social Welfare



Njabulo Mabuza

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ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral Therapy
CBO	Community Based Organisations
DHS	Demographic and Health Survey
FBO	Faith Based Organisations
MICS	Multi indicator Cluster Survey
NGO	Non-Governmental Organization
AFASS	Affordable, Feasible, Acceptable, Sustainable and Safe
AIDS	Acquired Immuno Deficiency Syndrome
ANC	Antenatal Care
CHS	Community Health Survey
CSO	Central Statistical Office
DHS	Demographic Health Survey
EPI	Expanded Programme of Immunisation
HIV	Human Immuno Virus
HTC	HIV Testing and Counseling
IBFAN	International Baby Friendly Action Network
IEC	Information, Education and Communication
ILO	International Labour Organisation
IMCI	Intergrated Management of Childhood Illnesses
IMR	Infant Mortality Rates
IYCF	Infant and Young Child Feeding
MOAC	Ministry of Agriculture and Co-operatives
MOE	Ministry of Education
MOHSW	Ministry of Health and Social Welfare
NCP	Neighbourhood Care Points
NGO	Non Governmental Organisation

NVD	Normal Vaginal Delivery
PHU	Public Health Unit
PLWHA	People Living With HIV and AIDS
PMTCT	Prevention of Mother To Child Transmission
PNC	Post Natal Care
RHM	Rural Health Motivators
RHMT	Regional Health Management Team
RHU	Reproductive Health Unit
SINAN	Swaziland Infant Nutrition Action Network
SNNC	Swaziland National Nutrition Council
UNICEF	United Nation Children's Fund
VAC	Vulnerability Assessment Committee
WBW	World Breastfeeding Week
WHA	World Health Assemble
WHO	World Health Assemble
PEM	Protein Energy Malnutrition
TB	Tuberculosis
UNICEF	United Nations Children Fund
VAC	Vulnerability Assessment Committee
WFP	World Food Programme
WHO	World Health Organisation

DEFINITION OF TERMS

Anthropometry	the use of body measurements to assess nutritional well being
Body Mass index	defined as weight (in kg) divided by height (in mts squared). This measures chronic energy deficiency in adults.
Care	provision in the household and the community of time, attention and support to meet the physical, mental and social needs of the growing child and other family members. It leads to the optimal use of human, economic and/or organisational resources.
Chronic food insecurity	long-term lack of access by all households' to food needed for a healthy life for all its members.
Complementary food	any food whether manufactured or locally prepared, suitable as a complement to breast milk or to infant formula from 6 months of age when either become insufficient to satisfy the nutritional requirements.
Diarrhoea	passing of watery stools for more than three times in a day
Emergency	situation of hardship and human suffering that overwhelm people's capacity to manage and cope alone for a period of time and which require intervention with support from outsiders
Food Security	access by all households to food needed for a healthy life for all its members (adequate in terms of quality, quantity, safety and culturally acceptability) and when it is not at

Infant	undue risk of losing such access a child from birth up to the age of 12 months
Nutritional status	The condition of the body resulting from the utilization of essential nutrients available to the body.
Nutritional surveillance	The regular collection of nutrition information that is used for making decisions about actions or policies that will affect nutrition.
Orphan	A child under 15 years has lost either one of both parents
Stunting	having a low height for a given age
Supplementary Feeding	provision of extra food along with whatever is being consumed in order to satisfy the nutritional requirements of the individual
Underweight	having a low weight for a given age
Vulnerability	refers to exposure to contingencies and stress, and difficulties in coping with risk, shock and stress.
Wasting	having a low weight for height.

CHAPTER 1

1.0 INTRODUCTION

1.1 COUNTRY PROFILE:

Swaziland is a landlocked country located in the sub-Saharan Africa region. It shares borders with Mozambique and the Republic of South Africa. Swaziland has a population of about 954,000 (2007 Population Census). The country has experienced the "triple threats" of drought, poverty and HIV/AIDS.

A total of 47 percent of the population are subject to food insecurity (VAC 2006), with their vulnerability closely related to poverty and high HIV and AIDS prevalence. The HIV prevalence rate is estimated to be about 39 percent among pregnant women attending antenatal care centres (10th HIV Sentinel Surveillance among pregnant women) and 33 percent among adults at large. The high level of HIV/AIDS infection has increased the crude death rate from 11 per 1000 people in 1997 to 20 per 1000 in 2003, with projections pointing to over 30 deaths per 1000 by 2010. The life expectancy at birth of 32.5 years is the lowest in the world. Households often lose one or more adults, the key producers and managers of livelihood assets, increasingly leaving children or the elderly to support extended families. Eventually, households disintegrate as a result of deaths of parents leading to the unprecedented phenomenon of high numbers of orphaned children. (UNAIDS 2004).

However, Swaziland has successfully developed Food and Nutrition Policy from which various guidelines are being developed to respond to respond to gaps emanating from nutrition and HIV and AIDS related issues.

HIV AND AIDS SITUATION

Swaziland has been enormously affected by the HIV and AIDS pandemic. The prevalence rate among antenatal clients, as measured by the bi-annual sentinel surveillance survey, has rapidly risen from 3.9% in 1992 to 42.6% in 2004 and reported to be 39.2% in 2006. This places it among the worst affected countries in the world.

As the epidemic matures, the impact is becoming visible through an increasing number of patients suffering from AIDS opportunistic infections, an increase in mortality rates and a rapidly growing population of orphans and vulnerable children. It is estimated that the number of orphans, which was about 32 000 in 2001, will increase to over 120 000 (approximately 15% of population) by 2010 (Stanecki 2001, Swaziland HIV and AIDS Modelling Mission Report).

HIV and AIDS have contributed to poverty and has reduced the number of productive members of society in the 15-45 age groups. HIV and AIDS has also increased the disease burden and increased pressure on the health care system. The cumulative number of people who are living with HIV infection and enrolled in the pre-Anti-retroviral therapy programme (pre-ART) is 29 121. 19 200 people are currently receiving antiretroviral therapy. Of these, 16 915 are receiving nutritional support from health care facilities. (MOHSW M&E Database)

NUTRITIONAL STATUS

The common nutritional problems in Swaziland are Energy Malnutrition (EM) and micro-nutrient deficiencies. EM presents as stunting, wasting, underweight and low birth weight., while micronutrient deficiencies include vitamin A deficiency, iron deficiency anaemia and iodine deficiency disorders. Prevalence of stunting is increasing over the years, and can be linked to poverty and the HIV and AIDS situation. Women are mainly affected by nutrition problems of overweight to obese status.

Within the UNICEF conceptual framework it is clear that nutritional status is due to immediate causes that include inadequate dietary intake and disease while the underlying causes are mainly due to insufficient food intake, inadequate maternal health and child care practices, poor infant feeding practices and poor water and sanitation and inadequate health care services. In urban and peri-urban areas obesity is becoming a common form of malnutrition amongst children.

PROTEIN ENERGY MALNUTRITION (PEM)

Chronic Malnutrition that is stunting or linear growth retardation has shown a relative increase from MICS (30%) to VAC 2007 (38.7%). According to the country regions chronic malnutrition classification inline with WHO standards of malnutrition are considered to be "Serious" to "Critical" high by the WHO thresholds.

Acute malnutrition has remained relatively low in the country though it has doubled from 1% (MICS 2000) to 2% (DHS 2007) while underweight current figures are 7.5% according to VAC 2007-09-05

MICRO-NUTRIENT DEFICIENCIES

The country currently does not have the latest information on micro-nutrient deficiencies. Most of the documented research on micro-nutrients was done between 1995 and 1997. Iron deficiency had an extremely high prevalence of 40% (The Anthropometric, Vitamin A and Iron Status of Children 6-71 months of age, 1995)

Vitamin A Deficiency is a serious public health concern in country especially due to inadequate consumption of balanced nutritious diet by most of the population groups. An anthropometric, Vitamin A and Iron Status Survey, 1995 showed that 7% of the children aged 6-71 months are Vitamin A deficient. The prevalence is likely to be higher currently

due to high HIV and TB co-infection.

1.2 GOAL

Goal of the guidelines is to contribute to improvement of the quality of life of the PLWHA.

1.3 RATIONALE FOR THE GUIDELINES

Nutrition is considered as a very important part in the treatment and care of HIV and AIDS. To fulfil the mandate of Swaziland Government, nutrition guidelines are needed to give information on the nutritional needs and support for people living with HIV and AIDS.

1.4 PURPOSE OF THE GUIDELINES

The guidelines give general approach in dealing with different types of nutritional issues related to HIV and AIDS in Swaziland. Service providers will need to apply the recommendations according to given situations or to the needs of the individual client to whom the services are being offered. The guidelines can be used to:

- Create messages that promote good nutrition for all, especially people living with HIV and AIDS.
- Develop more detailed and specific operational guidelines and materials to communicate to all target groups.
- Provide nutritional and dietary education and counselling to people living with or affected by HIV and AIDS
- Design monitoring and evaluation systems for Nutrition and HIV & AIDS programs and interventions

1.5 TARGET AND USAGE OF THE GUIDELINES

The guidelines give useful and practical information for those that give care and support to PLWHA. Some of these are the health care providers, nutritionists, social welfare development workers, interest groups, FBOs, CBOs, politicians, NGOs, extension workers, tertiary

institutions, teachers, the infected and affected individuals and /or families etc. They are well intended for the practical application for nutritional management of HIV and AIDS. This guideline will be implemented in consideration of other guidelines such as PMTCT, Infant and young child guidelines, HIV and AIDS guidelines, ART guidelines, Code of Marketing of breast milk substitutes guidelines, Health Bill guideline, etc.

CHAPTER 2

2.0 NUTRITION AND HIV and AIDS

2.1 NUTRITION

Nutrition is the process of taking and using food in the body. Food has the different nutrients that the body needs for:

- Development, growth, maintenance, replacement and repair of cells
- Protection against diseases and recovery from disease
- Production of energy, warmth, movement and work
- Carrying out chemical process such as digestion and metabolism

The nutrients that the body needs to function include carbohydrates, proteins, fats, vitamin, minerals and water. Some of these nutrients such as carbohydrates, proteins and fats are needed in large amounts and are called macronutrients while nutrients such as vitamins and minerals are needed in small amounts and are called micronutrients. Both macro and micronutrients are essential and are required in the right amount and combinations for the body to function properly.

2.1.2 BALANCED DIET

A balanced diet is one that has a variety of foods and all the nutrients in the right amount and combination daily to meet the body's functional needs. No single food, except breast milk for the first 6 months of life, gives all the nutrients that the body needs to function well. Eating a variety of foods is a key factor to good health for everyone, especially for people with special needs, such as infant and young children, adolescents, pregnant and lactating women, elderly and sick.

Good nutrition is when one has a variety of safe and right foods in the right quantities to meet the body's needs whilst Malnutrition defines a

state when the body does not have enough of the required nutrients or has excess of required nutrients. In Swaziland under nutrition is widespread and often thought of as the same as malnutrition.

2.2 HIV AND AIDS

HIV infection is more complicated than other infections because the virus attacks and destroys the cells of the immune system, which later affect other body organs. These infections affect the nutritional status by reducing dietary intake, nutrient absorption while increasing the utilization and excretion of nutrients, leading to Malnutrition. This usually contributes to the weight loss and the wasting syndrome, mostly noted in adult AIDS patients.

