

Synthesis Report on the Famine Forum

Annette C. Sheckler, Timothy Shortley, Anne Swindale and Sue Lautze

May 2004

In response to the 2002 National Security Strategy, USAID issued its White Paper, Foreign Aid: Meeting the Challenges of the Twenty-first Century. The White Paper outlines USAID's proposed reforms and guiding principles to increase development aid effectiveness and policy coherence. In it, the developing world is divided into two groups of countries: relatively stable developing countries and fragile states.

USAID's strategy for fragile states has significant implications for how USAID responds to the challenges of famine in a constantly shifting global context. According to the White Paper:

Fragile states include those on a downward spiral towards crisis and chaos, some that are recovering from conflict and crisis, and others that are essentially failed states. The challenge for these countries is to strengthen

governance, health and livelihood systems, and in particular food systems at the national level, increase famine vulnerability. The combination of shocks, failing systems and poor policies in these countries often results in famine outcomes including destitution, morbidity, malnutrition and mortality.

USAID has responded to recent threats of famine primarily with large amounts of food aid. Yet, the root causes of famine extend far beyond climatic anomalies and are inextricably bound to households and societies capacities for managing both shocks and longer term processes, e.g. globalization, marginalization, disease epidemics, etc. To date, USAID has focused its resources on response and not prevention and mitigation. In order to better deploy resources to meet the challenge of famine in fragile states, the Office of Food for Peace (FFP) and the Office of U.S. Foreign Disaster Assistance (OFDA)

¹ United States Agency for International Development, U.S. Foreign Aid: Meeting the Challenges of the Twenty-first Century (January 2004), referred to here as the White Paper.

OD FOR PEACE

institutions, basic governance and stability, and thereby join the group of countries where more conventional development cooperation and progress are possible. ¹

The White Paper highlights the competing principles of investing more resources in relatively stable developing countries positioned for transformational development and the need to strengthen fragile states. According to the White Paper, [f]rom the perspective of long-term U.S. interests, transformational development remains the best investment. ² Yet, without sufficient investment in fragile states especially famine-prone countries the United States, other donors and recipient countries are stuck on a treadmill of massive humanitarian aid. The immediate focus on saving lives fails to address the root causes of weak livelihoods systems that provide little or no protection against shock (e.g. famine or conflict).

Famine prone countries are a unique sub-set of fragile states that require special focus. These countries currently include Angola, Democratic Republic of Congo, Eritrea, Ethiopia, Malawi, the Peoples Democratic Republic of Korea, Somalia, Sudan, and Zimbabwe. In all cases, weak and failing economic,

organized Washington, D.C.

a Famine Forum
The objectives of the forum were to:

March 24 - 25, Recognize that a sub-set of fragile states represents the most famine-prone countries and requires that USAID does business differently to address the underlying causes through a developmental relief approach;

Redefine USAID's definition of famine and policy toward the application of resources to prevent and respond to the threat of famine;

Use the newly identified famine scales to lower the present threshold of famine;

Identify alternative responses necessary for success beyond the nuts and bolts of food and non-food programming, including livelihood and market interventions, responses to health system inadequacies, as well as short- and longer-term policy and governance constraints; and

Enhance coordination with other donors to develop pro-active approaches to famine prevention and famine response.

USAID's Office of Food for Peace and Office of U.S. Foreign Disaster Assistance





home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

USAID's Office of Food for Peace and Office of U.S. Foreign Disaster Assistance

Participation in the forum included a broad representation of USAID practitioners, senior-level USAID management and representatives from FEWSNET, the International Food Policy Research Institute (IFPRI) and the Academy for Educational Developments Food and Nutrition Technical Assistance Project (FANTA). International famine experts Sue Lautze, (Feinstein International Famine Center at Tufts University), Stephen Devereux and Paul Howe, (Institute of Development Studies), as well as others, made significant contributions to the discussion with some of the state-of-the-art thinking on the challenges of addressing famine in the 21st century.

This report is a synthesis of the discussions that took place during the forum and concludes with recommendations for priority actions that will assist USAID to move from famine response to famine prevention in a strategic manner. Table 1 is a detailed summary of the key themes and focus areas that were discussed.

The first section summarizes the presentation made by Stephen Devereux and Paul Howe on the famine scale, a new approach to defining famine based on measuring intensity, based on malnutrition and mortality indicators, and magnitude. Lowering the catastrophic threshold and moving from a food-first approach to a broader, more complex definition, emphasizing peoples livelihoods as well as a multi-sector approach will drive an earlier and more appropriate response.

Section Two summarizes the discussion on changes required in USAID's institutional structure and

The U.S. is the lead donor in humanitarian response worldwide. Section Four looks at ways to leverage this role within the broader humanitarian community, focusing on the pros and cons of consensus; the need to reform U.N. disaster management agencies; and diversifying non-governmental organization (NGO) implementing partners.

Last, new tools, approaches and programmatic changes are required to address famine as a failure of systems and strategies in famine-prone countries. Section Five is a discussion on using the livelihoods context to broaden famine definitions, improve surveillance, monitoring information and assessments, and improve famine prevention and response efforts.

This synthesis report concludes with a list of priority action areas.

List of Acronyms

CMR	Crude Mortality Rate
DA	Development Assistance
DCHA	USAID's Bureau for Democracy, Conflict and Humanitarian Assistance
FANTA	Food and Nutrition Technical Assistance Project
FEWSNET	Famine Early Warning Systems Network
FFP	USAID's Office of Food for Peace
GDA	Global Development Alliance
HA	Humanitarian Assistance
IDFA	International Disaster and Famine Assistance

culture. This includes:
 responsibility for prevention throughout USAID;
 strengthening human resource capacity; promoting
 a climate of risk-taking; and improving information
 systems.

Following the discussion of institutional changes
 is a section on resources. Resources drive famine
 response. Forum participants expressed broad
 agreement on the need to clarify concomitant
 funding and programming flexibilities that will
 ensure success in supporting a famine prevention
 agenda. Section Three discusses the need to increase
 the availability of resources and have greater
 flexibility in deployment to support aggressive
 famine-prevention interventions.

Synthesis Report on the Famine Forum

2

IDS	Institute of Development Studies
IFPRI	International Food Policy Research Institute
ILO	International Labor Organization
NGO	Non-governmental Organization
OFDA	USAID's Office of U.S. Foreign Disaster Assistance
P.L. 480	U.S. Public Law 480, Title II commodity program administered by USAID (see Title II)
TITLE II	USAID administered program to provide agricultural commodities to foreign countries to address famine or other urgent relief requirements
UN	United Nations
USG	United States Government
USAID	United States Agency for International Development

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Synthesis Report on the Famine Forum

Table 1. Key Themes and Focus Areas of Discussion for Consideration

1. Policy	<p>Update Famine Background Paper</p> <ul style="list-style-type: none"> - <i>operational definition, lower thresholds for response, use famine scales</i> <p>Review White Paper for implications for required resource integration (Development Assistance (DA), International Disaster and Famine Assistance (IDFA), Title II)</p> <p>Integrate famine-prone countries into Fragile States Strategy</p> <p>Identify famine-prone countries as priorities</p> <ul style="list-style-type: none"> - <i>devise country-specific strategies such as the new Ethiopia famine prevention framework</i>
2. Institutional	<p>Build mechanisms for assigning accountability and responsibility within the Agency for famine prediction, response and prevention</p> <ul style="list-style-type: none"> - <i>better integration across the agency in preventing and mitigating famine</i> <p>Strengthen human capacity</p> <ul style="list-style-type: none"> - <i>empowered Humanitarian Entrepreneurs / Humanitarian Diplomatic Corps</i> - <i>knowledgeable mission staff (including Mission Director) on famine and famine processes as well as prevention and response tools available</i> - <i>encourage risk-taking and innovative thinking</i> <p>Improve knowledge management of historical approaches and innovations</p>
3. Resources More and Better	<p>Increase availability of resources of DA, Title II, IDFA</p> <p>Provide more flexibility to tailor response to causes</p> <p>Rationalize food and/or non-food resource prioritization</p> <p>Use food aid resources to support market development and policy reform</p> <p>Better integrate Development Assistance (DA) and Humanitarian Assistance (HA) resources</p> <ul style="list-style-type: none"> - <i>appropriate mix of available development assistance, disaster funds, and food assistance</i> <p>Support multi-year and predictable resource flows</p>

