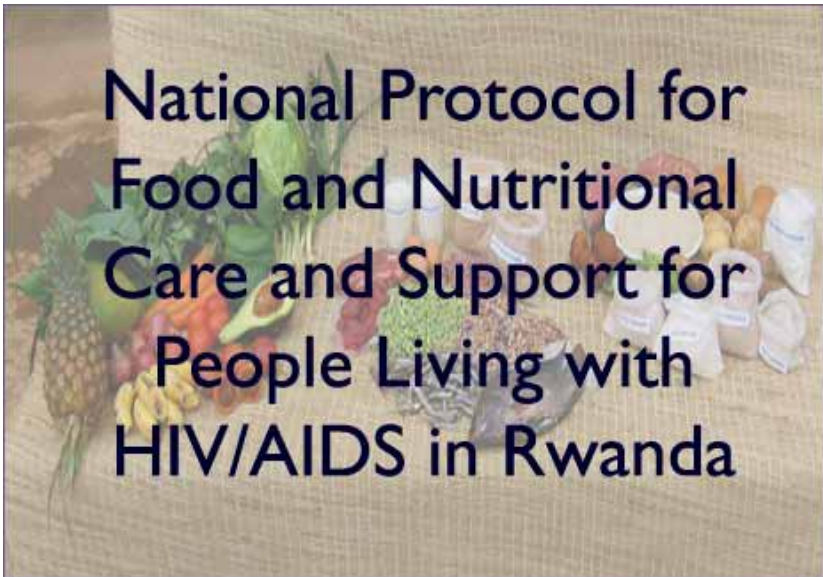


REPUBLIC OF RWANDA



Ministry of Health



PREFACE

The HIV/AIDS pandemic affects 3% of the Rwandan population (7.3% in the urban areas and 2.2% in the rural areas (RDHS 2005), with the greatest impact being on its most productive members with consequences on the economic development of the country and household food security. This situation is aggravated by poverty, which affects 60% of the population, and a high prevalence (more than 30%) of malnutrition.

AIDS leads to malnutrition in affected individuals and reduces their immunity & ability to fight opportunistic infections. As a consequence, household labor capacity is reduced, followed by a fall in agricultural production and income generation. HIV/AIDS therefore limits the capacity of the affected households to access quality and appropriate health and nutritional care. With the availability of antiretrovirals, it is important to have food for drug efficacy, and adherence to drug regimens. The interaction between HIV/AIDS and nutrition is not a single vicious cycle, but several vicious cycles which in mathematical terms do not result only in misery or death, but worse – death in misery.

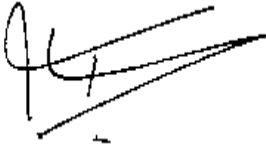
In addressing the problem of the HIV/AIDS, the strategy of the Government of Rwanda places particular emphasis on prevention, while at the same time providing prophylaxis and treatment for opportunistic infections and antiretroviral therapy to all people living with HIV/AIDS, irrespective of their social status.

It is now important to include nutrition as an integral component of a comprehensive package of the treatment and care strategy for people living with HIV/AIDS so as to break these vicious cycles caused by the virus. It is for this reason, we highly appreciate the valuable multi-sectoral response of the Rwanda Nutrition Technical Working Group, which, with this Protocol and Guidelines, has given direction to the hitherto missing food and nutrition dimension to the package of treatment and care for people affected and infected with HIV/AIDS.

This Protocol offers practical recommendations for healthy and balanced diets aimed at improving the nutritional well being of PLWHA. The Protocol is intended to be used by service providers, mainly in the health and agricultural sectors, gender and social development, the local administration, as well as those providing home based care.

The Ministry for Health is grateful for this valuable tool, which is the fruit of the effort of various partners, and counts much on the users for their constructive feedback.

Lastly, it is our intention that this protocol fall under the Vision 2020 of the Government whose objective is not only national development, but also to relieve the individual's pain and disease for a better health, a better education, a more productive and better life.

A handwritten signature in black ink, consisting of a large initial 'I' followed by several loops and a long horizontal stroke extending to the right.

Dr Innocent NYARUHIRIRA
Minister of State in Charge of HIV/AIDS and Other Epidemics
Ministry of Health.

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ACRONYMS AND ABBREVIATIONS

AFASS:	Accessible, feasible, Acceptable, Sustainable and Sure
AIDS:	Acquired Immune Deficiency Syndrome
ANC:	Ante Natal Consultation
ART:	Antiretroviral Treatment
ARV:	Antiretroviral
BMI:	Body Mass Index
FANTA:	Food and Nutritional Technical Assistance Project
Hb:	Hemoglobin
HIV:	Human Immuno-deficiency Virus
IDD:	Iodine Deficiency Disorders
IU:	International Units
M&E:	Monitoring and Evaluation
MINISANTE:	Ministry of Health
MTCT:	Mother to Child Transmission (of HIV)
ORS:	Oral Rehydration Solution
PLWHA:	People Living with HIV/Aids
PMTCT:	Prevention of Mother to Child Transmission (of HIV)
TB:	Tuberculosis
UNICEF:	United Nations Children's Fund
VCT:	Voluntary Counseling and Testing
WFP:	World Food Program
WHO:	World Health Organization