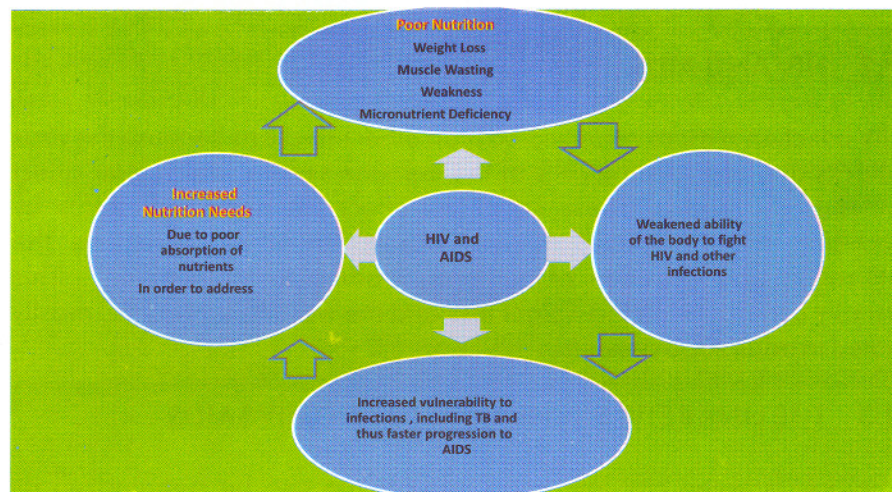
2.3 THE LINK BETWEEN NUTRITION AND HIV&AIDS

The link between HIV infection and nutrition can be summarized as follows;

- o HIV infection increases nutrient requirements and at the same time impairs nutrient intake and absorption
- o HIV and AIDS increases the risk of malnutrition through altered food intake and decreased absorption of nutrients
- o Poor nutrition increases the risk of opportunistic infections the progression of HIV to AIDS

Poor nutrition and HIV together create a vicious cycle that additively weakens the immune system

Figure 1: The Cycle of Malnutrition and Infection in the context of HIV and AIDS



The effect of HIV on the body's nutritional status begins early in the course of the HIV infection, even before symptoms are seen. Good nutrition has the greatest impact at the early stages of the disease because it strengthens the immune system to fight opportunistic infections and delays the progression of the disease. Good nutrition can play an important role in the care and management of HIV and AIDS

2.4 NUTRITIONAL REQUIREMENTS FOR ADULTS LIVING WITH HIV AND AIDS

Nutritional needs for PLWHA are influenced by several factors that include HIV infection itself, opportunistic infections and changes in the body's metabolism. PLWHA therefore, need a diet that provides all the essential nutrients (carbohydrates, protein, fat, minerals and vitamins) to meet the increased nutritional needs.

ENERGY NEEDS.

- o Resting energy expenditure is increased by around 10% in asymptomatic HIV- infected adults.
- o An additional 20-50% increase in energy needs occurs during the convalescent catch-up period after a severe infection in both adults.

PROTEIN NEEDS

- o There is no evidence for increased protein requirements over and above that required in a balanced diet.
- o There are, however, other factors that increase protein needs. Some of these are illness, surgery, infection, trauma, and pressure ulcers. It is, therefore, important to consider pre-existing or concurrent protein deficiencies.
- o If energy intake is insufficient, protein will be used to provide the body with energy. This means that there will be less protein available for maintaining muscle tissue and strengthening the immune system. It is, therefore, important to have adequate energy intake at all times, especially during infections. In this way, protein may be used for building or maintaining lean muscle and strengthening the immune system.

FAT NEEDS

- o World Health Organisation (WHO) does not recommend increased fat intake over what is recommended for a healthy non-HIV infected individual.
- o The recommended intake for fat for a healthy adult is 30-35% of the total energy needs.
- o Dietary fat is a good source of essential fatty acids, vitamins and concentrated energy. Fat can be used to help meet increasing energy needs if the patient does not have fat malabsorption or diarrhoea.

However, the WHO Technical Advisory Group on nutrition and HIV/AIDS, recognised that individualized advice regarding fat intake might be required in individuals on anti-retroviral therapy and among those with persistent diarrhoea.

Table 1: Energy and Protein Requirements for Asymptomatic and Symptomatic Adults

Group of People	HIV Negative	HIV Positive		Protein
	Energy Kcal p/day	Asymptomatic Kcal p/day	Symptomatic	
Average male	2430	2670	2910 - 23160	57
Average female	2170	2400	2600 - 2800	48

MICRONUTRIENTS

- o Many vitamins and minerals are important for the HIV- infected individual due to their role in immune system function. Micronutrient deficiencies of Vitamins A, C, and E, B6, B12, folate and minerals such as zinc, iron and selenium are common among HIV infected individuals. Correcting these deficiencies when they exist may help to slow down disease progression.
- o Current evidence is inconclusive about the effects of micronutrient supplementation on transmission and progression of HIV infection. WHO therefore does not recommend additional intake of micronutrients above and over the recommended dietary allowance (RDA). The recommendation is not to exceed two times the RDA.

2.5 NUTRITIONAL NEEDS FOR PREGNANT AND LACTATING WOMEN

- o The standard recommendation for giving nutrition support to pregnant and lactating women needs to be followed, irrespective of HIV status.
- o Good maternal nutrition during pregnancy and lactation is of vital

importance for the survival and wellbeing of the developing infant and may also affect HIV transmission to the infant.

- o An HIV-positive mother who is well nourished in both macro and micro-nutrients is likely to have improved health and immune function as determined by CD4 cell count and viral load.
- o During pregnancy and lactation, nutritional needs are increased to meet the demands for enough gestational weight gain, growth, development of the foetus and milk production.
- o HIV infection further increases the nutritional needs of infected pregnant and lactating women.
- o In order to maintain good health, the HIV infected pregnant or lactating women needs additional food to meet the extra energy demands (Refer to annex 6)

ENERGY

- o The current recommended increase in energy intake for HIV infected pregnant and lactating women is the same as for non-pregnant, non lactating HIV infected women.
- o Symptomatic women require 20 to 30% more energy due to HIV.

PROTEIN

- o There is no current recommendation for HIV infected pregnant or lactating women to increase protein intake as a result of HIV infection. The recommended protein needs for a HIV negative healthy pregnant or lactating woman should be followed.

MICRONUTRIENTS:

- o Pregnant women are vulnerable to iron deficiency. Anaemia during pregnancy is a risk factor for infant and maternal morbidity and mortality; because anaemia is so prevalent in Swaziland, iron and folic acid supplementation are recommended for all women during pregnancy and lactation irrespective of their HIV status. Amounts above routine prenatal doses are not recommended.
- o It is beneficial to provide a daily multivitamin supplement to HIV infected women as part of their care.

- o Any other nutrient, apart from iron, should be provided based on individual assessment.

2.6 NUTRITIONAL ACTIONS FOR CARE AND SUPPORT FOR HIV POSITIVE PREGNANT OR LACTATING WOMEN

- o Nutritional care for HIV positive women should be started as early as possible before and during pregnancy to minimize the impact of HIV on the women's nutritional status.
- o Improved nutrition for HIV infected women during pregnancy, prevention and treatment of parasitic infections such as malaria and worm infestation is also important to enhance adequate gestational weight gain.
- o HIV positive pregnant or lactating women should be:
 1. Monitored from time to time for their weight gain during pregnancy. If the weight gain is below the recommended range (9-12kg at end of pregnancy), nutrition assessment should be carried out as this may indicate a possible problem, e.g. an opportunistic infection, inappropriate energy intake and or food insecurity. Nutrition assessments should be individualized and interventions based on the assessment (Refer to annex 4)
 2. Encouraged to eat a balanced diet and consume foods rich in energy, and get additional rest, particularly in the third trimester of pregnancy.
 3. Counselling on cultural foods, traditional therapies and practices that are beneficial during pregnancy and lactation.
 4. Advised on the management and appropriate interventions of diarrhoea, nausea, vomiting, malabsorption, loss of appetite, and oral thrush as these conditions may prevent weight gain, as well as have a profound impact on nutritional status.
 5. Counselling on food to avoid foods with little nutritional value, as well as cultural foods, traditional therapies and practices that are harmful during pregnancy and lactation.
 6. Advised and supported to practice food safety and hygiene in

order to avoid food borne illnesses.

7. Provided with iron and folic acid at prenatally and vitamin A during lactation according to national guidelines. The use of iodated salt to prevent iodine deficiency disorders should be discussed as well.
8. Advised to promptly get treatment for malaria, including presumptive treatment and prevention by using insecticide treated mosquito nets, where available.
9. Advised on hookworm infestations and de-worming measures.
10. Mothers who are breastfeeding have extra energy and nutrient needs. Families and communities should be sensitised on the importance of good feeding practices for lactating women.

In order for the PLHWA to meet their increased energy needs, they need to be encouraged to:

- ✓ Eat a (mixed) balanced diet and composed of a variety of food types
- ✓ Choose foods according to availability and their own preference
- ✓ Use local and indigenous foods
- ✓ Make starches the bases of your meals
- ✓ Eat a variety of proteins with every meal
- ✓ Eat a wide variety of fruits and vegetables everyday
- ✓ Use fats and oils as well as sugary foods in small amounts
- ✓ Drink plenty of safe water at least 8 glasses a day
- ✓ Eat more frequently throughout the day, by having small, frequent meals

Locally available and / or indigenous foods can provide a healthy diet for the PLHWA. These foods are often easy to prepare and provide a number of essential nutrients. Locally available and indigenous foods are generally wholesome, affordable, accessible, unrefined or less processed and often have a lot of nutrients. Such foods should be part of the balanced diet.

3.0 NUTRITION CARE FOR INFANTS AND CHILDREN

The period from birth to two years of age is the "critical window" of opportunity for children. This is the period for promotion of optimal growth, health and the development of sound behaviour in children. Adequate nutrition during infancy and childhood is fundamental for the development of children's full human potential. The immediate consequences of poor nutrition during these formative years include frequent illnesses, low intelligence in school and physical development. In the long term, early nutrition deficiencies are associated with lower school performance, capacity to perform at work and poor reproductive outcomes.

The overall health and nutrition is also affected during the child's adolescence and adulthood. A malnourished child may grow into a malnourished girl when she grows up and she may then stand a higher risk of giving birth to a child who is also malnourished and low weight at birth leading to failure to thrive. Poor infant and young child nutrition in infancy and childhood, coupled with high rates of infection are the main underlying causes of malnutrition during the first two years of life.



3.1 FEEDING OF INFANTS

If there is no intervention to prevent mother-to-child transmission of HIV, 24-45% of HIV infected women will pass on the virus to the child. About 10-25% of these will be through breastfeeding, but mostly mixed feeding. Exclusive breastfeeding if practiced for six months carries only 4% risk. It is, therefore, important to ensure that all mothers know their HIV status. If a mother is HIV positive she should be provided with the correct information and be counselled according to her personal and home conditions, for her to make an informed decision on the most appropriate feeding option for her child, in order to reduce the risk of mother-to-child transmission of HIV.

For all mothers, regardless of HIV status Swaziland recommends exclusive breastfeeding for 6 months and continued breastfeeding with appropriate and timely complementary feeding from locally available foods up to two years and beyond, for the general population of mothers. Those mothers who know their HIV status will be informed and counselled on alternative recommended feeding options based on the current WHO criteria of AFASS, bearing in mind that exclusive breastfeeding far supersedes other options by its benefits as indicated in the box below.

ADVANTAGES OF BREASTFEEDING

- ✓ Breast milk contains all the nutrients (, including energy, proteins, micro-nutrients and water) a baby needs during the first six months.
- ✓ Breast milk provides antibodies that are not available in any other option.
- ✓ Breast milk is easy to provide to the child, and less costly and easily digestible.
- ✓ It gives emotional benefits to the mother and baby.
- ✓ It has contraceptive benefits (Lactational Amenorrhoea Method,

LAM) and reduces the risk of breast and ovarian cancer for the mother.

- ✓ Breast milk is always available, while substitutes may not be.
- ✓ Breast milk is culturally acceptable.
- ✓ Exclusive breastfeeding in HIV positive mothers has very little risk of HIV transmission; only 4% if antiretroviral drugs are used by the mother and baby in addition to counselling and safe exclusive breastfeeding and the mother receives follow up.