4. Recipient Governments/ Donors/ Implementing Partners

Leverage USAID resources to a greater extent (reducing barriers and creating enabling environment)

Better understand when consensus among donors is required for USAID to respond

- *understand strengths and weaknesses of consensus-building*

Press for United Nation reform of disaster management agencies

- *bring in parts of U.N. system that are not in crisis (e.g., ILO)*

Increase requirement for match of private resources

Diversify PVO/NGO implementing partners

5. Programmatic

Information - more and better

- *baseline understanding of current situation and contextual factors (e.g., food security, health systems, governance)*
- *baseline for early warning indicators; more holistic, predictive indicators (e.g., livelihoods)*
- *on-going monitoring*

Make better use of the local mass media channels to inform the people about the response, and to hold the government accountable

More emphasis on:

- *prevention and early response*
- *building local capacity to respond in short-term*
- *health status, systems and health responses*
- *good governance*
- *reducing vulnerability (medium-term)*
- *poverty reduction (longer-term)*

Better market development interventions; engage the private sector in famine response

Transform project approach to systems response as famine is a failure of systems (e.g., economic, governance, health, and livelihoods)

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

USAID's Office of Food for Peace and Office of U.S. Foreign Disaster Assistance

1. Defining Famine Using Intensity and Magnitude: The Famine Scale

It is important that USAID update the present famine background paper to include an operational definition of famine that broadens the parameters from simply a catastrophic event to reflect the complexity and inter-relationship of causal factors. This includes lowering the catastrophic threshold and moving from a food-first approach to a more nuanced definition, emphasizing the multi-causal nature of famine vulnerability.

Operationally defining famine is a key step towards refining the policy framework. Recent USAID experience in Southern Africa and Ethiopia highlights the reluctance within USAID and the broader international humanitarian community in declaring a famine. A declaration of famine has significant implications for the timing of the response, resource allocation, type of response and, ultimately, accountability. Without consensus on the definition of famine, stakeholders may delay responding to the crisis until, in effect, it is too late. This is one of the many factors that delays response.

The absence of a universally accepted definition of famine within the international humanitarian community has operational and political consequences. ³Operationally, disagreements over terminology make it difficult to interpret and respond quickly on the early warning data that precede the crisis. During the crisis, lack of consensus about what constitutes a

1) the accelerated deterioration of conditions that precede the famine event a critical component of effective early warning; 2) the broader crisis that includes health and physical security; and, 3) the range of livelihoods crises that underpin famine vulnerability.

Capturing the trajectory of famine conditions and the broader crisis beyond food availability is especially critical within the context of the HIV/AIDS pandemic. A high prevalence of HIV/AIDS creates famine conditions and famine conditions facilitate the spread of HIV/AIDS. This new variant famine where HIV/AIDS is a central feature, a concept proposed by Alex de Waal and Alan Whitehead, ⁴has three features that makes a food crisis wider, deeper and more intractable. First, vulnerability is widely spread. Second, household impoverishment is more rapid. Third, a high level of vulnerability continues well beyond the breaking of the famine. ⁵

Paul Howe and Stephen Devereux propose using a famine scale that:

disaggregates intensity (the severity of a crisis in a given area at a specific point in time) and magnitude (the aggregate impact of the entire crisis);
 moves from a binary conception of famine/no-famine to a graduated understanding based on scales; and
 assigns harmonized objective criteria in place of individual subjective judgments. ⁶

The intensity level in a given population area is determined

¹This section is based on a presentation made by Stephen Devereux and Paul Howe at the Famine Forum. See also, Paul Howe and Stephen Devereux, *Intensity and Magnitude Scales for Famine*, Working Draft, (Institute of Development Studies, January 2004).

⁴Alex de Waal, New variant famine: hypothesis, evidence and implications, in the Humanitarian Practice Networks *Humanitarian Exchange Series* 23 (March 2003): 20-22.

⁵Alex de Waal and Alan Whitehead, New Variant Famine: AIDS and Food Crisis in Southern Africa, *The Lancet* 362 (2003): 1234-37.

⁶Howe

⁴ Jones
1994, *op. cit.*

what constitutes a famine, and the magnitude of the crisis, which can result in inappropriate responses such as an over-emphasis on food aid. Politically, stakeholders may contest the declaration of a famine to evade responsibilities to affected populations. Following the crisis, the lack of international consensus on what constitutes a famine undermines stakeholder accountability for actions (or inaction) during the famine emergency.

On June 11, 2002, USAID issued a background paper on famine. In this background paper, famine is defined as a catastrophic food crisis that results in widespread acute malnutrition and mass mortality with a beginning, a middle and an end. This definition was critiqued for overemphasizing the role of food and falling short of capturing:

determined and mortality indicators along with food security indicators. Using an intensity scale found in Table 3, a population areas within a country are assigned a combination level from 0 (food secure conditions) to 5 (extreme famine conditions). The intensity level provides a clear-cut way of capturing localized conditions at a certain point in time that can: 1) drive the appropriate intervention; 2) provide a means for monitoring situations; and, 3) allow stakeholders to prioritize resource allocations based on need. Magnitude is determined ex-post by measuring excess human mortality based on a scale from minor famine to catastrophic famine (see Table 3). The scales are not intended to replace early warning systems they complement early warning systems by registering intensity and magnitude. Early warning systems predict potential movements up or down the scales.

Synthesis Report on the Famine Forum

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Synthesis Report on the Famine Forum

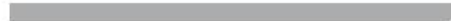
Table 2. Intensity Scale

Level	Phase designation	Malnutrition and mortality indicators	Food security descriptors
0	Food security conditions	CMR<0.2 AND Wasting<2.3%	Social system is cohesive; prices are stable; negligible use of coping strategies
1	Food insecurity conditions	CMR>=0.2 but < 0.5/10,000/day AND/OR Wasting>=2.3% but <10%	Social system remains cohesive; price instability and seasonal shortage of key items; reversible coping strategies start to fall (e.g., mild food rationing) are employed
2	Food crisis conditions	CMR>= .5 but <1/10,000/day AND/OR Wasting>=10% but <20%	Social system is significantly stressed but remains largely cohesive; dramatic rise in price of food; reversible coping strategies start to fail; increased adoption of irreversible coping strategies
3	Famine conditions	CMR>=1 but <5/10,000/day AND/OR Wasting =20% but < 40%	Clear signs of social breakdown appear; markets begin to close or collapse; coping strategies exhausted, survival strategies are more common; affected populations identify food as the dominant problem at the onset of the crisis
4	Severe famine conditions	CMR>=5 but < 15/10,000/day AND/OR Wasting >=40%	Widespread social breakdown; markets are closed or inaccessible to affected populations; survival strategies are widespread
5	Extreme famine conditions	CMR>15/10,000/day	Complete social breakdown; widespread mortality

These scales used together

Table 3. Magnitude Scale

These scales, used together, provide for a rising threshold for raising the term famine and lower the threshold of famine definitions currently used by donors and U.N. agencies. The famine scales also provide a framework for focusing more on prevention and less on famine response through broader consensus among stakeholders while ensuring accountability. Use of the famine scales by USAID should be considered to assist in linking early warning to response and recognizing a process of famine prior to the actual famine event.