GLOSSARY

- A healthy and balanced diet:** Consuming the required quantities and varieties of food in sufficient quantities to meet daily energy and nutrient needs. The food should consist of staples (cereal), vegetables, legumes, animal products, fruits, nuts and fats/oils.
- Absorption:** The process by which nutrients cross the gastrointestinal cell membranes into the blood system to be utilized by the body.
- AIDS:** Acquired Immune Deficiency Syndrome. A group of diseases caused by HIV.
- ART:** Antiretroviral treatment- A treatment regimen for HIV with anti-retroviral drugs
- ARV:** Anti-retroviral. A name given to a group of drugs which act on the virus and prevent it from reproducing itself in the body
- Candidiasis:** Also called *candidosis*. Infection with a fungus of the genus *Candida* that usually occurs in the skin and mucous membranes of the mouth, respiratory tract, or vagina but may invade the bloodstream, especially in immuno-compromised individuals.
- Constipation:** A state of poor functioning of the intestines leading to problems of defecating. This can result from a low fiber diet, may be a symptom of a disease or drugs side effects
- Counsel:** A dialogue between the client and a service provider aimed at helping the client to face the stress and to take personal decisions about their condition, i.e., HIV/AIDS. The counseling process includes the evaluation of the personal risk of transmitting HIV and promotion of preventive behavior.
- Dehydration:** Dangerous and excessive loss of water and salts by the body, often associated with diarrhea.
- Diarrhea:** Frequent discharge of liquid feces at least three times a day.
- Digestion:** The process by which food is prepared (broken down or decomposed) in the digestive tract releasing nutrients for absorption.

Household food security: A situation whereby every person, at all times, have physical, social and economical access to sufficient, safe and nutritious food to meet their nutrient needs for an active and healthy life.

Immune system: All the mechanisms which defend the body against external agents, especially the microbes (virus, bacteria, fungus and parasites).

Malnutrition: An abnormal physiological state caused by deficiencies, excess or imbalance of energy, proteins and/or other nutrients. In this publication, malnutrition is referred to as: a) lack of food energy (under-nourishment); and b) lack of nutrients (deficiencies).

Micronutrients: Vitamins, mineral salts and some other substances, which are required by the body in small quantities.

Nausea: A feeling of disquiet/unsettled in the stomach.

Nutrient: Nutritional substances-contained in food and released during digestion.

Nutrition: Science of food and how it is utilized by the body for growth, work, play, sustain health and resist diseases.

Nutritional education: Education of individuals, families and communities encouraging them to select the food they consume in order to achieve optimum health

Opportunistic infection: An infection by a micro-organism which normally does not bring about a disease, but becomes pathogenic in a person whose immune system is depressed, like in HIV infection.

Oral rehydration solution (ORS): A liquid substance administered to people to restore fluids and mineral salts lost during diarrhea. An ORS can be prepared by mixing salt, sugar and water or making some light porridge using cereals such as rice and maize or diluting the ORS powder from a package in drinking.

- Palliative medicine:** Drugs which moderate HIV symptoms and help a person to feel better without treating the HIV infection itself.
- PLWHA:** A general term referring to all people infected with HIV, whether or not they show the infection symptoms.
- Staple food:** Foods which make up the major part of the diet, particularly cereals such as maize, rice, wheat and millet or tubers such as coco yams, cassava and Irish potatoes.
- To live positively:** A way of life enabling PLWHA to adopt a positive attitude towards themselves, strive to improve their situation, continue to work and live a normal life, face the future positively, with hope and determination without giving in to despair, depression, sense of guilt or feeling sorry for themselves.
- Virus:** An infectious agent (microbe) responsible for many diseases in human beings. It is an extremely small particle which, unlike bacteria, can only survive and reproduce in a living cell at the expense of the cell.
- Vitamins:** A group of natural substances that the body needs in small quantities (micronutrient) to sustain health.

1.1 Justification of the Protocol

Rwanda has adopted policies and guidelines for the prevention and treatment of HIV/AIDS but these do not specifically address issues of care and nutritional support needed by PLWHA. To date, initiatives targeting this aspect, such as those of NGOs and programs that combat AIDS, are limited in scope and are not harmonised. Additional guidelines are therefore necessary to fill this gap. This protocol on the Nutritional care and support of PLWHA will enable programs and services to give concrete and consistent recommendations to PLWHA and those who provide care to them and also contribute to the awareness of the importance of food assistance and nutritional care and support in mitigating the impact of HIV/AIDS.

1.2 Objective of the protocol

1.2.1 General Objective

The general objective of this protocol is to present measures that service providers need to take in order to give quality nutritional care and support to PLWHA at the different levels of contact.

1.2.1.1 Specific Objectives

The major specific objectives are:

1. To give the necessary information to addressing nutritional aspects of PLWHA;
2. To give practical recommendations for the nutritional care and support at the household, hospital and other health facilities levels;
3. To give guidelines on the modalities for monitoring and evaluation of nutritional interventions targeting PLWHA.

1.3 The target groups

People infected and affected by HIV/AIDS

1.4 People who will use the protocol

This protocol may be used by:

1. Health care providers including those who are involved in testing, counselling, diagnosis, home-based treatment and care;
2. Health, social, educational and nutritional planners;
3. Staff of community-based organizations working with PLWHA;
4. The Rwandan Network of People Living with HIV/AIDS;
5. Staff of national and international agencies supporting PLWHA programs
6. Training and research institutions

N.B. This protocol was developed using the National Guidelines for Nutritional Care and Support for People Living with HIV/AIDS in Rwanda.