DISADVANTAGES OF ARTIFICIAL FEEDING

- ✓ Artificial feeding do not have anti-infective factors and therefore have up to 6 times risk of mortality
- ✓ Artificial feeding have higher risks of diarrhoea and other gastrointestinal infections
- ✓ Artificial feeding increases the risk of acute respiratory diseases
- ✓ Artificial feeding has increased risk of otitis media and ear infection
- ✓ Artificial feeding has increased risk of asthma and allergies
- ✓ Artificial feeding poses the risk of contracting meningitis from contaminated powdered infant formula by a bacteria known as "Enterobacter sakazakii" that has 30% fatality rate.
- ✓ Artificial feeding has a long term effect of increased risk of obesity, diabetes and other chronic diseases in adulthood
- ✓ Artificial feeding have reduced cognitive development.

DETERMINING THE RISKS OF EXCLUSIVE BREASTFEEDING AND REPLACEMENT FEEDING

- ✓ HIV can be passed to the infant through breast milk.

Note: that only 4 % of children are likely to get the virus if the mother is using ART and exclusive breastfeeding compared to 60% of the children

or more that might die due to diarrhoea, malnutrition and other infection from replacement feeding.

- ✓ Exclusive Replacement Feeding eliminates the risk of transmission of HIV from the mother to the child but carries the higher risk of the child dying from other infections. It can only be recommended only when the MOTHER MEETS ALL THE CRITERIAS OF AFASS
- ✓ Mixed feeding, or giving breast-milk and other foods to children less than 6 months is not recommended as it increases the risk of HIV transmission through breastfeeding. Exclusively breastfed babies have a lower risk of becoming infected compared to those who are given other liquids, foods or milks in addition to breast-milk during the first six months of life.

"Note: PCR test result is not an indication of breastfeeding cessation, therefore the mother is strongly encouraged to continue breastfeeding if she had opted for it from delivery.

3.2.1 PREGNANT AND LACTATING WOMEN, WHO HAVE TESTED HIV NEGATIVE, SHALL:

- Be counselled to breastfeed exclusively for six months, followed by timely, safe, appropriate and locally available, nutritionally adequate complementary foods, with continued breastfeeding for two years and beyond.
- Be supported with exclusive breastfeeding skills and breastfeeding management.
- Be counselled on the importance of introducing locally available and nutritious solid foods immediately the infant reaches six months, without delay, showing them how to prepare suitable complementary foods.
- Be counselled on safer sex and encouraged to discuss their HIV

status with their partner and children to instill the culture of openness and dispel stigma.

- Be counselled on importance of good nutrition including vitamin supplementation, green leafy vegetables, importance of iron/folate supplements and adequate rest.

3.2.2 PREGNANT AND LACTATING WOMEN

WHO DO NOT KNOW THEIR HIV STATUS SHALL:

- Be informed about HIV/AIDS infection and be counselled on primary prevention measures.
- Be counselled on the importance of testing and knowing their HIV status for their benefit and that of their unborn baby and their partner.
- If they do not know their HIV status, be offered counseling and testing, including counseling on infant and young child feeding choices based on the results of testing.
- If they do not know their status, be encouraged to exclusively breastfeed their babies for the first six months, followed by timely, safe, appropriate and locally available, nutritionally adequate complementary foods, with continued breastfeeding for two years and beyond.
- Be encouraged to discuss HIV testing with her partner and practice safe sex at all times to reduce the risk of becoming infected with HIV while pregnant or breastfeeding.
- Be counselled on adequate maternal nutrition, including vitamin supplementation, green leafy vegetables, importance of iron/folate supplements and adequate.

3.2.3 PREGNANT AND LACTATING WOMEN

WHO HAVE TESTED HIV POSITIVE SHALL:

- Be provided with correct information on appropriate feeding for their children using the AFASS CRITERIA
- Be counseled and given extra support with exclusive breastfeeding for six months.

- Be taught on how to avoid breast problems by being shown early initiation, good positioning and attachment, demand feeding, expression of milk while away from the baby to maintain lactation and how to recognize signs of potential breast problems.
- Be urged to avoid mixed feeding, not even water in the first six months.
- Be counselled to observe the child's mouth and tongue and immediately go for treatment if she observes any signs of oral sores to avoid infection.
- Be counselled on positive prevention, to avoid re-infection and opportunistic infections during pregnancy and breast-feeding.
- At six months, if replacement feeding is still not acceptable, feasible, affordable, sustainable and safe (AFASS criteria) continuation of breastfeeding with additional complementary foods is recommended, while the mother and baby continue to be regularly assessed. All breastfeeding should stop once a nutritionally adequate and safe diet without breast milk can be provided. The WHO/UNICEF recommends that transition from exclusive breastfeeding to replacement feeding is better done gradually rather than abruptly as this can traumatize the child and lead to breast problems in the mother.
- During this transition period cup-feeding is strongly recommended because it is safer and easier than bottle feeding.
- Be regularly assessed for ART eligibility and managed accordingly.

3.2.3.1. THE HIV INFECTED MOTHER, WHO AFTER HAVING MET THE AFASS CRITERIA AND BEEN COUNSELLED, CHOOSES TO USE REPLACEMENT FEEDING SHALL:

Information Box 4: Individually be taught, including other caregiver), safe preparation, storage, cleaning of utensils, and be advised on the use of cups instead of feeding bottles that are more difficult to clean.

- Be supported to use artificial replacement feed safely, making reference all the time to the AFASS criteria (refer to AFASS guidelines)
- Be encouraged to cup feed, as this is the best method of feeding, as this is a safer method of feeding than bottle feeding.
- Be encouraged to hold the infant close when feeding them because non-breastfed infants lack the close mother-baby bonding afforded by breastfeeding.
- Be counselled on use of modern family planning methods recommended for non-breastfeeding women to avoid unplanned pregnancy.
- Be offered advice on good nutrition according to prevailing circumstances, including vitamin supplementation, green leafy vegetables, importance of iron/folate supplements and adequate.

After six months artificial milk continues to be an important part of the child's diet, so this must be continued together with complementary foods made from appropriately prepared and locally available family foods, given at least three times per day in the beginning and increased as per the child's demands .

AFASS: Acceptable, Feasible, Affordable, Sustainable and Safe

Acceptable- the mother perceives no barrier to replacement feeding. Barriers may have cultural or social reasons, or be due to fear of stigma or discrimination. According to this concept the mother is under no social or cultural pressure not to use replacement feeding, and she is supported by family and community in opting for replacement feeding.

Feasible- the mother (or family) has adequate time, knowledge, and skills for preparation of the replacement food and feed the infant up to 12 times in 24 hours. According to this concept the mother can read and understand the instructions for preparing

infant formula or other artificial food, and with support of the family can prepare enough feeds correctly every day, and at night, despite disruptions to preparation of family food or other work.

Affordable- The mother and family with the support of community and health care systems support if necessary, can pay the cost of purchasing/ producing, preparing it, including ingredients, fuel, water, detergents, equipment, without compromising the health and nutrition of the family. This concept also includes the cost of extra medical costs that may be necessary for diarrhoea and related care.

Sustainable- Availability of a continuous uninterrupted supply and dependable system of distribution for all ingredients and products needed for safe replacement feeding, for as long as the infant needs it, up to one year of age or longer. According to this concept, there is little risk that infant formula or any replacement feeding chosen will ever be unavailable or inaccessible, ad another person is available to feed the baby in the mother's absence, and can prepare and give replacement feed.

Safe- replacement foods are hygienically prepared, and stored and fed in nutritional adequate quantities, with clean hands and using clean utensils, preferably by cup. This concept presupposes that the mother or caregiver:

- has access to reliable safe water (from a piped or protected water source)
- prepares replacement feeds that are nutritionally sound and free from Pathogens
- Is able to wash hands thoroughly with soap and to regularly boil the utensils to sterilize them
- Can boil water for preparing each of the baby's feeds
- Can store unprepared feeds in clean covered containers and protect them from rodents, insects and other animals.

Note: For a mother to be recommended to give replacement infant formula she is supposed to meet all components of the AFASS criteria.

3.3 NUTRITIONAL INTERVENTION FOR INFECTED CHILDREN

HIV infection in children affects their nutritional status just as it does in adults. Stunted growth and failure to thrive are common among HIV infected children. They also have an increased frequency of common childhood infections such as diarrhoea, ear infections, pneumonia, chronic gastroenteritis and TB, all of which can affect nutrient intake leading to malnutrition, which puts them at risk for mortality.

Poor appetite, inability to suck, swallowing difficulties, nausea, frequent infections with fever all increase the risk of malnutrition in the HIV infected child. It is important to ensure that the child consumes adequate amounts of macro and micronutrients to meet the increased metabolic demands and the demands for growth and development. With appropriate management, positive children can improve their nutritional status. Nutrition care of the HIV positive child should however be part of a comprehensive programme. The following interventions are suggested.

1. All children born to HIV infected mothers or suffering from AIDS should be periodically assessed for nutritional problems. This is important to help improve nutritional status and prevent further complications. Severe growth failure among HIV positive children is associated with reduced survival. Early monitoring and nutrition intervention is critical as growth may be impaired prior to the presence of symptomatic diseases. As soon as growth becomes sub-optimal nutritional interventions should start. In addition, every child should be screened for feeding problems and signs of malnutrition as part of an overall integrated assessment for illness and nutrition.
2. All HIV positive children should be supported to ensure

adequate energy and nutrient intake.

Energy needs in children vary depending on the type and duration of the HIV related infections such as weight loss with acute infection. An increase of 10% energy in asymptomatic HIV infected children to help maintain growth is recommended. Similar to adult recommendation, energy intake needs to be increased by 50%-100% over normal needs in children experiencing weight loss. (WHO Technical Advisory Group on Nutrition and HIV/AIDS, 2003)

In general, WHO recommends a protein intake equal to normal needs for a non HIV child of same sex and age. However, there is some consensus that some increase is warranted especially when the child is symptomatic e.g has fever.

Micronutrient intake is also recommended at the same level of a child not infected with HIV. Children should have the biannual supplementation with vitamin A. Zinc supplementation is recommended for children with diarrhoea.

3.4 NUTRITION INTERVENTION FOR INFANTS 0-6 MONTHS IN THE CONTEXT OF HIV:

- All mothers should be encouraged to exclusively breastfeed for 6 months and those who are HIV positive should be counselled and educated on the appropriate infant feeding options and supported to either exclusively breast feed or exclusively replacement feed.(based on the AFASS criteria)
- Mothers who opt to breast feed their infants should exclusively breastfeed their children for 6 months without giving any food even water.

3.5 NUTRITION INTERVENTION FOR CHILDREN WHO ARE 6-24 MONTHS:

The child's diet should be reviewed at every well and or/ every sick-baby clinic visit to ensure appropriate feeding and adequate nutrient intake. This helps to recognize any early growth faltering and other nutritional problems and initiate interventions. Conditions that are affecting appetite and food intake should be discussed and treated as appropriate. Mothers/caregivers should be advised on how to improve the diet, taking into consideration the child's age, local resources and the family circumstances.

- Mothers/caregivers should be encouraged to continue breastfeeding up to two years and beyond, together with appropriate locally available foods.
- Mothers who are not breastfeeding should be encouraged to give other milk together with solid foods until the baby is at least two years
- Mothers/caregivers should be encouraged to feed the child foods
 - Rich in energy and other nutrients, refer to annex 1, 2
 - Porridge enriched with milk, sugar, pounded groundnuts, bean powder or soya-bean and oil
- For asymptomatic children (with no diarrhoea, nausea or fat malabsorption) a small amount of margarine/oil can be added to their food to increase energy intake.



- Babies will be given mashed fruits and vegetables such as ripe banana, avocados, pumpkin as frequently as possible to increase energy and nutrient intake
- Encourage parents to feed the child small frequent meals with nutritious snacks between main meals such as banana, avocado, mashed pumpkins, boiled sweet potato.
- Mothers/caregivers should be counselled on how to practice active and responsive feeding.
- All mothers/caregivers should be educated and counselled on good hygiene, and on food and water safety.
- De-worming of children should be done every 4-6 months after 1 year of child's life.
- Vitamin A supplementation should be given to the child every 4-6 months from 6 months and beyond as per national recommended dose.
- All secondary infections should be treated quickly. The nutritional effect of these infections should be reduced through maintaining food and fluid intake.
- Severely malnourished children should be managed or referred to a hospital for nutrition rehabilitation. National draft guidelines of the new WHO guidelines for the management of severe malnutrition should be followed
- All HIV infected children should be provided a daily multivitamin supplement, if available, to prevent micronutrient deficiencies.
- HIV infected children should continue with all other child health survival interventions including immunizations (if symptomatic they should be referred to a health facility).