2. Improving Institutional Capacity

Changes needed to increase USAID's institutional capacity in famine response are based on three assumptions: 1) famines result from failures in livelihood systems; 2) famine prevention is more cost effective than famine mitigation; and 3) USAID has a wealth of human resource capacity and institutional experience in famine response on which to draw. What is required is a broader, more coherent mandate for preventing famine at the Agency level (beyond DCHA) that includes: expanding responsibility and accountability for prevention throughout USAID;

Category	Phase Designation	Mortality range
A	Minor famine	0-999
B	Moderate famine	1,000-9,999
C	Major famine	10,000-99,999
D	Great famine	100,000-999,999
E	Catastrophic famine	1,000,000 and over

strengthening human resource capacity; promoting a climate of risk-taking; expanding response strategies to target vulnerable institutions, policies and processes; supporting recovery strategies in the post-famine period; greater resources targeting fragile states and famine prone countries; and, improving information systems.

The absence of effective institutions to mitigate the impacts of shocks such as climatic anomalies, violent conflict, and global economic shocks creates both the conditions that lead to famine and impede recovery from famine. Fragile states are, by definition, poorly governed and share characteristics including: inappropriate political control of macro-economic policies; lack of investment in health and education systems; absence of democratic institutions

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

USAID's Office of Food for Peace and Office of U.S. Foreign Disaster Assistance

to manage conflict; and, lack of investment (or deliberate neglect) in market infrastructure and other measures needed to build the resilience of livelihood systems.

These systemic problems thus far have been met by humanitarian response programs that emphasize project-based approaches, largely managed by NGOs operating in delimited geographic areas. The resulting gap between the systemic nature of vulnerability and the discrete project response has limited the effectiveness of U.S. famine prevention and response strategies. To improve the impartial nature of response (i.e., assistance provided according to the exact nature of vulnerability), USAID will need to improve its pro-active, anti-famine engagement with the flawed policies, institutions and processes underpinning famine vulnerability. This will require a form of engagement to promote anti-famine measures within technical line ministries (e.g. health, agriculture, water) in fragile states, as well as a level of humanitarian diplomacy to advocate for short-term favorable trade arrangements, for the promotion of humanitarian space in famine-prone conflict areas, and for anti-famine political contracts by host governments in famine-prone nations, for example.

In addition, famine prevention and mitigation requires a USAID-wide commitment of financial resources including development assistance (DA), international disaster and famine assistance (IDFA) and P.L. 480 Title II and human resources. There are critical gaps in USAID's human resource capacity for dealing with large-scale crises, both at headquarters and at the Mission level. Forum participants

3. Leveraging Resources

There exists an underlying assumption that when we talk about famine, we are talking about food. Indeed, P.L. 480 Title II food aid is the primary resource of the United States for responding to the critical food needs of affected populations during a food crisis. Food aid will remain a key resource for USAID's response to famine. Yet, a greater emphasis on famine prevention and approaching famine as systems failures requires more resources and better ways to use both food and non-food aid. Forum participants made three recommendations for leveraging USAID food and non-food aid for famine prevention and response.

First, concerning food aid, forum participants suggested that a portion of Title II emergency food aid be used for market and private sector development in support of the re-establishment of national food systems including commercial importation, markets and commodity marketing, and regional trade strategies. Monetization of emergency food can also provide cash resources to respond to the effects of collapsed market infrastructure, health systems, and agriculture. Leveraging emergency food aid beyond traditional consumption meets both the short-term relief needs of affected populations and begins to address the systems failures that led to the crisis.

Second, USAID requires an increase in funding and additional flexibility to ensure success in supporting a famine prevention agenda. This includes the increased

Advisors vision for a Humanitarian Backstop Office. In addition, there was wide agreement that training should be developed and implemented for Mission Directors who have little or no experience in dealing with humanitarian crises. Mission Directors, along with their staff, play a key role and need to be held accountable in this process.

Essential to strengthening human resource capacity is promoting an institutional culture of risk-taking within USAID. The forum participants envisioned a corps of humanitarian entrepreneurs who are empowered to develop innovative approaches to famine prevention and mitigation.

DA, Title II and IDFA resources with multi-year and predictable levels of funding. Moreover, fully sourcing the Famine Fund to US\$ 200 million is critical as is increasing the overall level of Title II and DA resources targeting famine-prone countries.

And third, USAID needs to leverage matching funds from non-governmental organizations (NGOs), private voluntary organizations (PVOs) and support assistance from various U.S. food industries through the Global Development Alliance (GDA) as well as solicit buy-in from recipient countries to press for greater political will in making systems changes (economic policy reform to reduce vulnerability, governance, health and livelihoods). The use of GDA to support and enhance the linkage between trade, aid and agriculture is another critical requirement.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Synthesis Report on the Famine Forum

4. Managing Relationships with Stakeholders

Humanitarian crises such as famine involve a broad array of international actors including: the host country government and its agencies; bilateral donors; multilateral donors; and implementing PVOs. There are four key areas for USAID to address: 1) the role of consensus within the international humanitarian community; 2) the U.S. governments policy on food aid vis--vis multilateral organizations; 3) the U.N.s capacity to respond; and 4) NGO and PVO implementing partners.

Once a famine is declared, there are norms that govern responsibility and accountability across the international community. In the absence of a universally-accepted definition of famine, however, humanitarian actors seek to build a consensus to coordinate response among the various stakeholders. Recent experiences in Southern Africa and Ethiopia, however, highlighted some of the weaknesses of consensus-building. In Southern Africa and Ethiopia, donors questioned the validity of host country governments declarations of famine, causing major

failed strategies and systems (economic, governance, healthcare and livelihoods) in famine-prone states to reduce vulnerability.

Last, although participants acknowledged the fact that they are not a replacement for governments and institutions, NGOs and PVOs play a critical role in disaster response. There is a need to diversify NGO and PVO implementing partners to improve effectiveness, leverage funding and heighten creativity for durable solutions.

5. Shifting to a Livelihoods Approach

There is a critical need to shift USAIDs project-driven approach to a systems approach that addresses the root causes of development failure. There was broad agreement across the forum that a livelihoods approach might best help USAID use resources during an emergency to move away from a food-first approach toward a broad, more complex definition of famine, emphasizing a multi-sectoral approach to drive an earlier and more appropriate response. A livelihoods approach can improve surveillance, monitoring information and assessments, and famine

delays in humanitarian response. U.S. government leadership needs to leverage its position as the lead donor to press for accountability and uphold standards for emergency response and famine prevention policies throughout the international humanitarian community including host country governments.

There was agreement among the participants that U.N. agencies have fallen short of fulfilling their mandate in responding to famine situations for example, citing UNICEF retreating from core commitments such as water and basic health. U.N. disaster management agencies need to undertake serious reforms including upholding standards of response and broadening the mandate of some of its agencies, such as the International Labor Organization (ILO) for emergency public works to prevent and ameliorate famines.

Further, forum participants recommended that the U.S. government expand the use of the G8 Famine Initiative beyond the present focus to include a broader United Nations, donor and partner NGO/ PVO famine prevention effort focused on addressing

prevention and response efforts.

Six principles central to a livelihoods strategy in crisis response include: 1) rigorous assessment; 2) appropriate market support; 3) protecting essential assets; 4) easing vulnerable peoples burdens; 5) timely interventions; and, 6) increasing protection for populations at risk of displacement. ⁷

These principles can guide USAIDs shift from a project-driven approach to a systems response that addresses the underlying causes of famine.

6. Conclusion: Priority Actions

These priority actions reflect the consensus that emerged from the two-day famine forum:

1. Integrate the new Agency position on famine prevention into the Fragile States Strategy and update the DCHA famine background paper dated June 11, 2002. This will include: lowering the catastrophic threshold and moving from a

⁷Sue Lautze, *Saving Lives and Livelihoods: The Fundamentals of a Livelihoods Strategy* (Feinstein International Famine Center, 1997).