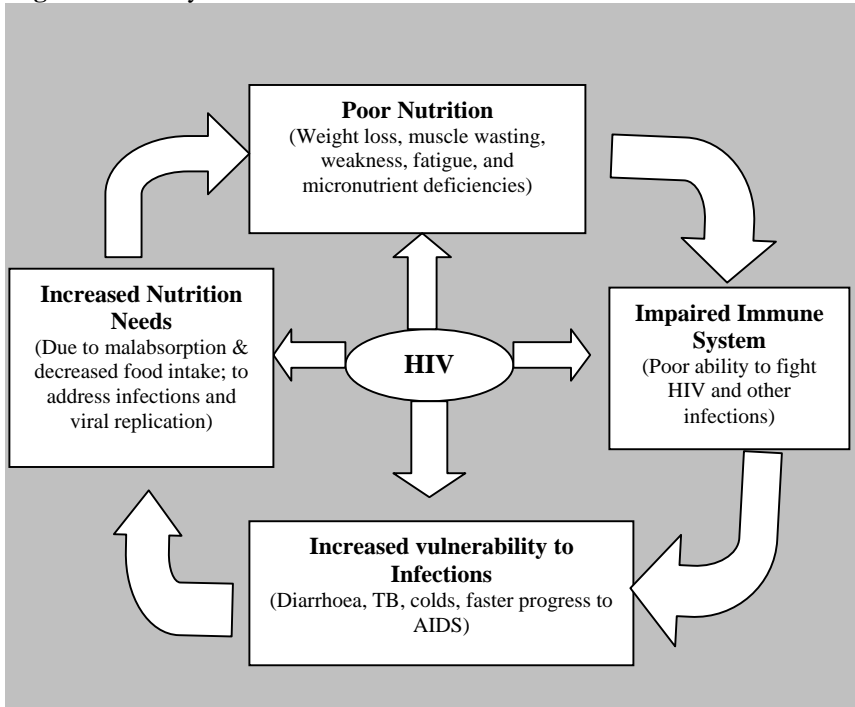
2 THE RELATIONSHIP BETWEEN FOOD, NUTRITION AND HIV/AIDS

Nutrition and HIV/AIDS are strongly interdependent. Malnutrition can both lead to and be caused by progression of HIV. This relationship between malnutrition and HIV/AIDS creates a vicious cycle: HIV weakens the immune system, which in turn leads to more infections (Figure 1). Heightened infections (in number and severity) lead to loss of appetite, resulting in inadequate food intake, and eventually malnutrition. Malnourished persons are at greater risk of infections, creating more vulnerability to HIV, and so the cycle continues.

Whilst HIV may take years to progress to AIDS, the negative effects of the virus on nutrition can occur early in the course of the disease. Weight loss, a decrease in lean muscle tissue and damage to the immune system, are more common for adults but they are also prevalent in children infected with HIV. A PLWHA is more at risk for malnutrition because of reduced food intake, poor absorption, changes in the body's metabolism, chronic infections and illnesses, anorexia or loss of appetite, diarrhea, fever, nausea and frequent vomiting, thrush, and anemia. Early diagnosis and treatment of these symptoms help to improve the nutritional state and the health of the patients.

Excessive weight loss (more than 10% of body weight over a 6-month period) is a possible sign of the onset of clinical AIDS. A healthy life style and nutritionally sound diet, early treatment of infections, and recovery after infection can reduce the negative effects of future infections.

Figure 1: The Cycle of Malnutrition and infection in the Context of HIV/AIDS



Source: FANTA, 2002.

Weight loss and malnutrition are common among patients infected with HIV or suffering from AIDS. They are likely to speed up the progression of the disease, increase morbidity and reduce survival rate, because of the well-known impact of malnutrition on the immunity. It is thus necessary for people living with the virus to regularly monitor their nutritional status in order to minimize the impact of malnutrition on their immune system, which is already compromised.

This protocol gives detailed account of general criteria for nutritional evaluation using anthropometric indicators; clinical assessment and finally the evaluation of food security at the household level, to enable service providers give appropriate nutritional care and support to PLWHA.

3 ASSESSMENT OF THE NUTRITIONAL STATUS

At the moment, measurements of weight and height (plus age determination), give us important information on a person's nutritional status when considered together. When any two of these variables are used together, they are called indices. Many anthropometric indices can be used but the most commonly used are: W/H, BMI, W/A and MUAC. There are currently no specific anthropometric measurements for PLWHA, consequently, these common measurements are used.

Table1: Criteria for classification of nutritional status

	Severe malnutrition		Moderate malnutrition	
	Adults	Children and Adolescents	Adults	Children and Adolescents
BMI	< 16		<18.5	
W/H		< 70%		80%
MUAC (children 1-5 years)	-	< 11cm		<12.5cm
MUAC (pregnant and breast-feeding women)	< 16cm		< 18.5cm	
Oedema	Yes	Yes		

Source: RCQHC/FANTA/LINKAGES (2003)

PLWHA have to be weighed at least once a month with calibrated scales and record their weight in order to detect changes as soon as possible. On the basis of Table 1, service providers can classify clients according to their nutritional status.

3.1 Children under 5

- A. Clinical signs: edema, thinning hair, loss of weight, skin wrinkles, anemia.
- B. Anthropometric indices
 - **W/A:**
 - < 65%: severe malnutrition (red strip)
 - 65-85%: moderate malnutrition (yellow strip)
 - ≥ 85% : good nutritional state (green strip)
 - **W/H:**
 - 70%: severe malnutrition
 - Between 70- < 80%: moderate malnutrition

3.2 Children between 5 and 15 years

A. Anthropometrics Indices

- **W/H:**
 - < 70%: severe malnutrition
 - between 70- 80% : moderate malnutrition

3.3 Adolescents and adults

A. Anthropometrics Indices

- **BMI:**
 - < 16cm : severe malnutrition
 - between 16 and 18.5 : moderate malnutrition

3.4 Pregnant Women

- Weight gain
 - To ensure there is no weight loss during the 1st trimester
 - To ensure a weight gain of more than 1.5 kg/month from the 2nd trimester up to the time of delivery.

NB: Refer all pregnant women who gain <1Kg/month of their body weight from the 2nd trimester to a higher level for appropriate care and treatment.

3.5 Breast-feeding women

A. Anthropometrics Indices

- **BMI:**
 - <16: severe malnutrition
 - between 16 and 18.5 moderate malnutrition

NB: Refer all lactating mothers who loose >10% of their body weight (in a period of six months) to a higher level for appropriate care and treatment.

4.1 Feeding infants born to an HIV-positive mother

4.1.1 Baby 0 to 6 months old

➤ **For an infant whose status is unknown:**

There are three possible feeding options:

1. Exclusive breast feeding with early cessation
2. Modified breast feeding
 - Mothers milk expressed and heat- treated
 - Exclusive wet-nursing
3. Appropriate breast milk substitutes
 - Commercial products
 - Animal milk prepared at home (cow milk, goat milk, etc.)