NOTE: Children who are above one year should be encouraged to eat from the family pot but their food should be mashed and should contain animal and dairy products.

3.6 FEEDING CHILDREN ABOVE 24 MONTHS OLD:

- Encourage mother to ensure that children consume adequate food to meet their increased energy needs.
- Develop a plan in consultation with the mother for feeding the child that includes adequate proteins and micronutrients

Support mothers/caretakers to use essential child survival services:

- Ensure that each child has a child health card and the card is used to promote the child growth at each MCH visit.
- Assess the child for complete and up to date immunisation
- Assess whether the child is receiving Vitamin A supplementation and undergoing regular deworming and secondary immunisation doses
- Ensure all the immunizations, Vitamin A supplementation and deworming have been recorded
- Counsel mothers/caretakers about importance of taking their children for monthly growth monitoring.
- Teach the mother about good hygiene, care and emotional support.

3.7 GROWTH MONITORING

- Monthly growth monitoring should be plotted accurately against the ages on the Child Health Card
- Nutritional counselling should be given to all mothers/caretakers irrespective of the growth status of the child at every contact with a health worker
- If growth failure is detected, the mother/caretaker should be advised accordingly. Ask the mother/caretaker if there are any feeding problems or illnesses, and provide suitable intervention
- Moderately malnourished (W/H%, 70-80%) OR According to the Child Growth Chart (W/A) and MUAC children should be referred to a nearest therapeutic feeding center, NCP or Child Supplementary Feeding Programme (CSFP)

Children who are HIV positive and are losing weight need 50-100% additional daily energy compared to an un-infected child of the same sex.

3.8 SEVERELY MALNOURISHED CHILDREN WHO ARE HIV POSITIVE

Severely malnourished with HIV and AIDS are about five times more likely to die than uninfected children. Such children take much longer to recover. Management of Severely Malnourished Children with HIV involves achieving high energy and nutrient intake to realize complete recovery.

It is important to encourage mother/caretakers to take children for growth monitoring and seek health care and support for children who are not growing well so that they are identified early for treatment and special counselling.

Severe Acute Malnutrition

- ✓ Look out for visible severe wasting, especially of the trunk and buttocks.
- ✓ Look out for bilateral oedema
- ✓ Look out for anaemia, pallor of the palms and mucus membranes
- ✓ Check and attend to complications that might lead to death
- ✓ Keep the child warm and monitor the temperature
- ✓ If the child is dehydrated give RESOMAL solution for rehydration
- ✓ Ensure that the child is treated for hypoglycaemia by using 10% sugar solution and giving severe malnutrition recommended feeds (F75 AND F100/Plumpy Nut)
- ✓ Provide broad spectrum antibiotics and Vitamin A to all severely malnourished children
- ✓ Start feeding children with foods that can provide 75Kcal per Kg per day at least within 2 hours of admission
- Counsel mother/caretaker on the need for referral and urgently refer those children with severe malnutrition to the hospital or any

4.0 NUTRITION AND HIV and AIDS THERAPY

Remember: NUTRITIONAL INTERVENTIONS ARE NOT A SUBSTITUTE FOR ANTIRETROVIRAL THERAPY.

There is no cure yet for HIV/AIDS, and antiretroviral drugs (ARVs) remain the cornerstone of the management of HIV /AIDS by lowering viral load and increasing CD 4 cell count and thus reducing morbidity and mortality. Current guidelines recommend the use of ARVs in combinations of three or more drugs. There are different classes of ARVs and these are:

- Non nucleoside reverse transcriptase inhibitors; (NNRTI)
- Nucleoside reverse transcriptase inhibitors (NRTI)
- Protease inhibitors (PI)
- Less commonly, Fusion inhibitors and integrase inhibitors

Though highly effective, ARVs can be responsible for a broad range of toxicities, ranging from low grade intolerances that may be self-limiting to life-threatening side-effects. If not adequately managed, these may lead to poor adherence to medication. Most adverse effects can be managed with advice, reassurance and simple medication. Adequately informing patients of expected side effects will assist them in recognizing and managing problems early.

PLEASE NOTE: DIFFERENTIATING BETWEEN COMPLICATIONS OF HIV DISEASE AND ART SIDE EFFECTS MAY SOMETIMES BE DIFFICULT.

ART and good nutrition can reduce the loss of body mass (including muscle mass) that results from HIV infection.

- It is important to document the use of dietary supplements e.g. herbal therapies, botanical therapies and micro nutrients

supplements, since these can potentially cause food/drug/supplement interactions which in turn affect the efficacy, safety, and / or compliance with ART.

- Some ART side effects limit food intake (nausea and vomiting) or reduce nutrient absorption (diarrhoea) and may lead to poor medication adherence. Management of these side effects can help minimize their effects and improve the client's adherence to the treatment protocol and tolerance to the drugs. In severe cases, patients should be referred for medical intervention. (Refer to table on page 21. Dietary Management of Common Signs and Symptoms)

Effects of medication on nausea and vomiting

Nausea and vomiting due to antiretroviral medication must be actively managed, or adherence to ART will be compromised. Anti-emetics taken half an hour before the antiretroviral dose up to 3 times daily may be helpful

DRUG	FOOD RECOMMENDATIONS	PLEASE NOTE
4.1 NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITORS		
Stavudine (D4T) Or Zidovudine (AZT)	<ul style="list-style-type: none"> • Can be taken without regard to food • Taking with food may reduce side effects 	<ul style="list-style-type: none"> ○ Avoid alcohol
Lamivudine (3TC)	<ul style="list-style-type: none"> • Can be taken without regard to food • Taking with food may reduce side effects 	<ul style="list-style-type: none"> ○ Avoid alcohol
Abacavir (ABC)	<ul style="list-style-type: none"> • Can be taken without regard to food • Taking with food may reduce side effects 	<ul style="list-style-type: none"> • Avoid alcohol
Didanosine (DDI)	<ul style="list-style-type: none"> • MUST BE TAKEN ON AN EMPTY STOMACH • Take 30 minutes before or 2 hrs after eating. • Take with water only , not with juice 	<ul style="list-style-type: none"> ○ Avoid juice ○ Avoid antacids containing aluminium or magnesium

TABLE 4.2: FOOD RECOMMENDATIONS FOR ARVS

NUCLEOTIDE REVERSE TRANSCRIPTASE INHIBITOR		
Tenofovir (TDF)	<ul style="list-style-type: none"> • Take with food. 	
NON NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITORS		
Nevirapine (NVP)	<ul style="list-style-type: none"> • Can be taken without regard to food. 	<ul style="list-style-type: none"> ○ Avoid alcohol
Efavirenz (EFV)	<ul style="list-style-type: none"> • Can be taken without regard to food, but best taken at bedtime on an empty stomach. 	<ul style="list-style-type: none"> • Taking with high fat meals increases blood levels of drug and may increase side effects.

PROTEASE INHIBITORS		
KALETRA or LOPINAVIR or RITONIVIR	<ul style="list-style-type: none"> • Best with high fat meal • Can be taken also without regard to food • However taking with food will mask bad taste and reduce side effects 	<ul style="list-style-type: none"> ○ Avoid alcohol
INDINIVIR (IDV)	<ul style="list-style-type: none"> • Take on an empty stomach one hour before or two hours after a meal • or take with a light non-fat meal • take with water 	<ul style="list-style-type: none"> ○ Drink at least 1,5 L of water or fluids daily to prevent kidney stones ○ Avoid Grapefruit juice ○ Avoid alcohol
SAQUINIVIR (SQV)	<ul style="list-style-type: none"> • take with a meal or a light snack • take within 2 hrs of high fat and high calcium meal 	<ul style="list-style-type: none"> • Avoid alcohol • Avoid Grapefruit juice • Avoid Garlic
NELFINAVIR	<ul style="list-style-type: none"> • take with a meal or a light snack • better with food that contains protein 	<ul style="list-style-type: none"> • Avoid alcohol

- St. John's Wort should be avoided at all times
- PLWHA may also take various types of medications to reduce the effects of HIV on the body and to treat opportunistic infections i.e. TB, upper and lower respiratory tract infections, diarrhoea illnesses and malaria. Some also use herbal remedies and take micronutrient supplements.

4.1 MANAGEMENT OF FOOD AND DRUG INTERACTION

4.1.1 FOOD AND DRUG INTERACTIONS IN HIV AND AIDS

Traditional and modern therapies used to treat opportunistic infections associated with HIV and AIDS can interact with nutrients in food and compromise nutritional status of PLWHA's. Other foods can also interact with drugs to affect efficacy. If the drug and food interactions are not addressed, they can adversely affect the health and nutritional status of individuals, and can lead to faster disease progression.

4.1.2 DIFFERENT TYPES OF DRUG AND FOOD INTERACTIONS

Antiretrovirals, antibiotics, antimalarials, antihelminths, dietary supplements and other drugs can interact negatively with food.

These interactions are primarily:

- ✓ Direct effects of medication on food intake, nutrient absorption and metabolism
- ✓ Side effects of medication on food intake and nutrient absorption
- ✓ Food effects on drug absorption and efficacy

4.2 NUTRITION ACTIONS TO SUPPORT PEOPLE INTERESTED IN HERBAL TREATMENT

KEY Box 8

At present there is no evidence of traditional medicines that can cure or treat HIV and AIDS

NOTE: IN SWAZILAND, PLWHA DO TAKE TRADITIONAL REMEDIES. SERVICE PROVIDERS SHOULD HAVE ACCESS TO INFORMATION ON TRADITIONAL REMEDIES SO THAT THEY CAN ADVISE THEIR CLIENTS ON THE EFFECTS ON THEIR HEALTH.

Service providers who come in contact with people who are interested in traditional remedies should understand and be sensitive to traditional beliefs and the kinds of traditional care available. Traditional remedies represent alternatives to formal general medicine. For many people, this could be the only option they may have. However, some traditional beliefs and food practices may be harmful. It is important to find out more about the local practices and note those that may be harmful and discuss with both PLWHA and the traditional healers why such practices should not be followed. Those traditional practices and therapies that provide readily accessible, effective and low-cost remedies should be identified, encouraged and promoted.

Service providers should be familiar with the various herbs and traditional therapies that PLWHA may be taking or using and advise them of any harmful effects these may have on their health. Refer to annex 7.

PLWHA and their care givers or treatment supporters should be advised to always discuss treatments with a health care worker or nutritionist to avoid any treatment or practice, such as fasting, which cause weight loss. At present there is no evidence of traditional medicines or therapies that can cure or treat HIV and AIDS. However, certain traditional medicine may help to treat many of the symptoms of opportunistic infections that are part of AIDS. While some of these medicines may be undoubtedly helpful, others may be dangerous and unnecessarily expensive.

- ✓ PLWHA can use herbs as long as they are not harmful and do not interact with medication. If used properly herbs and spices have a wide range of benefits, see annex 7

HOWEVER, CAUTION SHOULD BE GIVEN TO PLWHA ABOUT VARIOUS HERBS THAT MAY BE SOLD CLAIMING TO CURE HIV. ALL HERBS AND SPICES SHOULD BE USED IN MODERATION.

CHAPTER 5

5.1 DIETARY MANAGEMENT OF COMMON HIV-RELATED CONDITIONS

There are a number of symptoms that are associated with HIV and AIDS that affect food intake and nutritional status of an individual. Signs and symptoms can range from mild to severe and may be temporary or persistent depending on the type and the extent of infections. They also depend on the physical and mental health of the individual. Health care workers can recommend specific dietary interventions to alleviate some of the most common conditions.