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

USAIDs Office of Food for Peace and Office of U.S. Foreign Disaster Assistance

- food-first approach to a broader, more complex definition, emphasizing peoples livelihoods as well as a multi-sector approach to elicit an earlier and more appropriate response; and supporting the development and roll-out of a livelihoods toolkit that links strengthening livelihoods as part of a conflict reduction strategy.
2. Review the implications of the transformational development and fragile states divisions set forth in the White Paper to ensure necessary program integration among development assistance (DA), international disaster and famine assistance (IDFA) and P.L. 480 Title II.
 3. Informed by the processes described in point 2, clarify concomitant funding and programming flexibilities that will ensure success in supporting a famine prevention agenda. Because of the short-term view of disaster assistance and increasing emergency needs globally, USAID requires legislation to provide flexibility and longer-term commitment to support aggressive famine-prevention interventions.
 4. Develop integrated famine prevention strategies for famine-prone countries based on the Ethiopia Famine Prevention Framework model. Similarly, make famine
 7. Develop an education campaign aimed at the inter-agency level to increase and leverage U.S. government resources to better address famine-prevention in target countries linking the three-pronged approach of Defense, Diplomacy and Development from the National Security Strategy.
 8. Expand the use of the G8 Famine Initiative beyond the present focus to include a broader U.N., donor and partner NGO/PVO famine prevention effort focused on addressing failed strategies and systems (economic, governance, health and livelihoods) in famine-prone states to reduce vulnerability.
 9. Famine prevention requires accountability and reform among the myriad of stakeholders including the United Nations, donor countries and famine-prone states. U.S. government leadership in pressing for accountability and upholding standards for emergency response and famine prevention policies is essential to achieving reform.
 10. Finally, consensus was achieved on using the livelihoods context to broaden famine definitions, improve surveillance, monitoring information and

make famine response with multi-year predictable resource allocations, efficient and more

5. Strengthen human capacity for famine prevention program design and implementation, at USAID/ Washington and field level. This can be addressed through the implementation of the Administrators vision for the Humanitarian Backstop Officer and additional training for Mission Directors with little or no humanitarian experience. Build a corps of humanitarian entrepreneurs within USAID who are empowered to develop innovative approaches to famine prevention and mitigation.
6. Leverage matching funds from non-governmental organizations (NGOs), private voluntary organizations (PVOs) and support assistance from various U.S. industries (e.g., food multi-nationals) through the Global Development Alliance (GDA) as well as solicit buy-in from recipient countries to press for greater political will in making systems changes (governance, market, health, economic policy reform and reducing vulnerability). The use of GDA to support and enhance the linkage between trade, aid and agriculture is another critical requirement.

Synthesis Report on the Famine Forum

8

and response efforts.

and improve

famine prevention
The authors would like to thank Brian J. Bogart and Jahmal Sands of AMEX International for serving as rapporteurs at the forum.

This report was made possible through the support provided to the Food and Nutrition Technical Assistance (FANTA) Project by the Office of Health, Infectious Disease and Nutrition of the Bureau for Global Health, the Office of Food for Peace and the Office of U.S. Foreign Disaster Assistance of the Bureau for Democracy, Conflict and Humanitarian Assistance at the U.S. Agency for International Development, under terms of Cooperative Agreement No. HRN-A-00-98-00046-00 awarded to the Academy for Educational Development (AED). The opinions expressed herein are those of the authors and do not necessarily reflect the views of the U.S. Agency for International Development.

May 2004



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw
July 2004 Issue 22

ISSN 1743-5080 (print)

Field Exchange

Emergency Nutrition Network





Drought resistant banana in Ethiopia
Preventing micronutrient deficiency in Angola
Mapping vulnerability in Afghanistan



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

contents

- 3 **Field Articles**
- 3 Enset The False Banana as Food Security
- 12 Potential of Using QBmix to Prevent Micronutrient Deficiencies in Emergencies
- 20 Vulnerability Mapping in Urban Afghanistan
- 26 Infant Feeding Alternatives for HIV Positive Mothers in Kenya
- 5 **Research**
- Adequacy of Replacement Milks for Infants of HIV-Infected Mothers
- Grass Pea Consumption and Neurolethyrism
- Refugee Participation in Camp Health Services
- Starvation and Future Cardiovascular Disease
- Effect of Displacement on Growth of Children in Nigeria
- Investing in Nutrition to Reduce Poverty
- Dietary Assessment of Camp Refugees
- Impact of Dietary Zinc Supplementation on PEM
- Carbon Dioxide Production in Acutely

From the Editor

The more cynical amongst us in the emergency nutrition sector may sometimes be heard complaining that there is nothing new in this profession and that we just keep re-inventing the wheel - the problems are the same, as are the solutions. However, a cursory glance over this issue of Field Exchange gives lie to any such claim. There are plenty of new developments. For example, the piloting of a newly developed product called QBmix (a micronutrient rich condiment) by MSF amongst IDPs in Angola to help combat the endemic pellagra problem that has plagued this population for a number of years (see field article by Evelyn Depoortere). The study shows that QBmix may offer a cheaper, and logistically simpler, alternative to fortified CSB, as a means of preventing further outbreaks. There is also a field article in this issue about an indigenous crop grown in south and southwest Ethiopia - Enset (or false banana) and being promoted by the development agency Self Help International. The crop appears to have many potential uses which have a positive impact on food security. According to the author, there may be potential for promoting this local drought resistant crop in other food insecure areas of Ethiopia and for disseminating knowledge widely about its potential for reducing food insecurity. This issue also carries a summary of a study concerning the consumption of green peas in drought prone areas of Ethiopia. Consumption of this wild food, especially in drought periods, is associated with neurolethyrism (a neurodegenerative condition). However, the study shows that incidence is reduced when the affected population simultaneously consumes food aid in the form of cereal. The findings support the case for targeting food aid in these vulnerable areas, not just to the poorest, but

it appears that we have not reached a critical mass of evidence to effect change.

As editor of Field Exchange it is becoming increasingly difficult to leave out articles and research on HIV related issues. This issue of Field Exchange carries a field article on infant feeding practices amongst HIV positive mothers in Kenya, a summary of a review of the impact of HIV on crises and humanitarian work, and research on predisposing factors to malnutrition amongst HIV positive children in eastern Cape, South Africa. There is also a report on the AAH/Oxfam co-chaired meeting of the HIV, food security and livelihoods working group.

The multifaceted interface between HIV and nutrition is becoming increasingly recognised and reflected in HIV/nutrition programming, especially where the HIV pandemic is most pronounced, e.g. southern and Eastern Africa. There is a growing trend towards using food aid in much of this HIV programming. The use of food aid is being increasingly advocated, especially following emergency programmes under protracted relief and rehabilitation arrangements (PRROs). Food is therefore being incorporated into Prevention of Mother to Child Transmission programmes (PMTCT), Home Based Care (HBC), TB treatment (DOT), Orphan and Vulnerable Children programmes (OVC) and Neighbourhood Child Protection programmes (NCP). There appear to be multiple roles for food aid in these programmes with a variety of objectives proffered, e.g. nutritional, food security, incentive to comply with treatment, incentives for volunteers, protection, etc. However, there is often a lack of clarity over exit criteria, how food

- Agency
Children
Malnutrition
HIV/AIDS and Humanitarian
Action
Nutritional Status of HIV+
Pre-School Children in
South Africa
Taking forward research on
adult malnutrition
- 15 **News & Views**
Course on Saving Lives and
Livelihoods
WHO/TALC materials on the
Management of Severe
Malnutrition
Nutrition in emergencies
working group, SCN 2004
New Measuring Scoops for
F75 Therapeutic Milk
ECOWAS Nutrition Forum on
Nutrition and HIV
Equity in Donor Aid
Allocation to Iraq
Training in Public Health in
Emergencies
Update from Food Security,
Livelihoods & HIV/AIDS
Working Group
FAO/WHO Meeting Warn of
Contaminated Infant Formula
- 19 **Letters**
- 22 **Evaluation**
Lessons From SCUK
Evaluation in DRC
- 24 **Agency Profile**

also
this legume.
those
like there are also research findings reported in this
issue, which, although not entirely new, add to an
already considerable body of knowledge. For
example, a study of the longer term impact of the
siege and resulting famine in Leningrad during the
second world war shows that the legacy of starva-
tion is not just limited to growth impairment, but
also future cardio-vascular health. There is also a
study on ration adequacy amongst Thai refugees.
This shows, yet again, how poor ration quality for
food aid dependent refugees is directly responsible
for the high levels of stunting and micronutrient
deficiencies which have existed amongst this popu-
lation for a number of years The inadequacy of the
micronutrient content of home prepared replace-
ment milks as a breastmilk substitute an ongoing
concern of many in infant feeding circles - is high-
lighted in one summarised research piece by
Rollins et al in South Africa. In this setting, infant
formula is considered an appropriate and viable
option for feeding infants of HIV positive mothers.
However, a field article by Tom Oguta and his team
in Kenya finds that home-adapted animal milks
may be the preferred breastmilk substitute, and
only available option, for carers of infants whose
mothers are HIV positive. While current interna-
tional guidelines recommend fortification of home
prepared milk with micronutrients, in practice,
these are often not locally available.