➤ **For an infant who is HIV-positive after PCR:**

Two options are possible:

1. Exclusive breast-feeding until AFASS conditions are met
2. Appropriate breast –milk substitutes.

➤ **For an infant who is HIV-negative after PCR:**

Two options are possible:

1. Transition to modified breast-feeding
2. Appropriate breast-milk substitute

N.B. Supplements of 50,000 UI of Vitamin A and other multiple micronutrients for those who have opted for fresh milk prepared at home.

4.1.2 Infants between 6 to 24 months old

After six months, breast-milk or substitutes must be complemented with other appropriate foods.

4.2 Advantages and disadvantages of each option

4.2.1 Exclusive breast- feeding

Advantages

- Meets all the nutritional requirements for the infant from birth to 6 months
- Protects the infant from infectious diseases such as acute respiratory infections and diarrheal diseases
- Reduces the risk of HIV transmission;

- Allows intimacy and contact between mother and child

Disadvantages

- Risk of HIV transmission through mother's milk in the course of the first 6 months. This risk is very high when the infant's mouth, throat or intestines are irritated, or the mother's breasts are affected (abscess, cracks, mastitis, swollen).

4.2.2 The heated milk method

Advantages

- Kills the HIV/AIDS virus in the milk of an HIV- positive mother
- Preserves the major part of the nutritive quality of breast milk
- Makes it possible to continue breast- feeding
- Avoids breasts swelling and mastitis
- It is much cheaper and has fewer health risks than artificial milk products
- Does not require a lot of materials and equipment to prepare - requires only bottles, cups, charcoal or wood.

Disadvantages

- Heating reduces the level of anti-infection elements in breast milk
- Requires a lot of preparation time for the mother or the care-giver
- Creates a stigma for the mother within her community
- Requires a lot of support for the mother to overcome the difficulties
- The milk needs to be cooled for 10-20 minutes before it is given to the baby;
- Preparation material and equipment must be available

4.2.3 The wet-nurse method

This is when the infant is breast-fed by a woman other than its own mother (grandmother, close relative or other volunteer). Traditionally, this method was used by grandmothers or aunts when the mother was dead or absent. In the HIV context, the wet-nurse must be HIV-negative and remain so throughout the breast-feeding period.

Advantages

- Ideal for infant feeding as it gives the same benefits as the mother's own breast-milk
- Gives the infant protection against several diseases

- Culturally acceptable in certain regions
- Much cheaper when compared to milk substitutes

Disadvantages

- Risk of baby being attached to another woman other than its biological mother
- May cause stigmatization of the mother in her community.

4.2.4 Industrial/commercial breast-milk substitutes**Advantages**

- No risk of HIV transmission after birth;
- It is an option if the family meets all the AFASS conditions.

Disadvantages

- Very expensive for the majority of mothers in the rural area;
- Can have dilution errors leading to dehydration;
- High risk of contamination if the conditions of hygiene are unmet increase risk to diarrhea, malnutrition and death;
- Can decrease the bond between mother and child causing a delay of psychosocial stimulation;
- Can be a source of stigma for the mother in the community.

4.2.5 Animal milk prepared at home (cow milk, goat milk, etc.)**Advantages**

- No risk of HIV transmission after birth.

Disadvantages

- Does not contain all the nutrients needed by the infant, hence the need to add sugar, multiple micronutrients;
- Very rich in proteins, sodium, calcium compared to breast milk from the mother;
- Can be expensive;
- Can decrease the bond between mother and child causing a delay of psychosocial stimulation;
- Can have dilution errors leading to dehydration;
- High risk of contamination if the conditions of hygiene are unmet increase risk to diarrhea, malnutrition and death;
- Can be a source of stigma to the mother in her community;

4.2.6 Industrial/commercial breast-milk substitutes**Advantages**

- No risk of HIV transmission after birth;
- It is an option if the family meets all the AFASS conditions.

Disadvantages

- Very expensive for the majority of mothers in the rural area;
- Can have dilution errors leading to dehydration;
- High risk of contamination if the conditions of hygiene are unmet increase risk to diarrhea, malnutrition and death;
- Can decrease the bond between mother and child causing a delay of psychosocial stimulation;
- Can be a source of stigma for the mother in the community.

4.3 Infants 24 to 59 months old

It is recommended to:

- Give 3 to 4 balanced meals using local foods;
- Give two snacks between meals;
- Supplement with micronutrients according in line with national recommendations.

Give food supplements according to the stage of the disease (symptomatic or asymptomatic) are shown in the table below:

Table 2: Recommended food supplements per phase of the disease

Population group	HIV Phase	Energy requirements
Children	Asymptomatic	10% more
	Symptomatic (without weight loss)	20-30% more
	Symptomatic (with weight loss)	50-100% more

*This supplements the necessary energy, proteins and micronutrients.

Source: WHO, GENEVA (2003).

4.4 Pregnant and lactating woman

A good nutritional status is of particular importance for the well-being of all women as well as the survival and development of their children. Because of increased nutrient requirements, pregnant women and lactating mothers are at a greater risk of malnutrition. HIV/AIDS further amplify nutritional requirements by 10% for asymptomatic phase and 20% for the symptomatic phase (see Table 3 below).

Counsel pregnant women and lactating mothers to:

- Prevent parasitic infections and nutritional diseases by following recommended food hygiene practices, such as regularly washing hands with water and soap, disposing of all fecal matter in appropriate places; drinking clean water.
- Seek early treatment for all infections (fever, diarrhea) in order to minimize their impact on nutritional well-being;
- Seek early and regular prenatal and postnatal consultation (e.g., micronutrient supplementation, STI and anemia test).
- Utilize the PMTCT program and ART available in Rwanda.
- Regularly monitor their body weights, to find out if gaining enough or losing weight
- Have their children checked to establish their serological status.