COMMON SIGNS, SYMPTOMS AND THEIR DIETARY MANAGEMENT

Table 3: Next page is a table of the most common symptoms and suggested ways to alleviate them

Condition	SIGNS SYMPTOMS	CAUSES	DIETARY MANAGEMENT
DIARRHOEA	<ul style="list-style-type: none"> Loose watery, frequent stools More than 3 per day Dehydration Weight loss 	<ul style="list-style-type: none"> Bacteria, viral or fungal infections Effects of the HIV itself on the gut Food poisoning Drugs or medications (esp. antibiotics) Poor absorption of and / or intolerance of nutrients e.g. lactose and sugar. 	<ul style="list-style-type: none"> Drink plenty sufficient fluids such as safe water, diluted, unsweetened fresh fruit juices, rice water and thin sorghum porridge. Drink an ORT solution if there is dehydration. Severe dehydration may require dehydration with intravenous fluids. Eat salty foods e.g. soup, or add extra salt to meals. Once diarrhoea stops, follow normal intakes. Eat small, frequent meals. Eat fermented foods like maheu, sour porridge and sour cabbage water. Decrease fatty and fried foods in the diet, instead steam or boil foods. If milk and dairy products cause cramps try using fermented products like yoghurt and emasi Include soluble fibre (pectin) by eating foods like banana, peeled apples and pears, oats, carrots, pumpkin, paw-paw, potatoes. Avoid insoluble fibre like in whole grain foods and beans Avoid caffeine (tea/coffee) and alcohol Avoid sugary foods.

Fat Intolerance	steatorrhea (fat in the stool), stool which is either pale, oily and/or ,foul smelling, frothy and floating .	<ul style="list-style-type: none"> • Malabsorption of fat • Incomplete digestion of fat • Malnutrition 	<ul style="list-style-type: none"> • Include more fruits and vegetables in the diet • Bake, boil, steam or roast food • Trim all visible fat from meat and chicken. Remove skin from chicken before cooking • Squeeze lemon on fatty foods. • Eliminate use of oils, butter, margarine, mayonnaise and cream • Avoid deep fried and greasy foods • Eat smaller, more frequent meals spaced out evenly throughout the day. • Take a daily multivitamin, if available
Taste Changes	<ul style="list-style-type: none"> • Food does not taste normal or pleasant • Metallic taste • Food tasting too sweet or too salty 	<ul style="list-style-type: none"> • Stress • Side effects of medications • Common cold • Flu • Malaria 	<ul style="list-style-type: none"> • Add a variety of seasonings especially herbs to food to give more flavour. • Try different textures and varieties of food • Try rinsing out the mouth after meals. • Use lemon, raw tomatoes or tonic water to stimulate taste buds. • Chew food well and move around mouth to stimulate taste buds.

NAUSEA AND VOMITING	<ul style="list-style-type: none"> • Loss of appetite, • Urge to vomit, • Dehydration. Weight loss 	<ul style="list-style-type: none"> • Side effect of medications • Infections • Food with strong aromas • Food intolerances 	<ul style="list-style-type: none"> • Take small, frequent meals. • Avoid having an empty stomach which makes the nausea worse • Eat cool or cold meals are better tolerated than hot. • Take diluted and unsweetened fruit juice, especially lemon • Try dry, salty, and bland foods such as dry bread or toast or other plain dry foods and boiled foods • Do not lie down immediately after eating; wait 1-2 hours if possible. • Avoid greasy or fried foods • Avoid taking fluids with meals rather take them between meals • Avoid coffee and alcohol • Suck on a lemon, the sour taste can help to reduce nausea or squeeze lemon into the water you are drinking. • Avoid foods with strong or unpleasant smell. • If vomiting, drink plenty of fluids to replace lost fluids and prevent dehydration
Fatigue (lethargy)	<ul style="list-style-type: none"> • Poor performance, loss of concentration , general malaise. 	<ul style="list-style-type: none"> • Illness • Stress • Depression • Hunger 	<ul style="list-style-type: none"> • Have someone else to prepare food for the patient. This will help the patient conserve energy • Eat smaller more frequent meals and snacks throughout the day • Eat foods that are easy to prepare and easy to chew. • Drink high protein, high energy liquids e.g. High Energy Milk (egg flip), maheu, etc. • Try to eat at the same time each day. • Exercise as able

Muscle wasting	<ul style="list-style-type: none"> • Loss of body fat, subcutaneous • Weight loss 	<ul style="list-style-type: none"> • Infections • Poor quality and/or inadequate diet 	<ul style="list-style-type: none"> • Eat balanced meals regularly and include a source of protein with each meal. • Eat high protein snacks between meals e.g. roasted peanuts, boiled eggs, avocado pear. • Exercise regularly. • Increase nutrient density of foods without visibly increasing the volume of the meal by adding peanut butter, skimmed milk powder, or eggs in soups or porridge. • Use and or add fat, oil, peanut butter, peanut powder, <i>ludvonca</i>, (sesame) to food and in cooking if tolerated.
Fever	<ul style="list-style-type: none"> • High temperatures , Fast breathing, • Dry mouth, • Looking ill, • Feeling lethargic. 	<ul style="list-style-type: none"> • Infection 	<ul style="list-style-type: none"> • Eat high energy, high protein meals • Drink plenty of fluids e.g milk, soups, sour milk, maheu, etc • Add snacks between meals • Eat small frequent meals as tolerated

Heartburn/ Bloating	<ul style="list-style-type: none"> • Feeling of fullness, Abdominal discomfort or pain after eating 	<ul style="list-style-type: none"> • Indigestion • Antibiotics • Some anti-inflammatory drugs • Some gas forming or cold foods • Constipation • Very fatty foods 	<ul style="list-style-type: none"> • Eat small frequent meals. • Eat slowly and try not to talk while chewing. • Drink fluids an hour before or after a meal. • Avoid lying down immediately after eating wait 1-2 hours if possible. • Eat long before you plan to go to sleep. • Exercise • Avoid gas-forming foods that are associated with cramping and bloating such as beans, cabbage, eggplant, onions, green peppers. • Avoid carbonated drinks • Avoid greasy, deep-fried, and/or spicy foods.
Oral Candidiasis/ oral thrush	<ul style="list-style-type: none"> • Candida manifests as white patches in the mouth and/or throat. Difficulty in chewing and swallowing. • Pain in chewing and swallowing • NB: Candida can also affect the vagina 	<ul style="list-style-type: none"> • Infection • Weakened immune system • Antibiotic therapy 	<ul style="list-style-type: none"> • Eat soft, pureed, or moist foods such as scrambled eggs, custard, mashed potatoes, mashed carrots, pureed pumpkin, paw-paws, or porridge. • Eat fermented food like maheu, sour milk, yoghurt that help to relieve oral thrush. • Suck a lump of ice or have an ice drink before a meal. • Practice good oral hygiene. Rinse mouth daily with 1 teaspoon baking soda mixed in a glass (250ml) of warm water to prevent thrush. Do not swallow the mixture. • Drink liquids with a straw to ease swallowing. • Avoid sticky or dry foods such as peanut butter, honey.

			<ul style="list-style-type: none"> • Avoid sweet or sugary food and drinks • Avoid hot foods; eat foods at room temperature cold food can be soothing. • Avoid acidic food e.g. citrus fruit, vinegar and spicy and very salty foods. • Avoid alcohol
Mouth and Throat Sores	<ul style="list-style-type: none"> • Red patches on the inside of the mouth and lips. • Visible sores • Pain when eating 	<ul style="list-style-type: none"> • Weakened immune system • Infection 	<ul style="list-style-type: none"> • Avoid sweet or sugary food and drinks • Avoid hot foods; eat foods at room temperature cold food can be soothing. • Avoid acidic food e.g. citrus fruit, vinegar and hot spicy and very salty foods. • Avoid alcohol, in particular spirits. • Rinse with salty warm water; use clean boiled water. • Clean mouth frequently, at least twice a day, preferably after every meal. • Use cinnamon tea as a mouthwash. • Eat soft foods such as mashed foods, soups and juices. • Use a straw to drink liquids to ease swallowing. • Avoid rough foods such as toast or raw vegetables. • Avoid sticky foods e.g. peanut butter • Use fermented products such as yoghurt • Drink nourishing liquids e.g. beef broth, lentil or pea soup.
Reflux Disease and Gastritis (silembe)	<ul style="list-style-type: none"> • epigastric discomfort (silembe) • Nausea • Burning abdominal pain 	<ul style="list-style-type: none"> • Stress • Drugs • Hyper-acidity 	<ul style="list-style-type: none"> • Avoid hot spicy foods • Drink milk • Eat banana • Avoid alcohol • Boil, steam food

Common cold, flu and mild coughs	<ul style="list-style-type: none"> • Sneezing, • Coughing, • Runny or blocked nose, • Sore throat. • External mouth sores (tilondza temkhuhlane) • fever • chills, • Joint pains, headache. 	<ul style="list-style-type: none"> • Infection • Allergies • Tuberculosis 	<ul style="list-style-type: none"> • Take high protein, high energy fluids e.g. maheu, milk and egg flip. • Eat smaller more frequent meals • Eat fruit and/or drink fruit juices. • Cut an onion into small pieces and keep it by the bedside. The onions stimulate secretions and will keep the airway moist thus soothing them. • Sprinkle sugar onto an onion that has been cut into pieces and let it soak in to make syrup. Drink it slowly. This helps to soothe the throat. • Drink ginger and cinnamon tea or make hot ginger compresses for the chest. • Avoid very cold foods and drinks.
Loss of appetite	No desire to eat food. Weight loss, Malnutrition	<ul style="list-style-type: none"> • Chronic infection • Side effects of medications • Malnutrition • Monotonous meals • Stress, anxiety and depression • Unpleasant strong smell and odours 	<ul style="list-style-type: none"> • Eat small frequent meals, throughout the day • Eat nutritious snacks between meals. • Take walks before meals where possible, the fresh air helps to stimulate appetite • Avoid smoking. It reduces appetite. • Avoid preparing meals or staying in the kitchen while food is being prepared. The smell can bring on a sense of satiety. Have family of friends assist with food preparation

Anaemia	<ul style="list-style-type: none"> • Feeling tired and weak • Paleness in the eyes, tongue, palms and nail beds. • Dizziness • Headaches 	<ul style="list-style-type: none"> • Lack of iron in diet • Infections such as malaria and worm infestation • hookworms • Blood loss due to an injury or monthly periods /menses 	<ul style="list-style-type: none"> • Eat more iron-rich foods, such as animal products (egg, fish, meat and liver), green leafy vegetables (rape, chuchuzza, pumpkin leaves, and spinach), fortified cereals and mealie meal etc. • Take iron supplements, if recommended by the doctor. Iron works best if taken with a source of Vitamin C such as tomatoes, oranges or orange juice or any other fruits to help absorb iron. • Avoid drinking tea or coffee with meals.
Constipation	<ul style="list-style-type: none"> • Irregular passage of stool. • Passing of very hard and small stool. 	<ul style="list-style-type: none"> • <i>Eating highly processed /refined foods.</i> • <i>Inadequate intake of foods high in fibre.</i> • <i>Side effect of some medications.</i> • <i>Lack of exercise due to immobility</i> 	<ul style="list-style-type: none"> • Eat more foods that are high in fibre content such as fresh maize, unrefined mealie meal, whole meal bread, vegetables and fruits. • Avoid processed or refined foods • Avoid bowel cleansing practices unless prescribed by a Doctor or Health Worker such as enemas and laxatives. • Drink plenty of fluids including safe warm water • Engage in regular body exercise where possible

CHAPTER 6

6.0 FOOD SAFETY AND HYGIENE

The immune system of PLWHA is compromised and as such infections pose an increased risk and must be prevented. Symptoms of such infections include diarrhoea, nausea, vomiting, fatigue and abdominal pain. These can be severe and the source of infection can be difficult to identify. It is important to follow good hygiene and food safety practices for optimal health.

6.1 ENVIRONMENTAL HYGIENE AND SANITATION

Dirty surroundings attract insect vectors such as flies, cockroaches and rats. All of these spread diarrhoeal diseases, which cause loss of water and nutrients in the body. In addition, indiscriminate disposal of human faeces leads to the spread of diarrhoeal diseases that could lessen absorption of nutrients in the HIV and AIDS patient and worsen his/her condition.