Take any sample of Field Exchange and it is
apparent that there is a continuous stream of impor-
tant information and ideas provided by new re-
search and pilot interventions, which should, at least
theoretically, help inform better practice.
Unfortunately, much of this information never
finds its way into the published literature. In spite
of what cynics may say, there is still much we don't
know. Where we have good quality research there
is often a need to collate disparate research findings
into a sufficient body of coherent evidence to make
a case and advocate for change. Emergency ration
adequacy for refugees and findings like those from the

aid
will not light or attention as to how these programmes
will be monitored and evaluated. While there may
be a rationale for food aid in many of these
programmes, there is the very real danger that food
aid will be used uncritically with little attention given
to its impact. Furthermore, in some cases it may be
that food aid actually has a negative impact, e.g.
it undermines the volunteer ethos.

There is a long history of uncritical and ultima-
tely ineffective use of food aid in longer term nutri-
tion programming, e.g. supplementary feeding.
Some critics of current developments are already
implying that use of food aid in HIV programming
may be an attempt to introduce development food
aid (which has dwindled over the past three deca-
des) by the back door. It is essential, therefore, that
this relatively new area of programming is intro-
duced cautiously and based on pilot studies. Where
successful, interventions can be rolled out, provid-
ing monitoring and evaluation mechanisms are in
place. There can be no excuse for failing to apply
lessons from the past regarding the use of food aid
in longer term nutrition interventions to this new
era of HIV/AIDS and nutrition programming.

Finally, we enclose in this issue the first ENN
Special Supplement. This supplement, and subse-
quent ones that are planned, are meant to collate
cutting edge field experiences in rapidly develop-
ing subject areas. A letter written by one of the
authors in this issue of Field Exchange (Anna
Taylor), highlights why targeting is such an impor-
tant subject and where clarity is urgently needed.
The next ENN Special Supplement will be on
Community Based Therapeutic Feeding program-
mes.

We hope you enjoy this issue of Field Exchange.

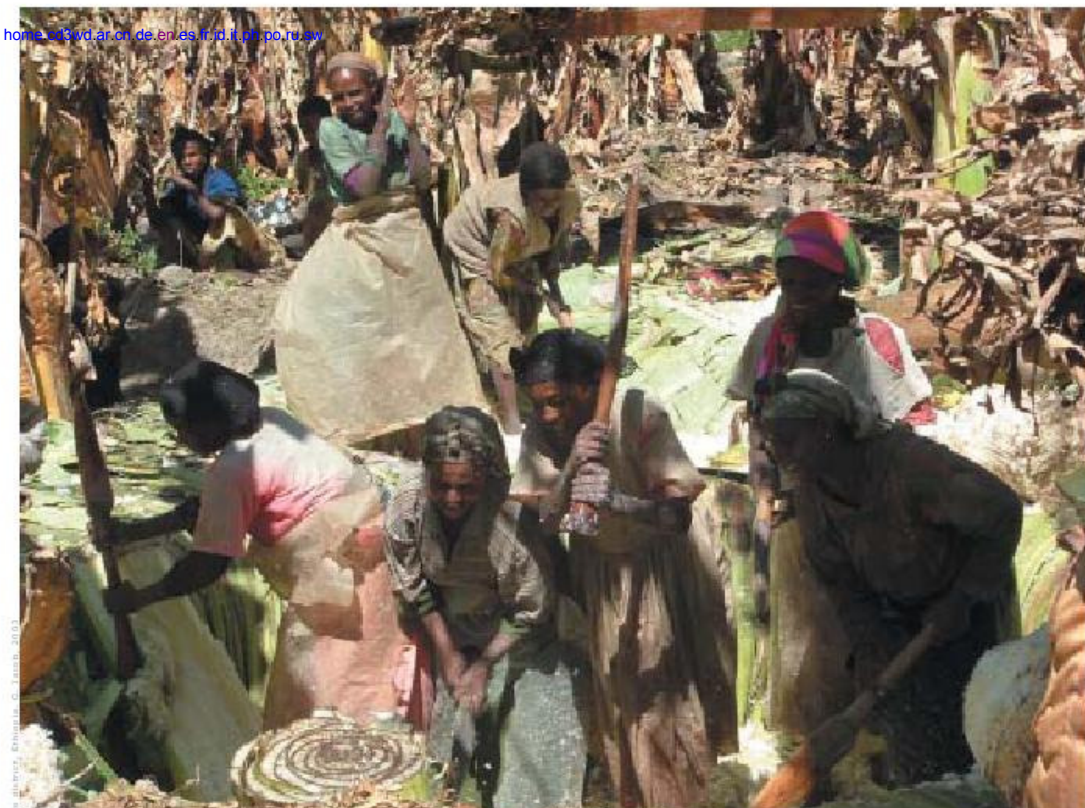
Jeremy Shoham

*Any contributions, ideas or topics for future issues
of Field Exchange. Contact the editorial team on
email.*

Nutriset
29 People in aid
2

ue
Thai
refugee
study
are
obvious
examples
where

.....
marie@enonline.net



Processing of Enset is usually a collective effort by local women

Enset The False Banana as Food Security

By George Jacob



George Jacob is communications officer with Self Help Development International. Previously he worked as a journalist, sub-editor and news editor with an Irish newspaper group, before joining Self Help in 2003.

The contributions and work of Self Help staff, Hailu Gebre Marium (Project Director, Sodo, Ethiopia), Mesay Kassaye (Project Director, Dodota, Ethiopia) and Workicho Jatano (Planning Officer, Ethiopia) are gratefully acknowledged.

This article describes Self Help Development Internationals experiences of using the staple crop, Enset, in their programming in Ethiopia, and the potential it holds for improving food security in drought affected areas.

Self Help Development International has gone a significant distance towards assisting tens of thousands of Ethiopian farmers to achieving food security, since they began promoting the introduction of the resourceful Enset plant in their project areas in the countrys southern region. Although the dull, grey coloured bread or porridge produced from the fermented plant can be stodgy and unpalatable to western tastes, Enset has been having a far-reaching impact on the lives of rural Ethiopians for generations. Prompted by

drought resistant crops to promote, and identified Enset as an option. Research into the crop showed that its high moisture carrying capacity and resulting durability meant it could help to ensure food security in drought prone areas.

Enset what is it.

Also known as "false banana" due to its striking resemblance to the banana plant, Enset (*Ensete Scitamineae*) is a traditional staple crop in many parts of densely populated south and south-western Ethiopia. Records suggest that Enset has been grown in Ethiopia for more than 10,000 years. Indigenous hunter/gatherers of southern Ethiopia are thought to have been the first to cultivate Enset, and later introduced it to the Cushitic-speaking people of the northern highlands, only for it to be replaced by cereal-based crops due to the migration of the Semitic people. Enset is virtually unknown as a foodstuff outside Ethiopia and in western countries, variants are often grown as ornamental garden plants. The root of the plant provides food in the form of starch, the stem is used to produce a coarse fibre, and the leaves are fed to cattle, whose manure is in turn used to fertilise the plant. Although Enset is a protein-poor crop, its deep roots give it a greater resilience to drought than other cereal crops and consequently, a greater degree of food security to those who grow it.