Table 3: Increase in nutritional requirements by category and phase

Population group	Normal	HIV phase A symptomatic +10%	HIV phase Symptomatic +20%
Adult	2 100	2 300	2 500
Pregnant women	2 400	2 600	2 900
Breast feeding mothers	2 600	2 800	3 100

Source: WHO, GENEVA (2003).

4.5 Adolescents and Adults

- Explain nutritional requirements
- Give information on balanced diet. Counsel PLWHA to improve their energy and nutrient intake by:
 - Increasing the quantity and frequency of meals rich in energy, proteins as well as plenty of fruits and vegetables.
 - Taking nutritious snacks between meals as often as possible;
 - Eating foods which have been enriched in essential micronutrients such as vitamins A, C, E, K and iron, zinc and selenium.
- If the hemoglobin level (Hb) is lower than 11mg /dl encourage the client to seek medical help immediately. The client should be counseled to consume a diversified diet rich in micronutrients;

- Counsel the client to make meal plans based on locally available foods taking into account the accessibility, availability, preservation and storage of food, the taste and preference of the client, the household and community, and if the client is on medication or has any infections.
- Counsel those taking care of PLWHA to regularly supervise their meals to ensure that they eat a balanced and nutritious meal.
- Inform clients on personal and food hygiene practices, i.e., washing hands with soap and water before touching or eating food, cooking animal-derived foods properly, drinking treated/boiled water, washing fresh fruits and vegetables with clean water and preserving food stuffs in an appropriate manner.
- Encourage them to frequently have their nutritional status checked by::
 - Monitoring their weight every month
 - Check anemia by determining their hemoglobin levels
 - Evaluating their nutrition intakes using one-week food records.
- Counsel the client to promptly seek treatment for HIV/AIDS related symptoms, particularly those affecting eating, i.e., fever, thrush, mouth sores, diarrhea, vomiting, nausea and loss of appetite;
- Counsel client to avoid practices such as alcohol consumption, tobacco smoking, use of illicit drugs and drinking too much soda, tea or coffee and foods that contain caffeine, which could interfere with meal time, nutrient absorption and utilization;
- Develop an exercise plan with the client, in order to ensure to ensure that the client does physical exercise regularly so as to avoid loss of weight, muscle tone and to stimulate appetite. If muscular wasting continues in spite of regular exercise, the client should be referred for medical assistance.

4.6 PLWHA under ARV

Interaction between ART and nutrition can significantly influence the success of ART by affecting the efficacy of medicines, adherence to treatment regime and nutritional status of PLWHA. Therefore, the management of the interaction between ART and nutrition is an important factor in ensuring that ART is effective in slowing the progression of HIV and improving the quality of life of PLWHA.

- Give advice on drugs that must be taken with or without meals.

- Set up a timetable for meals and taking medicines (based on doctor's instructions), in order to minimize secondary effects of the drugs and improve the utilization of the nutrients by the system;
- Advise clients to get immediate treatment for any infection, allergy or other condition.
- Advise the patient on herbal medicines or plant-based medicines treatment
- Follow up on the effect of medicines on the health and nutritional status of the client.
- Seek information on the side effects (secondary) of drugs and the recommended action to take;
- Keep in mind that not all symptoms are necessarily due to the secondary effects of medicines.

All these recommendation are applicable to children and adolescents as well as adults on ARVs and other medications.

4.7 Diverse nutritional counseling for PLWHA

Counseling is an integral part of nutritional care and support of PLWHA. Positive and efficient counseling can produce improvements in nutritional behavior and help improve the quality of life of PLWHA. As the majority of those giving this service in Rwanda are not trained counselors, it is important to build their basic knowledge in the area of counseling. Nevertheless, service providers should at least evaluate the needs of the patient and provide information to help in taking decisions on matters of nutrition by doing the following:

- Evaluating the precise nutritional and food requirements of the client within their context;
- Identifying alternatives that the client has for resolving a problem or meeting a specific need;
- Dealing with obstacles that could affect the choice of the alternative;
- Making the best choice in line with the client's circumstances;
- Ensuring that the client understands the pros and cons of each option and that they take responsibility for each choice made;
- Helping the client to take practical decisions according to the information provided.

5.1 Types of nutritional treatment

Nutritional treatment is based on the evaluation and classification of patients (clients) as described in Section 2.1. (Table1). There are two types of nutritional treatment:

- Intensive treatment for severe cases – this treatment is done at hospital level;
- Outpatient treatment for moderate cases –it is expected that treatment can be carried out at community level.

5.2 Intensive treatment for severe cases

Criteria for taking up this treatment are described in table 1. Intensive treatment for severe cases varies according to the age and physiological state. Furthermore, this treatment must be accompanied by medical treatment (as described in section 5.5.).

The treatment described below is based on the WHO Protocol.

5.2.1 Children

Treatment for children is done using Therapeutic Milk, in 3 phases for about 21 days. Reformulating the milk using locally available products should be encouraged. And it should be done according to the UNICEF formula. When the UNICEF Therapeutic Milk is available it can be used.

Basic criteria to be considered- if an HIV+ child presents with W/H >70% and other signs of malnutrition linked to HIV or with edema, the child should immediately be put in phase 1 of dietary treatment.

Phase I:

8 meals per day (= 8 milk drinks) using Therapeutic Milk F75 exclusively, for 5 days giving 130ml/kg/day, which provides 100kcal.

Formula for reconstituting the F75 milk locally:
- mix well and smoothly

25 gm of skimmed powder milk,
100gm sugar

27 ml vegetable oil
1l water
If possible add 20 mg of electrolytes solution (Nat, Cl-, K+).

In the presence of edema, the duration of this phase will depend on the reduction of the edema and weight gain. This weight gain must be consecutive for 3 days. Criteria for moving from Phase 1 to the Transition phase are regaining appetite and steady loss of edema.