- The general surroundings should always be kept clean. All leftovers and soiled items should be safely thrown in the refuse pit.
- Where there are no flush toilets it is advisable to use good well-constructed, ventilated pit latrines that also have a cover or lid for the hole. For both flush latrines and pit latrines, ensure that these are regularly cleaned and disinfected.
- Hand washing facilities should be provided within the latrine with running water and soap.

6.1.0 CLEAN AND SAFE WATER

Water for human consumption should be obtained from a protected source. This could be either from a borehole or a protected well, where running, treated water is not available. Where boreholes or protected

wells are not available, water drawn from rivers or streams should be treated.

6.1.1 STORAGE OF KITCHEN UTENSILS:

Kitchen utensils should not be stored on the ground where they can be contaminated with disease causing organisms. Instead they should be placed on a raised platform, where there is sunlight and air circulation.

6.1.2 FOOD HANDLING



Food handling is important to avoid contamination of food. Some recommendations for safe food handling are given below

- Hands should be washed with soap and warm/hot water after using the toilet, and before preparing and eating food.
- Nails should always be kept short and clean
- Hair should always be covered during food preparation
- All food preparation surfaces and utensils should be kept clean at all times
- Never mix cooked and uncooked foods to reduce chances of contamination
- All raw animal products should be cooked until well done.
- Foods should never be thawed and then re-frozen. Meat should be packed into daily portions before freezing and thawed at refrigerator temperature and not at room temperature.
- Where there is no refrigerator, meat should be dried and stored in a cool place until ready for use.

- Wooden boards should not be used for cutting animal products. Plastic boards are better, and cutting boards and knives should be washed thoroughly with soap before using them for other foods.
- Fruits and vegetables should be washed thoroughly in clean water from safe sources.
- PLWHA should always drink boiled or treated water
- Feeding bottles should not be used to feed babies, instead clean cups and spoons should be used.
- Personal hygiene should always be observed and extra efforts should be exercised during infant feeding

6.2 FOOD STORAGE

- Storage areas should be dry, cool and properly ventilated. Well vents are important in circulation of air. Circulation of air around bags and cartons of food aids the removal of moisture, reduces temperature and eliminates odours.
- Food should be stored using the FIFO (first in – first out) and FEFO (first expiry – first out) method. This means that new supplies should be placed at the back to ensure use of oldest or nearly expiring stock first
- Expiry dates should be checked before buying and consuming a food product. Once a tin has been opened, the food should be removed from the original tins and be kept in a clean and non-metallic storage containers
- Food from dented or bulging containers / tins should not be consumed
- Fresh and frozen foods should be refrigerated immediately, and kept at low temperatures until they are used. For safe storage of frozen foods, the following are essential: Fruits and vegetables should be checked regularly for ripeness and decaying pieces removed to prevent further spoilage.
- Foods that absorb odours, such as eggs, butter and milk, should be stored away from those that gives off odours, like fish, onions and leeks
- Cooked food should be stored above raw meat in the refrigerator

- to ensure that foods are protected from raw meat drippings.
- Refrigerators should be cleaned thoroughly.
- Left over foods should be kept in covered containers in the refrigerator and used as soon as possible within two days. Where there is no refrigerator, leftovers should be used the same day after thorough heating at high temperature
- Do not store food for long periods in the refrigerator

6.3 PREVENTION OF MICRO-ORGANISMS AND WORM INFESTATION

- Animals should be kept away from food or water sources as they may contaminate them.
- Periodic de-worming of PLWHA, especially pregnant and lactating women, and young children, is recommended to prevent anaemia
- Foods should be well cooked
- Shoes should be worn, especially when visiting latrines.

The control of vectors in the provision of holistic care and support to PLWHA is very important. The most common vectors are:

- Flies – These sit on unprotected food, feed on it and leave their excreta on it. They carry germs on their bodies and legs, thus contaminating food, which may cause diarrhoeal diseases.
- Cockroaches – These also feed on food that is not covered mostly during the night. They can also contaminate food with harmful organisms.
- Rats – These may discharge germs and they can also contaminate the places they visit. Most of these vectors live in filthy places, garbage, dumps, excrement, decomposed matter, sewers and drainage pipes. To ensure good health, it is important to get rid of these vectors in the home.
- Where possible, homes should be fumigated to control the vectors.

CHAPTER 7

7.0 HOUSEHOLD FOOD SECURITY AND HIV and AIDS

Food security refers to all people at all times having social, physical and economic access to safe nutritious and adequate food. HIV/AIDS affects all three components of food security: availability, accessibility and utilization. It affects families by reducing their ability to obtain food through its impact on productive labour, income and food stores. Most often individuals tend to cut food intake by reducing portion size or skipping meals. Often there are forced to divert their earnings and savings to meet healthcare and funeral costs. This leads to poverty, increased vulnerability to risky behaviour such as sex for food and money, child labour, crime and drug abuse.

PLWHA may be unable to follow the nutrition recommendations that are provided due to their inability to access the food required.

PLWHA and families affected by HIV should, therefore, be supported in order for them to provide adequate nutrition care. Support can be provided in the following ways:

SUPPORT INTERVENTIONS

1. Assisting communities and those offering support to identify the extent of vulnerability in households in order to provide targeted support. The main objective should be to ensure that support given provides long-term solutions to the affected households, such as diversified means of acquiring food or money through small-scale enterprise developments coupled with improved access to financing schemes for the rural and urban settings.
2. Empowering affected families with knowledge of alternative labour savings technologies such as safe and convenient cooking

facilities, hygienic food preservation skills and utilization methods, conservation (less or minimal tillage), organic farming, or lighter working tool (ploughs, axes and hoes).

3. Linking vulnerable PLWHA with marketing agents to assist with selling of their produce in order to obtain cash for buying foods they do not produce.
4. Equipping vulnerable PLWHA who are directly dependent on agriculture for livelihood with food production inputs, including indigenous seeds and credit facilities, and providing more community support systems for assistance with labour for land clearing, ploughing, weeding, and harvesting and storage.
5. Providing, where necessary, food packs to PLWHA, child headed households and home-based care programmes, depending on the degree of severity. However, this should be complemented with long-term solutions (e.g. backyard gardens).
6. In line with the above, service providers and extension workers should work with affected households to plan for these periods of "hunger seasons" when supplies of some foods are low or non-existent.
7. Service providers and extension workers should work with communities to investigate all options for obtaining a variety of foods and to promote food habits that improve the intake of roots, indigenous vegetables and fruits, nuts, insects and oil seeds.
8. Service providers should promote the inclusion of nutrition education for PLWHA in community based food and nutrition projects such as gardens and rearing poultry and small livestock.

7.2 SUPPLEMENTARY FOOD SUPPORT FOR PLWHA'S

Food Aid interventions can be required for the most vulnerable people. Service providers should be aware of services offered in the community to strengthen food access and availability among households affected by HIV and AIDS. Food security activities that are introduced should strengthen community coping mechanisms.

Note: If food is offered, it should be part of other long term activities aimed at improving food security for HIV affected households and individuals

Suggested supplementary food support Activities:

- ✓ Identification of the most vulnerable communities, households and individuals including orphans in communities
- ✓ Training extension workers and health workers to enable them to provide technical support in addressing household food security in the context of HIV and AIDS.
- ✓ Planning and implementing food aid activities to argument food availability for the worst affected households and infected individuals and orphans in partnership with all stakeholders
- ✓ Food aid can be in form of food for work, take home rations or on- the spot feeding depending on vulnerability

7.2.1 RECOMMENDED FOOD AID MINIMUM BASKET:

The Swaziland national food aid basket presented below is based on the following calculations but is relative to the vulnerability levels of the individuals that the availability of resource:

The average energy of a non-active person is 2070 Kcal/day (FANTA, 2001)

Extra energy requirements for asymptomatic HIV infected adult and adolescent is 10-15% and 20-30% if symptomatic

Protein requirements for non infected person is about 45 grams per day (King and Burgess, 1992)

No extra protein is required for the HIV infected person. (WHO, 2003)

Calculated Monthly Ration size for one HIV Infected Person

Food Commodity	Energy in Kcal	Protein in grams
10 Kg maize meal/ rice	34 000	930
1.5 L vegetable oil	13350	0
4 * 375 peanut butter bottles	8550	375
3 Kg beans/Lentils/Cow peas	9600	660
1.5 L honey/2 Kg sugar	4000	0
Totals per month	69500	1965
Total per day	2316	65.5

Note: This food basket provides the basic energy and protein requirements for an HIV infected person, and should be complemented by variety of vegetables and fruits and can be replaced with a similar food groups if necessary.

CHAPTER 8

8.0 NUTRITION EDUCATION AND COUNSELLING FOR PLWHA

Nutrition education and counselling are important components that should be considered when providing nutritional care and support to PLWHA. They enable individuals to understand the need to maintain an adequate diet and to manage common health problems related to HIV and AIDS that may negatively affect the nutritional status.

8.1 NUTRITION EDUCATION

Nutrition and HIV and AIDS education entails communication activities aimed at motivating individuals to accomplish voluntary changes in nutrition related behaviour in order to improve their nutritional status. This process involves teaching of basic nutritional concepts in a simple and practical manner.

8.2 NUTRITION COUNSELLING

Counseling is seen as sharing information and empowering individuals to make informed decisions. However, when counselling PLWHA, it may involve more than empowering them on food and nutrition issues. It also requires helping PLWHA to address their feelings and reactions with regard to their HIV status as it relates to nutrition. Good nutrition counselling should result in positive changes in healthy eating habits and help improve the quality of life of the client.

A counsellor, who understands and empathizes with how clients react to the HIV infection, can provide nutrition counselling to examine their options and help them make the best choices. In so doing, clients are more likely to agree with various options provided.

8.2.1 PSYCHO SOCIAL COUNSELLING FOR PLWHA

Psychosocial counselling is an important part of nutritional care and support because depression, stress and stigma have a great impact on self-esteem, which can affect appetite and ultimately nutrition intake. It is important to provide emotional, mental, spiritual and social support to PLWHA. In addition the creation of a supportive environment in the form of support groups and other networks for referral purposes is essential. Encouraging a positive attitude towards the illness and exploring feelings of guilt, fear and denial, can help make a difference in the health and nutritional status of the HIV infected persons and improve their quality of life.

8.2.2 WAYS OF PROMOTING NUTRITION COUNSELLING

Adhering to long-term medical or dietary regimens is not easy and many clients may soon give up if the information is not presented in a clear, encouraging way. HIV is a chronic condition and nutritional interventions are an important part of the comprehensive care package. This means that PLWHA should receive information, advice and counselling on a number of issues to help them live with positive attitudes and improve their quality of life. It is important that nutrition counselling be strong and consistent. The following principles are essential in promoting and improving the acceptance of nutrition counselling:

- The first step of nutrition counselling is to conduct a dietary intake and habits assessment. Information and options should only be given afterwards.
- Food habits are difficult to change, and HIV requires vigilance in observing dietary intakes. It is important to review previous knowledge on food and nutrition issues and suggest new realistic changes as the situation demands.
- Focus nutritional education and counselling on the most important and relevant information, based on the client's prevailing circumstances.

- Focus on the positive stress all the foods your clients can eat, consider issues of affordability and accessibility and offer ideas on how they can prepare food and share recipes if appropriate.
- Give action oriented-tips. Give simple and specific tips. For example, instead of just telling a client to eat a variety of fruits and vegetables, tell them to eat at least one fruit and one type of vegetable that is readily available, accessible and affordable to them.
- Provide practical suggestions. Use a list of local, affordable and accessible foods to show the client what they need to eat or how much extra food they need to eat, or how to manage symptoms such as diarrhoea, anorexia, nausea, and vomiting and weight loss.
- Negotiate with the client for positive nutritional actions. Avoid starting with words like Don't . Avoid and Stop .
- Communicate nutrition information, taking into account the clients own cultural values and beliefs. For example, know what food taboos are and help them to identify appropriate alternatives.
- Set short and long- term goals and gradually work on adding more goals with each success. Formulate nutritional strategies such as dietary plans and set targets with the clients, e.g. weight-gain and improved laboratory results eg CD4 cell count.