Development workers have found that there are other significant benefits too, not least of

Enset cultivation is minimal. In fact, in Enset plantation areas, native soil has been altered for the better due to the long-term application of manure, natural mulching of leaf and stem residues, the rainfall capture from the plant leaves, and the resulting soil moisture conservation and reduced run-off when compared to bare-earth farming. Enset plants, which are traditionally grown in small plantations adjacent to homesteads, can grow to a height of six metres, and thus provide valuable windbreaks and shade from direct sunlight. Because of its large leafy fronds, it is also a good plant to inter-crop with coffee, potato and other food crops, which benefit from shady growing conditions.

The major food products obtained from the Enset plant are kocho, bulla and amicho, all of which are simple to produce once the plant is harvested, and can be stored for long periods without spoiling. Kocho is a bulky, chewy, fermented starch bread which is made from a mixture of the decorticated leaf sheaths and grated root. Combined with Ethiopias spicy kitfo minced meat, it is now a required dish in virtually all restaurants in the country Addis Ababa included. The best quality Enset food is bulla, obtained mainly from fully matured plants. Bulla can be prepared as a pancake, porridge and dumpling. Amicho is the boiled Enset root. The root is boiled and consumed in a manner similar to that of other root and tuber crops.

uneven and erratic rainfall in
Semi-arid to search for alternative

which is the contribution of the Enset plant to
sustainable farming. Soil erosion as a result of

Use
of In order to introduce the crop to the new
Enset
in
programming

3



Manual processing using traditional bladed wooden instruments

areas, Self Help established demonstration plots on a small scale, in conjunction with Ethiopias Agricultural Research Institute in the Marako, Sodo and Dodota project areas. Over a period, the crop performance was monitored and assessed. Farmers in the locality were given the opportunity to visit demonstration sites and see for themselves the potential of Enset and its many uses. Following these initial demonstrations, contact farmers from amongst those interested were selected. These farmers were provided with the necessary seed stock, along with practical training on the growth of Enset in their region. Their plots, in turn, became demonstration sites visited by farmers in

Although it is estimated that there are currently upwards of 10 million people in southern Ethiopia consuming Enset in their diet, there are historic and cultural reasons why others in the country do not. During the reign of Emperor Haile Selassie (1930-1975), the Ethiopian Ministry of Agriculture launched major initiatives to increase food production.

The emperor gave strict instructions to focus on cereal crops and income-generating crops, such as coffee, while the Enset plant was ignored. The situation for Enset did not improve under the subsequent Socialist Derg regime (1975-1991), whose research projects had insufficient funds, and

Field Article

The future of Enset

There is a concern in Ethiopia that stocks of Enset have been depleted. In many parts of the country, it seems that the Enset plantations have not recovered from the harvesting of young immature plants which occurred during the 1980s, when hundreds of thousands of people from northern Ethiopia were displaced to the south of the country and required Enset for their very survival. However, according to Self Helps African director, Dr. Awole Mela, Enset has, on balance, been hugely valuable to their sustainable rural development work in Southern Ethiopia. Not only has it given rural households a greater level of food security, it has provided valuable shade for the growing of other crops, and has also helped to reverse soil degradation in otherwise vulnerable areas. Upwards of 80,000 farmers in this project area are now successfully growing the crop.

A 1997 publication, produced by the American Association for the Advancement of Science, in collaboration with the Awassa Agricultural Research Centre "The Tree Against Hunger," has done much to raise awareness of the potential and future prospects of Enset, both in Ethiopia and elsewhere. In the same year as this was published, the Ethiopian government formally recognised the importance of the crop to the people of Southern Ethiopia, and declared Enset a national crop worthy of significant research and development funding.

For further details, contact: George Jacob, Self Help Development International, Hacketstown, Co. Carlow, Ireland.
Tel: +353 (0)59 6471175, Fax: +353 (0)59 6471292,
email: george@selfhelp.ie

... was started by farmers in the high proportion of seedlings was made available via contact farmers, as a way of getting their interested neighbour started with the crop. Revolving seed fund mechanisms of this kind are a feature of many of Self Helps agricultural development activities.

Constraints

There have been obstacles facing those engaged in promoting the propagation of Enset, the most fundamental being it takes three to five years for the plant to achieve maturity. While a five year old plant can yield 40 kg of food, farmers who harvest after a single year can expect a yield of just one kg from the pseudostem the bowl of the tree which is processed for food.

Enset crops shading coffee plants



... did notThere have been cultural barriers to the popularity of Enset too. Many urban Ethiopians regard a crop, which is used by southerners for everything from food, bedding and clothing to house building and fodder, as little more than a peasant food.

A number of factors have acted to change this perception, however, and market forces - which have seen the price of Enset remain stable while cereal grain prices have climbed - has been a significant one. Not to be under-estimated, either, has been the realisation that famine can, and has been, averted at times of drought, in areas where the Enset crop is being grown and processed by rural communities.

web:
<http://www.selfhelp.ie>



Self Help Development Agency is an Irish-based development agency, involved in the implementation of long-term development projects in Africa. The agency has field offices in Ethiopia, Malawi, Eritrea, Kenya and Uganda.



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Research

Adequacy of Replacement Milks for Infants of HIV-Infected Mothers

Summary of published research ¹

Feeding recommendations for infants of infected HIV-mothers in developing countries remain controversial. As HIV can be transmitted to the infant by breastfeeding, the World Health Organisation (WHO) recommends that, when replacement milk is acceptable, feasible, affordable, sustainable and safe, avoidance of all breastfeeding by HIV-infected mothers is recommended; otherwise, exclusive breastfeeding is recommended during the first six months of life ². However, little is known about the nutritional adequacy and feasibility of the various breastmilk replacement options recommended in related training materials ³. A recent study aimed to explore suitability of the 2001 feeding recommendations for infants of HIV-infected mothers in a rural region in KwaZulu Natal, South Africa, especially with respect to adequacy of micronutrients and essential fatty acids, cost, and preparation times of replacement milks.

Nutritional adequacy, cost, and preparation time of home-prepared replacement milks containing powdered full cream milk (PM) and fresh full cream milk (FM) and different micronutrient supplements (2 g UNICEF micronutrient sachet, government supplement routinely available in district public health clinics, and best available liquid paediatric supplement found in local pharmacies) were compared. The costs of locally available ingredients for replacement milk were used to calculate monthly costs for

ingredients of commercial and home-prepared replacement milks were compared with each other, and considered in the context of the average monthly income of domestic or shop workers. The time needed to prepare one feed of replacement milk was simulated by local HIV and infant training course participants for a rural homestead, without electricity, gas or water but close to a stream and shrubs (1-2 minutes walk away).

When mixed with water, sugar and each micronutrient supplement, PM and FM provided less than half (50%) of the required amounts of vitamins E and C, folic acid, iodine, and selenium and less than 75% of zinc and pantothenic acid. PM and FM made with UNICEF micronutrient sachets provided 30% of the required intake for niacin. FM prepared with any micronutrient supplement provided no more than 32% vitamin D. All PMs provided more than adequate amounts of vitamin D. Compared with the commercial formula, PM and FM provided 860% of vitamins A, E, and C, folic acid, manganese, zinc, and iodine. Preparations of PM and FM provided 11% of the minimum recommended intake of linoleic acid and 67% of the minimum recommended α -linolenic acid, per 450 ml mixture.

It took 2125 minutes to prepare optimally 120 ml of replacement feed from PM or commercial infant formula and 3035 minutes for the fresh milk preparation. For an infant requiring 6-8

day to prepare replacement milks, without taking into account time taken to feed the infant. PM or FM costs approximately 20% of monthly income averaged over the first six months of life and commercial formula cost approximately 32%.