Phase II (Transition phase):

8 meals per day (8 milk drinks) using Therapeutic Milk F100 only, for 2 to 3 days giving 130 ml/kg/day, which provides 100 kcal.

The formula for reconstituting F100 Therapeutic Milk locally is:
- mix well and smoothly:

80 gm of skimmed milk
50 gm sugar
60 gm oil
1l of water

Criteria for moving from Phase 2 to Phase 3 are:

- For marasmus : stay at least 2 to 4 days in the transition phase
- For kwashiorkor: stay in transition phase until edema disappears completely

PHASE III:

6 meals per day (4 milk and 2 porridge) using Therapeutic Milk F100 for 14 days giving between 150 to 200 ml/kg/day.

Formula for reconstituting Therapeutic Milk F100 locally
- mix well and smoothly:

80 gm skimmed milk
50 gm sugar
60 gm oil
1l water

In addition to F100 the patient should also be given

- 1 porridge + balanced meal or
- 2 porridge + 1 fruit.

5.2.2 Adolescents and adults

A balanced diet based on local products should be recommended, for example, well mixed and smooth whole enriched cereal porridge:

50gm Sosoma
10gm skimmed milk
30gm sugar
20gm eggs

- Use milk and egg alternatively for enriching the porridge.
- Alternate the diet also with a mixed vegetable soup enriched with a meat, meat cube, fish, egg or milk.
- Adolescent and adults should be treated until their weight stabilizes and increases.

5.2.3 Pregnant women or lactating mothers

For pregnant women or lactating mothers the treatment comprises of two phases that lasts almost days about 8 days in total.

Phase I:

8 meals per day (=8 milks) exclusively using Therapeutic Milk F75 for 5 days giving 150ml-200ml/kg/day:

Formula for locally reconstituting Therapeutic Milk F100

Mix well and smoothly:

25gm skimmed milk
100gm sugar
27ml vegetable oil
1l of water

Phase II :

6 meals per day (4milks +2 porridge)

Use Therapeutic Milk F100 for 2 to 3 days at 300ml/kg/day

Formula: Mix well and smoothly:

80gm skimmed milk

50gm sugar

60ml vegetable oil

Dilute with 1l of water to make a smooth mixture.

In addition to the F100 milk, the following should be added

- 1 porridge + 1 balanced milk, or
- 2 porridge + 1 fruit.

Observations

- In case of inability to eat, introduce gastro-nasal tube and feed if possible the nutritional liquids such as porridge, milk and soup.
- After the dietary rehabilitation phases, proceed to a balanced diet with calorific supplements of between 10-30% for adults and 5—100% more for children with symptoms and weight loss.

5.3 Outpatient treatment for moderate cases

The inclusion criteria for this treatment are described in Table 1. Moderately malnourished clients must be counseled on balanced diets and supplementary feeding using enriched foods such as *sosoma* porridge (Table 5). This table gives recommended minimum food package for nutritional support for people living with HIV/AIDS in food insecure households.

Table 5: Minimum package for dietary support for PLWHA families

Type of food	Quantity/household/month(kg)	Cost per month/family (US \$)
Maize meal	15.0	3.45
Pulses	15.0	6.60
Sosoma enriched	3.0	0.87
Sugar	1.8	0.68
Oil	2.2	1.76
		13.36

N.B. Size of the family is considered to be 5 people.

This ration will provide 60% the daily energy requirements. The balance equivalent to 40% of energy requirements for the households will come from the family resources (own production, family support or purchase, etc).

5.4 Exit criteria from treatment

For all the categories, exit from treatment will be based on weight gain after 2 consecutive weighings, absence of edema for 10 days and up to date vaccinations for children. In summary, criteria for stopping treatment as given in Table 6 are:

- Children: W/H higher than or equal to 85%
- Adolescent: W/H higher or equal to 85%
- Adults: BMI \geq 18.5

Table 6: Criteria for exit from dietary rehabilitation

	Severe malnutrition		Moderate malnutrition	
	Adults	Children and adolescent	Adults	Children and adolescent
BMI	>16cm		>18.5cm after two consecutive weighings	
W/H		> 80%*		>85% -- after two consecutive weighing
MUAC (for children 1-5 years)		>11cm		12.5cm
MUAC (pregnant women and feeding mother)	>16cm		>18.5cm	
Edema	Non	Non		

Source: RCQHC/FANTA/LINQAGES (2003)

5.5 Systematic medical treatment

All nutritional treatment of severely malnourished patients must be accompanied by systematically medical treatment.

Vitamin A: Single dose on admission (Day 1)

- Child aged 6-12 months or weighing <8kg: 100.00IU (blue capsule).
- Child of >12 months and weighing >8kg: 200.000UI (red capsule)

Do not to give Vitamin A to children <6 months.

Folic acid: 5mg in a single dose on Day 1.

N.B.: When using sulfadoxo-pyrimethamine (Fansidar) for malaria treatment, do not give folic acid.

Mebendazole: 100mg tablet.

- Should be given in phase II
- Child of 6 to 12 months: 1/2 tablet 2 times a day for 3 days
- Child of over 12 months: 1 tablet twice a day for 3 days

Treatment can be repeated 15 days later if child has not recovered.

Iron sulphate: 200mg tablet.

- Should not be given before the 15th day because of underlying infections that are frequent among the malnourished.
- 3mg/kg/day in two doses, from day 15 to day 45.

N.B.

- If in the course of treatment, the child presents with hyperthermia, iron sulphate should be stopped and reintroduced when the hyperthermia is controlled.
- If the nutritional rehabilitation centre has only Folic Acid Iron tablets at its disposal, they should not be administered before day 15,
- Contra indication: drepanocytose

Antibiotics

- All severely malnourished patients must receive antibiotic treatment systematically even in the absence of any signs of infection.
- Amoxicillin 100mg/kg/day taken twice over 5 days in the absence of any signs of infection.
- But, in case of signs of infection, antibiotic treatment should be adapted according to the clinical symptoms for suspected infection and verified by laboratory testing.