Arrange for follow-up visits. One visit is not enough. Changing life long eating habits involves a lot of time.

8.2.3 NUTRITION COUNSELLING CHECKLIST

DID THE COUNSELLOR	YES	NO
Greet the client?		
Introduce oneself to the client?		
Treat the client with respect?		
Listen carefully and actively, and empathy to the client's need and concern?		
Make an eye contact when talking to the client?		
Take note of verbal and non verbal cue from the client?		
Ask open ended questions?		
Praise and reaffirm things that the clients is doing right		
Provide interventions that were acceptable, affordable, feasible and safe for the client?		
Communicate the nutrition information with regard to the client's level of knowledge and cultural values and beliefs?		
Provide practical and realistic suggestions/recommendations for the client?		
Maintain professional conduct during the counselling session?		
Discuss follow up with the client?		

Note: Ensure that all the above are done for an effective nutrition counselling session.

CHAPTER 9

9.0 MONITORING AND EVALUATION OF THE IMPLEMENTATION OF NUTRITION GUIDELINES

Maintaining an organized assessment, analysis and documentation system is a critical component of the implementation of activities associated with nutritional care and support. In this regard, it is important to monitor the implementation of the guidelines and review them in relation to local experiences. This will help provide information on how well the guidelines are contributing to the goal of improved quality of life for PLWHA.

Monitoring and evaluation should address two main questions:

1. Are the guidelines helping in the delivery of appropriate nutritional care and support to PLWHA? Which elements of the guidelines are working well? Which ones are not? What are the gaps?
2. Are the guidelines contributing to the improvement of the nutritional status and quality of life of PLWHA?

Therefore, the monitoring and evaluation will include the following:

- Following up with the key stakeholders involved in the development of complementary guidelines in order to assess the practicality of the use of the guidelines within their agencies;

Monitoring/Evaluation Implementation of Guidelines

Training:

Health care and community workers will be trained on the national guidelines. They will be monitored to determine how useful the training and guidelines are in improving their knowledge of nutritional issues, as well as their skills in disseminating appropriate information.

- Impact on Clinical Practice
- Interviewing the PLWHA who received nutritional care and support to assess the extent to which they have been able to follow the guidelines and suggest medications;
- Assessing the types of nutritional support activities (counselling, food supplementation, food security) given to the PLWHA and their families; and
- Having meetings with the stakeholders to get comments on the guidelines, to identify gaps and to facilitate the review
- In order to achieve the above, accurate records of all clients, including weights, food intake and medical records, must be kept. The data should be aggregated and reported periodically;
- There must be agreement amongst the key stakeholders and related programmes/interventions on the purpose of the monitoring and evaluation and the key indicators to use (see Annex 8); and

Monitor the availability, accessibility and use of the national nutrition guidelines to the stakeholders in the various sectors.

COMPONENT	OBJECTIVE	INDICATORS	Proposed data collection method
MATERIAL DEVELOPMENT AND DISSEMINATION	To assess the effectiveness of the dissemination strategies.	<ul style="list-style-type: none"> • Percentage/proportion of the target groups/organizations with access to the guidelines. • Percentage/proportion of target group(s) who are aware of the existence of the guidelines. • Number of strategies used to disseminate the guideline and recommendation. • Number of additional guideline support materials developed and distributed. 	Review of records and community based sample survey.

IMPLEMENTATION

To incorporate and put in practice the guideline recommendation in the on-going programs and services.

- Number of health programs and service points implementing nutrition care services for PLWHA.
- Number of staff charged for nutritional care services.
- Number of training institutions with nutritional care sessions incorporated in their training program.
- Number of training sessions organized for service providers at different levels.
- Number of service providers trained on nutritional care services for PLWHA.
- Range of implementation strategy done to facilitate uptake of the guidelines.
- Number of PLWHA receiving nutritional care services based on the recommendation guidelines.
- Proportion of providers implementing guidelines

Review of records and community based sample survey.

		<ul style="list-style-type: none"> recommendations. Level of attitude by provider and clients towards 	
Evaluation	To monitor the health effects of nutritional care and support guidelines.	<ul style="list-style-type: none"> Proportion of PLWHA receiving nutritional care services who have maintained weight and or gained weight Level of 	Longitudinal Sample Survey and Observation.

ANNEX 1

MICRONUTRIENTS

NUTRIENT	SOURCE	FUNCTION/ROLE	DEFICIENCY SIGNS AND SYMPTOMS
PROTEIN	Beef, game meat, pork, fish, poultry, beans, dried peas, groundnuts, edible insects, Milk and milk products, eggs, soya beans, dried mushrooms.	<ul style="list-style-type: none"> Provide necessary materials for building, repair and maintenance of the body's tissues. Develop the immune system and resistance to infections. 	<ul style="list-style-type: none"> Protein Energy malnutrition Marasmus (wasting), Kwashiorkor Anaemia, failure to thrive (failure to grow)

CARBOHYDRATES	Maize meal, millet meal, sorghum meal and cassava meal, rice, potatoes, sweet potatoes, cassava, bread, sugar, yams.	<ul style="list-style-type: none"> • Provide energy to the body • Fibre in carbohydrates prevents constipation, coronary heart diseases and diabetes. • Soluble fibres are also used in diarrhoea treatment. 	<ul style="list-style-type: none"> • Protein Energy malnutrition • Marasmus (wasting), Kwashiorkor • Anaemia • Failure to thrive (failure to grow)
FATS	Edible insects, cooking oil, margarine, cream, peanut butter, groundnuts, avocado pear.	<ul style="list-style-type: none"> • Source of energy and heat • Production, therefore important for weight gain. • Aids absorption and transportation of fat. 	<ul style="list-style-type: none"> • Marasmus (wasting) • Skin problem • Anaemia • Hypothermia (excessively feeling cold in the body, hands and feet).

ANNEX 2

MICRONUTRIENT (NEEDED IN THE BODY IN SMALLER AMOUNTS)

NUTRIENT	SOURCE OF FOOD	FUNCTION/ROLE	DEFICIENCY, SIGNS AND SYMPTOMS
VITAMIN A	Carrot, eggs, liver, mangoes, papaya, pumpkins, green leafy vegetables, yellow sweet potatoes, red palm oil, full-cream milk (when fortified). Cheese, butter, cassava leaves, cowpea leaves, sweet potatoes leaves, turnip, wild fruits.	<ul style="list-style-type: none"> • White blood cells formation. • Good eyesight • Healthy skin. • Bone development. • Antioxidant. Needed for the immune function and resistance to infection 	<ul style="list-style-type: none"> • Dry eye, skin and hair. • Prone to problems. • Blindness • Skin infections.
VITAMIN B1 (THIAMINE)	Whole-grain cereals, meat, beef kidney, poultry, fish, liver, milk, eggs, oil, seeds and legumes, groundnuts, soya, cashew nuts, cowpeas, pork	<ul style="list-style-type: none"> • Used in energy production. • Promotes appetite. • Supports the central nervous system. 	<ul style="list-style-type: none"> • Beriberi (enlargement of the nerves, loss of weight, oedema, disturbances in the functions of the heart). • Loss of appetite, Nausea; Tiredness, Numbness of the hands and feet.

VITAMIN C	Guava, oranges and lemons; cabbage, green leaves, tomatoes, peppers, potatoes, yams cooked plantains, wild fruits	<ul style="list-style-type: none"> • Helps the body to use calcium and other nutrients to build bones and the walls of blood vessel. • Increases non-haem iron absorption • Increases resistance to infections • Acts as an antioxidant. • Important for protein metabolism. 	<ul style="list-style-type: none"> • Scurvy (bleeding of the gums) • Gingivitis (bleeding, sore and inflamed gums) • Angular Stomatitis (sores on corners of the month) • Anaemia
VITAMIN B12	Meat, fish, poultry, cheese, eggs, milk, liver.	<ul style="list-style-type: none"> • Formation of red blood cells and white blood cells. • Maintains the nerve and the digestive tissues. 	<ul style="list-style-type: none"> • Anaemia, tiredness. • Confusion, numbness, nerve problems • Ringing in ears.
FOLIC ACID	Liver, green leafy vegetables, fish, pork, kidneys, legumes, groundnuts, oil seeds.	<ul style="list-style-type: none"> • For healthy teeth, gums, and bones. • Fights infections • Helps iron absorption, • Works as an antioxidant 	<ul style="list-style-type: none"> • Bleeding gums, slow hearing • Prone to infections; anaemia, • Muscle and joint pains • Frequent colds; depression
VITAMIN E	Green and leafy vegetables, vegetable oils and wheat germ. Whole-grain products butter, liver, egg yolk, peanuts, milk fat, nuts, seeds.	<ul style="list-style-type: none"> • Increases disease resistance • Enhances reproduction • Slows ageing process • Treats scar tissue • Antioxidant 	<ul style="list-style-type: none"> • Tiredness, Dry hair • Leg cramps, muscle weakness • Nerve problems, hearing problems • Infertility impotence

CALCIUM	Milk, yogurt, cheese, green leafy vegetables, broccoli, dried fish with bones that are eaten, legumes, peas.	<ul style="list-style-type: none"> • Building strong bones and teeth • Normal functioning of the heart muscle • Helps in blood clotting • Helps to maintain normal blood pressure 	<ul style="list-style-type: none"> • Delayed blood clotting. • Weak breakable bones • Problem teeth • Low resistance to infection • Rickets (weak bones and are easily bent and deformed. This is very common in children) • Stunting
IODINE	Seafood, iodated salt	<ul style="list-style-type: none"> • Development and proper functioning of the brain and the nervous system • Important for normal growth and development • Important for reproduction. 	<ul style="list-style-type: none"> • Goitre (swelling on the neck) • Cretinism (imbecile) • Impaired brain function • Dwarfism (gross stunting) • Abortions
ZINC	Meats, fish, poultry, shellfish, whole-grain cereals, legumes, peanuts, milk cheese, yogurt, vegetables.	<ul style="list-style-type: none"> • Protects immune system needed for digestive and immune systems. • Formation of Enzymes • Wound healing • Vitamin A metabolism • Normal development of male organs • Antioxidant 	<ul style="list-style-type: none"> • Slow growth • Loss of smell and taste • Loss of appetite • Diarrhoea, poor wound healing • Skin problems, ringing in ears • Prostate cancer

SELENIUM	Brown rice, nuts, whole-grain, onions, garlic, egg yolk, milk, meat, sea food.	<ul style="list-style-type: none"> Prevents oxidation and breakdown of fat and other body cells. Antioxidant 	<ul style="list-style-type: none"> Weakness Pancreatitis (blockage of the pancreatic ducts), Impaired growth Impaired hearing, faster HIV disease progress and reduced survival Impaired immune system
MAGNESIUM	Legumes, nuts, seeds, whole-grains, avocado, green leafy vegetables, e.g okra, broccoli, cucumber skin, sea food.	<ul style="list-style-type: none"> Food muscle and nerve function Release of energy from fats, proteins and carbohydrates. Strong bone and teeth 	<ul style="list-style-type: none"> Spasms (twitching of muscles) Cramps, tremors Constipation
IRON	Main sources are red meat, liver, fish, poultry, and shellfish. Other sources include eggs, legumes, nuts including peanuts.	<ul style="list-style-type: none"> Needed for oxygen exchange in blood Needed by enzymes. Vitamin C is important for absorption of iron Energy production 	<ul style="list-style-type: none"> Anaemia, headache Tiredness, irritability Paleness, dizziness Decreased mental alertness