The authors conclude that no home-prepared replacement milks in South Africa meet all estimated micronutrient and essential fatty acid requirements of infants aged under 6 months. Commercial infant formula is the only replacement milk that meets all nutritional needs. The authors suggest that revision of replacement milk options given in WHO/UNAIDS/UNICEF HIV and infant feeding training course materials are needed. If replacement milks are to provide total nutrition, preparations should include vegetable oils, such as soybean oil, as a source of linoleic and α -linolenic acids, and additional vitamins and minerals.

¹ P.C. Papatheakis, N.C. Rollins. Are WHO/UNAIDS/UNICEF-recommended replacement milks for infants of HIV-infected mothers appropriate in the South African context. Bulletin of the World Health Organization, March 2004, 82 (3), pp164-171

² World Health Organisation. New data on the prevention of mother-to-child transmission of HIV and their policy implications: conclusions and recommendations. WHO Technical Consultation on behalf of the UNFPA/ UNICEF/WHO/UNAIDS Interagency Task Team on Mother-to-Child Transmission of HIV. Geneva: World Health Organization; 2001. WHO document WHO/RHR/01.28.

³ WHO, UNAIDS, UNICEF. HIV and infant feeding course-

to calculate monthly costs for
infants and children. Total monthly costs of

feeds
per
day,

a
caregiver
would
need
2.5
hours
per



Field of green pea grown in Ethiopia

Lathyrism patient in Ethiopia

Summary of published paper ¹

Neurolathyrism is a neurodegenerative and irreversible spastic paraparesis that can be crippling and lead to complete dependency. This disorder can be caused by excessive consumption of the drought resistant pulse, grass pea (*Lathyrus sativus*)². All major famines and chronic food shortages in Ethiopia from the mid-1970s onwards have been accompanied by reports of neurolathyrism epidemics. A recent research study examined whether addition of food-aid cereals to grass pea foods reduced the risk of neurolathyrism during severe famines.

During the epidemic in Ethiopia between 1995 and 1999, a neurolathyrism surveillance system was set up in Delanta Dawint, one of the most affected districts. The research team conducted a correlational study of the amount of food aid that reached the population. They also compared, in a retrospective case control study, the types of grass pea preparations and cereal mixtures consumed by all people who developed the condition (identified through the surveillance system) and by controls in Asim Elana, a

village. The amount of cereal food aid added to grass-pea foods was obtained from the female household member who prepared food. This information was collected for six months before the first detected case, and until the end of the epidemic. The enumerators classified the proportion of food aid cereal to grass pea as at least one third or less than one third. Spearman's correlation coefficient was calculated to assess the association between the incidence of neurolathyrism and the amount of cereal food aid distributed.

Between September 1995 and December 31st 2000, a total of 2035 new cases of the condition were detected in Delanta Dawint district (period prevalence of 12.3 per 1000). There was a significant negative correlation between new cases per 1000 and the per-person amount of food aid distributed. The food aid mainly consisted of wheat and maize, with limited supplementary rations of vegetable oil. However, delivery became irregular and delayed and the amount of food aid fell, which coincided with the peak of the epidemic in 1997 when 1454 new cases were reported.

ing; a training course. Geneva: WHO/UNAIDS/UNICEF; 2000. WHO document WHO/FCH/CAH/00.24

form was associated with an increased risk of neurolathyrism, whereas no raised risk was noted for the fermented pancake, unleavened bread and gravy preparations. Cereals are sometimes mixed with grass pea in the boiled, fermented pancake and unleavened bread forms. Use of cereal and grass-pea flour mixtures for these preparations reduced the risk of paralysis if they contained more than a third cereal. The addition of wheat and maize to grass-pea preparations could compensate for the deficiency of methionine and cysteine, as well as diluting the concentration of toxin.

Susceptibility to neurolathyrism varies among individuals and communities, and an increased risk of paralysis is associated with the male sex and young age. The study controlled for the effects of age and sex in the logistic regression analysis, but was unable to control perfectly for socioeconomic variables and interfering acute-illness episodes.

The study authors highlighted how reports were showing that only grass pea was resisting the current drought in most neurolathyrism prone areas, and that the population is increasingly relying on this pulse. The authors concluded that food aid should therefore not be restricted to the almost starving, but should also be urgently sent to people in neurolathyrism prone areas before they are forced into exclusive grass-pea consumption. Dietary information, education and communication on safe grass-pea preparations are also needed.

¹ Getahun, H, Lambien F, Vanhooime M, Van Der Stuyft P (2003). Food-aid cereals to reduce neurolathyrism related to grass-pea preparations during famine. *The Lancet*, vol 362, Nov 2003, pp 1808-1810. Full text available free online at: <http://www.thelancet.com/journal/vol362/iss9398/>

² Increased muscle tone leading to weakness of both lower limbs
The clinical symptoms of neurolathyrism are identical to those

severely hit village.

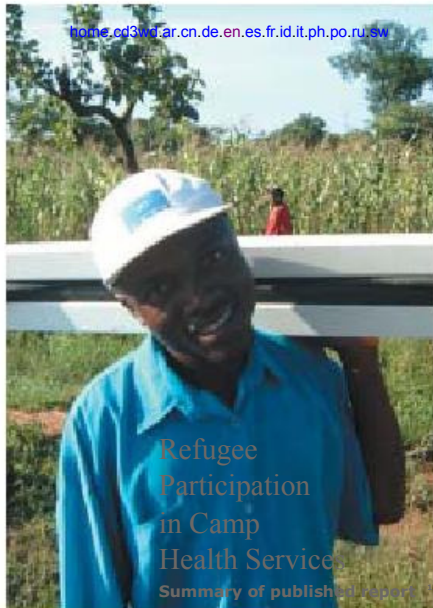
Information on the proportion and type of cere-

In the case control study, the consumption of
grass pea in roasted, boiled and raw, unripe seed

consumption of insufficiently treated cassava (*Manihot
esculenta*). See Field Exchange 16, Suspected toxic inges-
tion outbreak in central Afghanistan, pp7-9, August 2002

causing
disease
caused
by
over
-

5



home.cd3wddvd.ar.cn.de.en.es.fr.it.id.it.ph.po.ru.sw

Refugee Participation in Camp Health Services
Summary of published reports

Health Information Team member working in Tanzania

In nutritional emergencies, where selective feeding programmes may be established by international humanitarian agencies, there has been very little study of beneficiary participation. A recent study on participation in health services in refugee camps may contribute valuable lessons for the emergency nutrition

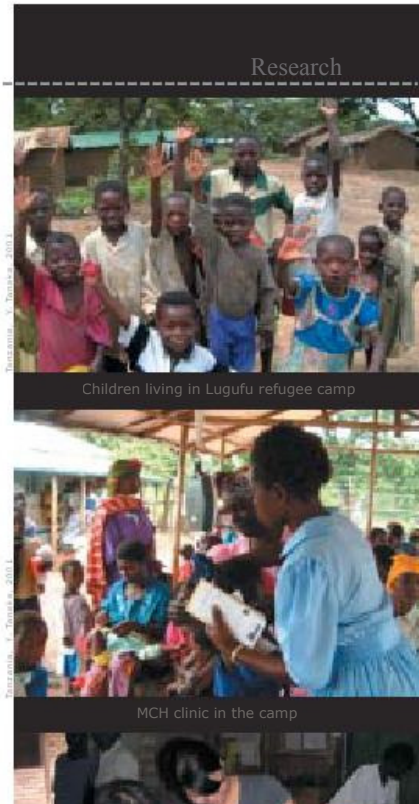
people performing tasks defined by professionals.

The study was performed at Lugufu camp in Tanzania where a HIT of Congolese refugees actively participated in health services. The Congolese HIT, which was established in 1997 in the camp, works under the supervision of health staff of the Tanzanian Red Cross Society. Structured questionnaires were used for this cross-sectional observational study, covering three types of respondents, i.e. systematically selected refugee community members, all HIT members and all Tanzanian health staff in charge of preventive health. Additional information was also collected through focus group discussions.