Anti-fungal treatment

- Most children need oral Nystatine or Amphotericin B (Fungizone). It must be given in a standardized way for every child during phase 1.
- For very sick children, and those with septic shock, gastric retention, vomiting or who have thrush (candidiasis), a stronger anti-fungal drug like Ketoconazole should be given. Gentian violet should not be used unless no other medicine is available.

Curative treatment for malaria according to national protocol.

- In the absence of rapid test (such as paracheck 5), treat children systematically according to the national protocol for malaria treatment, that is, use a combination of sulfadoxo-pyrimethamine (Fansidar) + Amodiaquine in prophylaxis.
- In case rapid test is available:
 2. If the results are negative, do not treat. But if there are clinical signs for malaria, see a doctor immediately, repeat

test in case symptoms reappear in the course of rehabilitation.

3. If the results are positive: treat with the sulphadoxy-pyrimethamine (fansidar)+ Amodiaquine combination

Measles vaccination

- If the child does not have a written proof of measles vaccination, vaccinate child anyway if 6 months old or older on the day of admission.

Dehydration: (gastroenteritis)

- Diarrhoea always accompanies malnutrition
 - Evaluate the degree of dehydration and treat the child accordingly;
 - In case of blotting (swelling) giving potassium 1g/day, monitor administration of the liquid;
 - Draw up a monitoring chart

N.B.: To evaluate dehydration among the malnourished

- Do not confuse malnutrition signs and signs of receding dehydration. Attach more importance to the number of stools and/or vomiting and the general state of the child.
- Continue breastfeeding/feeding the child
- Evaluate the state of dehydration according to WHO standards for acute severe malnutrition among children.

In case of dehydration, Resomal special dehydration solution for severely malnourished must be used during the entire treatment.

Table 6: Procedure in case of dehydration

Degree dehydration	Clinical	Treatment
Prevention of dehydration	Diarrhea (>3liquid stools) without dehydration and for repeated vomiting.	Resomal : after each stool: child <10kg: 50ml, child 10 –20kg: 100 ml, child >20kg: 200ml
Moderate dehydration	Signs of diarrhea and/or vomiting with 2 of the following signs: <input type="checkbox"/> Thirst <input type="checkbox"/> Weight loss 5 to 10% <input type="checkbox"/> Irritable, tired <input type="checkbox"/> Urine reduction	Resomal: 10ml/kg/h for 2 hours then 5 ml/kg/hour until dehydration signs disappear. Opt for the ORS otherwise use nasogastric tube.
Severe dehydration	Signs of diarrhea and/or	Give Resamol by gastro-

without state of shock.	vomiting with one of the following: <input type="checkbox"/> Has difficulties drinking <input type="checkbox"/> weight loss >10% <input type="checkbox"/> Unconscious <input type="checkbox"/> Lethargy <input type="checkbox"/> Urine reduction?	nasal tube or gastrolytes - 5ml/kg every 30 minutes during the first 2 hours. Evaluate the child : <input type="checkbox"/> If the response is favorable: 5ml/kg/h and stop as soon as there are signs that dehydration has stopped. <input type="checkbox"/> If there is no improvement continue 10ml/kg/h. If dehydration continues for 3-4hours, look for a complication (septic shock).
Severe dehydration with hypovolemic shock. Think also about septic shock.	Sign of diarrhea and/or vomiting with one of the following: <input type="checkbox"/> Drinks with difficulty <input type="checkbox"/> Weight loss >10% <input type="checkbox"/> Unconscious <input type="checkbox"/> Lethargic <input type="checkbox"/> Urine reduction <input type="checkbox"/> Weak or quick and imperceptible pulse, or difficult to take pulse; <input type="checkbox"/> Cold extremities	Drip: Darrow's solution or RL 500 cc+ 9g glucose +0.5g KCl at 15ml/kg/hour for 1 hour. And glucose flash 0.3-0.4/kg/h. Monitoring: FC, FR every 15minutes, number of stools, vomiting, urination and skin coloration. After one hour of drip, if there is improvement, follow with Resomal. If no improvement renew drip once and look for another reason (septic shock)

Source: Madagascar nutritional and health service 2004.

Remarks: Breast feeding and other food must continue during the rehydration of the child.

Important notes:

Whiles following the evaluation of signs and the classifications mentioned above, attention should be paid to the following parameters, more particularly during the course of monitoring rehydration:

- Number of stools and especially the character of liquidity, frequency and quantity vomiting.
- State of consciousness, general state
- Tongue dryness
- Sunken eyes and skin folds may be deceptive when it has to do with cachetic marasmus;
- Ensure strict surveillance;
- Look out for severe parlor in the course of rehydration with hemo-dilution (severe anemia) particularly if a light parlor was found on admission;
- When a child vomits, wait 10 minutes and then give a teaspoonful of Resomal every 3 minutes, with the mother participating.
- Avoid the gastro-nasal tube as long as the child can swallow. The GNT is recommended in case of trash (difficulty in swallowing) repeated vomiting and refusal to drink.

6 FOOD SECURITY IN HOUSEHOLDS AFFECTED BY HIV/AIDS

6.1 Household food security

This means that all people in a household have, at all times, access to and control over adequate quantities of good quality food for an active and healthy life. In order to achieve this, households must have the capacity to produce or purchase, and preserve food and have adequate knowledge of its utilization.

HIV/AIDS increases the risk of household food insecurity through its impact on the productive force, income, food stocks and dependency ratios. HIV/AIDS affects the 3 elements of food security: availability, accessibility and utilization.

Food insecurity can lead people to adopt risky behaviors (i.e. sex for food/money), which in turn increase the spread of HIV/AIDS. Improving food security is a prerequisite for improving the way of life and preventing risky behavior.