ANNEX 3

EXAMPLES OF LOCALLY AVAILABLE FOODS AND THEIR POTENTIAL ROLES IN THE BODY

FOOD ITEMS	ROLE IN THE BODY
<ul style="list-style-type: none"> GRAINS, CEREALS AND TUBERS Straight run mealie-meal from maize. Green maize, maize samp, sorghum, millet, rice, cassava tuber, sweet potatoes 	<ul style="list-style-type: none"> Good source of energy for the body Also provide some minerals and vitamins, in particular the B-group vitamins (riboflavin, thiamine, niacin vitamin B-6 and B-12, folate) if the skin and kernel of the grains/cereals are eaten whole. Some refined cereals may be fortified with some vitamins and minerals.
<ul style="list-style-type: none"> Indigenous vegetables and legumes Sweet potato leaves cassava leaves; dried or fresh pumpkin leaves; cowpeas and bean leaves; dried mushrooms, okra, groundnuts and beans 	<ul style="list-style-type: none"> These provide proteins, vitamins (especially vitamin A) and minerals – the rich sources of vitamin A tend to be the dark leafy green, yellow, orange and red vegetables and fruits They also provide other non-nutrient substances known as phytochemicals that may help to strengthen the immune system. Good source of Fibre in the diet
Indigenous fruits Wild fruits:	Good sources of vitamin C and some minerals. Provide other non-nutritive (phytochemicals) substances that help to strengthen immune system
Edible insects	Sources of protein and some vitamins and minerals.
Local beverages Fruit juices made from oranges, pawpaw, lemon	Good source of vitamin C What grains specifically are these drinks made from (it would be nice to indicate this)

ANNEX 4

SUMMARY OF NUTRITIONAL ASSESSMENT FOR PLWHA

NUTRITION HISTORY	<ul style="list-style-type: none"> • Dietary intake and adequacy, eating habits • Dietary problems: poor appetite, difficulty chewing and swallowing, gastrointestinal problems, pain in mouth and gums • Sanitation and hygiene practices in food preparation and handling • Psychosocial factors contributing to inadequacy of intake e.g. social isolation, depression, stigma, inability to prepare food • Fatigue and physical activity • Use of vitamin and minerals supplements or alternative practices. • Knowledge about food and nutrition issues.
MEDICAL HISTORY	<ul style="list-style-type: none"> • Gastrointestinal problems (diarrhoea, abdominal pain, nausea, vomiting) • Pattern of bowel movements (constipation, diarrhoea) • Presence of opportunistic infections • Concurrent medical problems (e.g. diabetes, hypertension, tuberculosis, malaria).
PSYCHOSOCIAL PROFILE	<ul style="list-style-type: none"> • Living environment and functional status (income, housing, amenities to cook, access to food, attitude regarding nutrition and food preparation) • Lifestyle practices (smoking, alcohol and drug abuse) • Age • Family support system • Educational level
MEDICATION	<ul style="list-style-type: none"> • Drug use - antiretroviral, alternative therapies and other medications • Medication side effects with nutrition implications • Nutrition-medication interactions and traditional herbs or medical interactions

PHYSICAL ASSESSMENT	<ul style="list-style-type: none"> • Anthropometric measurements: height, weight, • Body mass index: weight/height. A body mass index of <18.5 indicates nutrition risk • Evidence of loss of muscle mass (wasting); mid-upper arm circumference(<23cm indicates nutrition risk) • Oral or Pharyngeal inflammation • Pallor (inner eyelids and palms) • General malaise (weakness)
LABORATORY TESTS (WHERE AVAILABLE)	<ul style="list-style-type: none"> • Serum albumin • CD4 and viral load counts • Evaluation of anaemia (haemoglobin, iron, folate, vitamin B-12 status) • Parasites e.g. worms

ANNEX 5

DAILY ENERGY REQUIREMENT OF HIV INFECTED PREGNANT AND LACTATING PHYSIOLOGICAL STATUS

	Average energy Intake	Additional energy required for pregnancy and lactation	Additional energy requirement of HIV	Total Energy Intake	Protein
Pregnant					55
Uninfected	2140	280	0	2420	
Asymptomatic	2140	280	210	2630	
Early symptomatic	2140	280	430	2850	
Symptomatic	2140	280	640	3060	
Lactating					68
Uninfected	2140	500	0	2640	
Asymptomatic	2140	500	210	2850	
Early Symptomatic	2140	500	430	3070	
Symptomatic	2140	500	640	3280	
Not breastfeeding					
Uninfected	2140	0	0	2140	
Asymptomatic	2140	0	210	2350	
Early Symptomatic	2140	0	430	2570	
Symptomatic	2140	0	640	2780	

ANNEX 6

ENERGY INCREASE FOR PREGNANT AND LACTATING WOMEN

	Energy Requirements		Protein Requirements
Healthy Pregnant Woman	1 st trimester	+150 Kcal/day	+0.7 g/day
	2 nd trimester	+300 Kcal/day	+3.3g/day
	3 rd trimester	+300 Kcal/day	+5.8g/day
Healthy Lactating Woman	+500 kcal/day(first 6 months of lactation, then decrease gradually)	+16g/day for the first 6 months of lactation	
	For women who are underweight or whose weight gain during pregnancy is low during the first 6 months of lactation	+12g/day for the second 6 months, and 11g/day thereafter	
	+650 Kcal/day	+21g/day	

COMMON HERBS AND SPICES

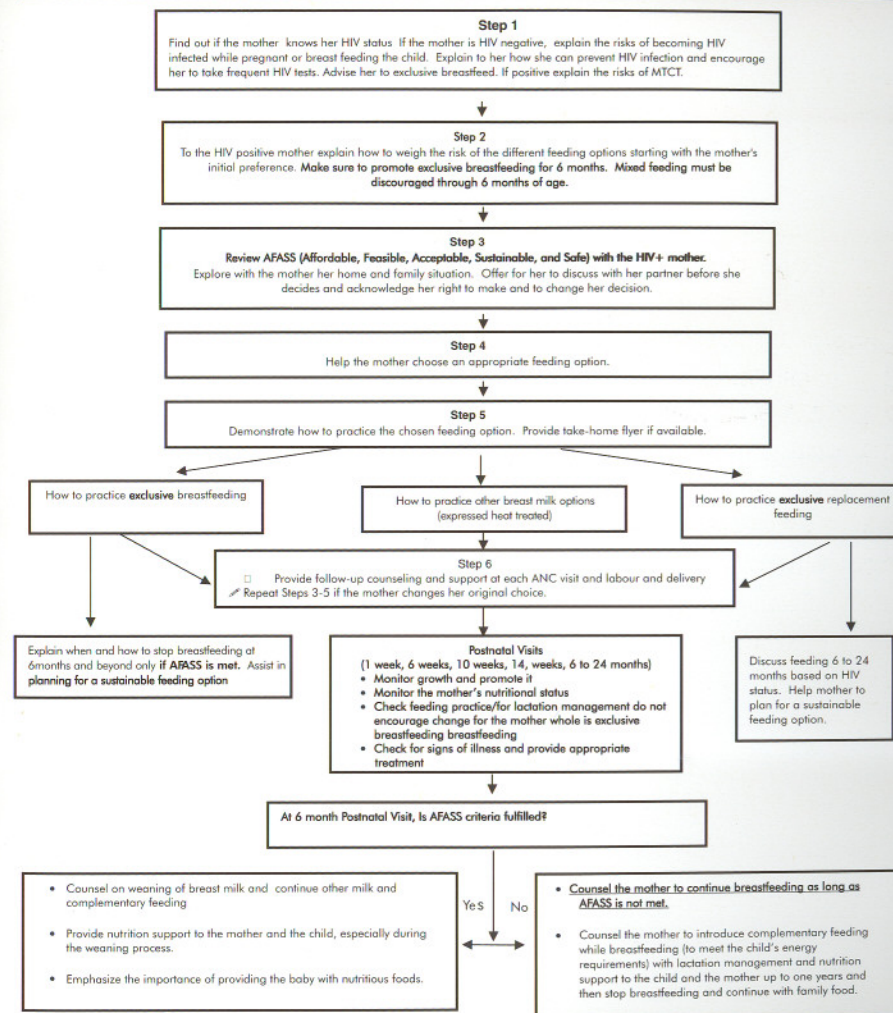
HERBS	BENEFITS FOUND BY SOME PEOPLE LIVING WITH HIV and AIDS	HOW TO USE
Garlic	Has anti bacterial, antiviral and anti fungal functions, particularly in the gut, intestines, lungs and vagina. Helps digestion and feeling weakness. Also good for thrush, throat infections, herpes and diarrhoea. Can also be used as a vaginal insert with vegetable oil.	Prepare tea or power drinks, or use in food.
Ginger	Improve digestion, energizes, relieves diarrhoea and stimulates appetite. Used for treating common colds, flu and nausea.	Use either as a spice in meals or prepare a ginger tea
Lemon	Is antibacterial and helps digestion	Add lemon juice to food or drinks
Lemon grass	Has claming effects as well as soothing digestion and alleviating stress	Use as tea
Mint	Has an anti-inflammatory effect effects and helps digestion	Use as tea or gargle for mouth sores, chew mint leaves to aid digestion
Neem	Brings down fever	Cut fresh twig, remove the leaves and boil the bark in water; drink as tea. The bark can also be chewed.
Parsley	Reduces intestinal colic Stimulate stomach secretions and activities and produces a feeling of hunger. The seed is used to remove excess water from the body	Add raw or cooked to food
Peppermint	May help nausea. Reduces colic (abdominal pain and cramps) helps to control diarrhoea and stop vomiting. Used for relieving tension and sleepness	Prepare as tea, by boiling the leaves for about ten minutes. Add to food. (peppermint can easily be grown in the garden or in a pot near the house.

Thyme	Has antibacterial and antifungal functions. Relaxes nervous coughing and increases mucosal secretions. Stimulates digestion ad the growth of the good intestinal flora in the gut.	Use as gargle or mouthwash, as vaginal douche or as tea (particularly effective in the gut)
Tumeric/yellow root	Digestive aid, antiseptic and antioxidant	Use powder in rice cereal, etc.
Aloe	Helps to relieve constipation	Use as extract; boil and drink the concentrated water. To be used in limited amounts, stop immediately if causes cramps or diarrhoea.
Basil	Helps to relieve nausea and aids digestion; has an antiseptic function for mouth sores.	Add to food to treat nausea and digestive problems. Use as gargle for mouth sores
Calendula	Flower heads have antiseptic, anti-inflammatory and healing function. Helps with infections of the upper digestive tract.	Use as a compress to treat infected wounds. Prepare as tea help digestion.
Cardamom	Helps with digestive problems, pain, diarrhoea, nausea, vomiting and loss of appetite.	Add to food during cooking or prepare as tea.
Cayenne	Stimulates appetite, helps fight infection, heals ulcers and intestinal inflammation	Add a pinch to cooked or raw foods. For an energising drink add to fruit juice or water
Comomile	Helps digestion and provides relief for nausea	Prepare tea from the leaves and flowers and drinks several cups throughout the day.
Cinnamon	Good for colds and for weakness after colds or flu. Also used when feeling cold, for diarrhoea and nausea. Stimulates appetite. Gently stimulates digestive juices, encouraging bowel movements	Either add to meals or in tea, particularly ginger cinnamon tea for chesty colds or tuberculosis (see recipe in Annex 1)
Cloves	Stimulate appetite, help weak digestion, diarrhoea, nausea and vomiting	Use in soups, stews, warmed fruit juice and tea
Coriander	Helps to increase appetite and reduce flatulence. Controls bacteria and fungi	Add herb to meals

Eucalyptus	Has an antibacterial function, particularly for lungs and during bronchitis. Eucalyptus oil from leaves increase the blood flow and reduces the symptoms of inflammation	Prepare tea from the leaves or extract (see recipe in Annex 1)
Fennel	Helps to increase appetite, combat flatulence and expel gas	Add as spice to foods or prepare tea from the seeds. Use in limited amounts.

ANNEX 8

STEPS FOR COUNSELLING MOTHERS ABOUT INFANT FEEDING FOR HIV EXPOSED INFANTS







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Organization
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Small text below the logo, likely a website address or contact information.



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