6.2 Key actions by service providers

Care providers are: Associations of PLWHA, CBOs, decentralized agricultural services, health facilities, NGOs, household members/relatives, bilateral and multilateral organizations.

I. Evaluate food practices and factors that could stop PLWHA from improving their food security (by social workers in MINISANTÉ).

- Understand the specific problems of the community,
 - The burden of HIV/AIDS in the community
 - Food production models
 - Access to health, social and financial services
 - Division of labor in households
 - Utilization of available food within households
 - Food preservation practices
 - Strategies/actions used in order to address food insecurity
- Evaluate food security in HIV/AIDS affected households. Specific community factors developed in collaboration with social workers and local leaders to identify with food insecure households including some of the following:
 - Households that report to have had less than 2 meals per day, prior to the interview;
 - Households that have been forced to reduce food portions;
 - Households that have been obliged to borrow or exchange food in the course of the week preceding the interview;
- Evaluate constraints and challenges met in adopting recommended practices.

II. Support families affected by HIV/AIDS to put into effect efficient and sustainable strategies for food security including (by RRP+, District agricultural officers, nutritionist, CDC):

- Initiate income generating activities
- Reallocate expenses for food in order to increase the purchase of nutritious food;
- Redistribute tasks in the household to assure adequate care and nutritional support for the infected;
- Identify services which reinforce for access, availability, and utilization of food in the household. These services include:
 - Production of a variety of crops and small animals (chicken, goats, etc)
 - Use new types of crops and technologies to reduce workload.

- Refer eligible beneficiaries to institutions that give food support, i.e., provide food ration to take home, for people affected by HIV/AIDS.
- Combine or link food assistance with other services such as:
 - Education and nutritional counseling;
 - Growth promotion, breastfeeding and basic health services for children;
 - Care giving/treatment of infections, which could aggravate malnutrition;
 - Reproductive health services, particularly pre-and post-natal consultation;
 - Psycho-social support for PLWHA and members of their families;
 - Economic and social support for households affected by HIV to maintain their income, their savings and secure their livelihoods in general.
- Inform patients about social networks for food security in the community.

7 MONITORING AND EVALUATION OF THE IMPLEMENTATION OF THE PROTOCOL

7.1 Monitoring and evaluation objectives

Monitoring and evaluation will provide information on how far the general and specific objectives of this protocol have been achieved, and the effectively it has been used. Evaluation, analysis and systematic documentation of progress in activities related to the care and support are essentially linked in order to ensure successful implementation.

a) Why monitoring and evaluation?

- To make it possible to improve interventions;
- Provide information for the actors on progress in utilization of the food and nutrition levels, as a component of care and overall support for PLWHA;
- Facilitate sharing of results and lessons learnt from other programs and provide information in order to advocate for increased support for nutritional care programs;
- Raise awareness on improvements in nutritional status that can be achieved through behavior change as recommended in the Protocol.

b) What should be monitored? See Table 7 below

- c) Who does the monitoring?
- At national level: Ministry of Health (Nutrition Division, TRAC, RRP+);
 - District level: District officer of Health (nutritionist); RRP+
 - Community level: Community health workers, associations of people living with HIV;
 - Partners
- d) How to do the monitoring:
- Develop a monitoring tool in a participatory manner;
 - Client satisfaction: Interview people living with HIV/AIDS who have had the nutritional training as part of the program to evaluate at what level the service providers were able to utilize and implement the protocol.
 - Hold a follow-up meeting with key persons in agencies involved in the development of the local protocol in order to evaluate the experience in the utilization of the manual among their agencies.
 - Set up a system of monthly reporting on the follow-up and feedback.
- e) Follow –up and evaluation of what?
- Utilization of feedback and lessons learnt by relevant staff on the implementation and (possible) revision of the protocol.
 - Documentation of best practices on the experience in implementation of the protocol.

Table 7. Activities, indicators and material for monitoring and evaluation.

ACTIVITY	INDICATORS	SOURCE OF INFORMATION
Evaluation of nutritional status	% of children <5 years with W/A <65%	Growth chart
	% of children <5 years with W/A between 65%-85%	Growth chart
	% of children <5 years with W/A < 85%	Growth chart
Nutritional counseling	% counselors trained	Service providers' reports
	Topics covered for different groups (children, mothers...)	
	Duration of counseling sessions	
	Number of sessions held	
	% of people followed up at home	
	% of people followed up at health centers	

	% of people followed up at the offices of associations	
Nutritional rehabilitation	% of children <5 years with W/H < 70%	Rehabilitation centre register
	% of children <5 years with W/H between 70% and 80%	Rehabilitation centre register
	% of children between 5-15 years with W/H <70	Rehabilitation centre register
	% of children of 5-15 years with W/H between 70% and 80%	Rehabilitation centre register
	% adults with BMI <16	Rehabilitation centre register
	% adults with BMI between 16-18.5	Rehabilitation centre register
	Number of admitted cases	Rehabilitation centre register
	% cured	Rehabilitation centre register
	% abandoned	Rehabilitation centre register
	% died	Rehabilitation centre register
	% transferred	Rehabilitation centre register
	Average length of stay	Rehabilitation centre register
	Average weight gain	Rehabilitation centre register
	% children having receive Vitamin A	Rehabilitation centre register
	% children vaccinated against measles	Rehabilitation centre register
	% children dewormed	Rehabilitation centre register
	% women having received Iron	Rehabilitation centre register
% breast feeding women having received Iron	Rehabilitation centre register	
Food Security	% identified food insecure households	
	% household having benefited from IGAs	
	% PLWHA having received food aid	Reports from service providers
	% PLWHA having joined associations	
	% PLWHA having gained weight as a result of food aid	

$$\text{Formula for average weight gain} = \frac{\text{Weight on exit (kg)} - \text{Weight at entry (kg)}}{\text{\# of days}}$$

Source: Nutrition working group in Rwanda (2005).