The study found that refugees used their own health initiatives, which resulted in a growth of self-confidence. There was evidence of benefits, especially in promoting health education (learning how to prevent illness and how to treat mild diarrhoea). However, refugee community members who did not know any HIT members had less positive health seeking behaviours than those who knew one or more HIT members, thus showing a need for further dissemination of HIT services.

The overall success of the programme can be attributed to a number of factors,

- An increase in health related staff who reached out to the wider refugee community - 92% of refugees knew at least one HIT member.
- The professional background of the HIT members in their home countries (nurses,



Research



Children living in Lugufu refugee camp



MCH clinic in the camp



A study reported in Public Health examined refugee participation in health services in Tanzanian refugee camps. Participation was understood as a process whereby Health Information Team (HIT) members, as agents of the refugee community, actively pursue identification of health needs, make decisions and assume responsibility to meet these needs, in order to strengthen the capacity of the refugee community to improve their health. This type of approach contrasts with the more usual top down approach used in humanitarian emergencies by relief agencies, in which community participation is seen as

health education, gaining refugee confidence and convincing them to take their advice. The HIT members communicated effectively with the refugees. Over three quarters of the refugees replied that the HIT listened to their health needs well, and that they felt relieved after talking to HIT members. HIT members had the advantage of sharing the same cultural background as their refugee peer community.

¹ Tanaka Y et al (2004). Refugee participation in health relief services during the post-emergency phase in Tanzania. Public Health, vol 118, pp 50-61



Delegates from the Tanzanian Red Cross visiting Lugufu refugee camp

Starvation and Future Cardiovascular Disease

Summary of published paper ¹

The Leningrad siege occurred during the Second World War, as German troops prevented supplies reaching the city from 8th of Sep 1941 to January 27th 1944. If rations were received in full, which was not always the case, the population received about 460 calories per day (mostly bread, oil and sugar) with virtually no protein. Out of a population of 2.9 million, 630,000 died from hunger related causes, most during the winter of 1941-2. A recent study examined whether the siege increased risk of mortality, particularly from cardiovascular disease in subsequent years.

As part of the 1973 US-Soviet collaborative programme, data were collected for a lipid research programme. This involved a baseline survey undertaken in Leningrad between 1975-7 in which 5000 men, born between 1916-35, were randomly selected in

ments, e.g. blood pressure, cholesterol concentration and cardiovascular dysfunction. Nearly a third of those surveyed had lived in Leningrad during the siege, which meant that they likely spent the whole siege period there since most people were unable to leave.

Analysis of the data showed a significant excess risk of high systolic and diastolic blood pressure in men who lived through the siege. Those who were around the age of puberty (9-15 years) at the peak of starvation (January 1942) were especially prone to high systolic blood pressure (odds ratio 1.56, 95% confidence interval 1.21 to 2.02), with a mean excess of 3.3 mm Hg. Except for a tendency to have a greater skinfold thickness, all other indicators of cardiovascular risk were remarkably similar for those exposed and non-exposed to the siege.

During the follow up, 2048 out of the remaining sample of 3905 men died. Cardiovascular disease accounted for 1050 deaths (51%), 662 from ischaemic heart disease and 333 from stroke, 97 of which were haemorrhagic. The excess risk of dying for those who experienced the siege was 21% (relative risk 1.21, 1.20-1.32). The excess risk

1.39 (1.07-1.79). The effects of starvation around puberty were stronger still for stroke (167, 1.15-2.43), including haemorrhagic stroke (1.71, 0.9-3.22). For stroke, but not for other mortality, the siege effect was significantly stronger for those who experienced it around puberty than at other ages.

Lifestyle and socio-economic circumstances did not confound the association between cardiovascular mortality and siege exposure. It appears that critical stages in the process of regulating blood pressure may occur during puberty and that starvation may cause permanent disruption of blood pressure regulation. Other potential mediating factors (for example endocrine changes) were not measured, and thus these conclusions remain hypothetical. The nutritional component of starvation is also entangled with the trauma of the siege.

The study does, however, indicate that puberty may be a highly vulnerable period and that starvation in puberty today may have implications for future cardiovascular disease in many developing countries.

Retrospective data from the Leningrad district. Data on economic factors, anthropometric measures and biological measure-

0.8% (1.28, 1.08-1.51). Among those aged 9-15 dying at the peak of starvation, this estimate was

Shpanen, starvation during the siege of Leningrad: prospective cohort study. BMJ volume 328, 3rd January 2004, pp 11-14

6

from ischaemic heart disease was

(2004) Long term mortality after severe

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Research

Effect of Displacement on Growth of Children in Nigeria

Summary of published paper ¹

A recent religious/ethnic conflict in northern Nigeria provided a rare opportunity to investigate the effects of displacement on the growth and body composition of the children of families that were forced to migrate. In September 2001, the Fulani population inhabiting the Jos Plateau of Nigeria was attacked, forcing most of those who had survived, including the children, to migrate to temporary camps located about 40 km east of the city of Jos. This study was possible as one month before the conflict, a team had conducted a comprehensive anthropometric analysis of the same Fulani children who were displaced by the crisis. The Fulani of northern Nigeria, and the Jos Plateau in particular, are semi-nomadic pastoralists whose culture and economy are centred around cattle. They are physically very active, consume a diet rich in dairy products and generally abstain from alcohol and tobacco.

In the pre-conflict study, bioelectrical impedance analysis, as well as standard anthropometric techniques, had been used to investigate the growth and body composition characteristics of 340 Fulani children aged 1-18 years. In April 2002, the study team located 30 of these same children, and re-measured height, weight, body fat and lean body tissue. In addition, the team used bioelectrical impedance analysis (BIA) to

information regarding the vitality and integrity of cellular membranes ².

Seventeen males and 13 females, between the ages of 4-13 years, were included in the study. In terms of mean values and relative to growth curves established during the tranquil period immediately preceding the crisis, all but one of the girls grew taller and gained more weight than predicted - two-thirds of the weight gained by the girls was due to fat. While the male subjects, on average, grew taller, they gained 30 percent less in height than predicted. However, the boys did gain 50 percent more weight than predicted. Unexpectedly, fat accounted for one-half or more of the weight gain in both the boys and girls. An explanation for the unanticipated high proportion of fat in the weight gain may lie in the fact that caloric expenditure was reduced relative to what it had been pre-crisis, due to the confinement and reduced activity level. Another explanation is that the diet was adequate in terms of calories but unbalanced in terms of essential nutrients, such as protein.

In general, the boys did less well than the girls in the months following the crisis. This might be explained by the fact that girls spent more time close to their mothers, who were responsible for cooking and distribution of food in the camp.

In general, from the nutritional perspective, the Fulani children coped relatively well during the seven-month period of displacement. The fact that neither the growth nor body composition of the Fulani children deteriorated significantly following the crisis was attributed to the fact that during that period, they were receiving adequate and continuous supplies of food.

Within 3 or 4 days of being displaced, the children were receiving food from several sources including grain from the federal government, as well as milk, cheese and butter fat from the cattle that had been recovered in the days and weeks following the crisis. Furthermore, the displacement camp into which the children and their families migrated was located in a secure region of the country and one that was controlled by people whose culture and ethnicity were similar to theirs. This minimised the psychological stress usually associated with displacement. Finally, at no time during their seven months as a displaced population were the children separated from their mothers. In conclusion, this study shows that displacement, in general, may not necessarily lead to deleterious effects on the growth of children.

¹ Glew R, Bhanji A and VanderJagt D (2003). Effects of displacement resulting from ethnic/religious conflict on the

compare the phase angle of displacement and after seven months of living in a displacement camp. The phase angle is foremost an indicator of an individuals overall nutritional status, and is thought to provide

more active and spent considerable time tending goats and cattle. The phase angle of all subjects did not decline significantly during the pre- and post-crisis interval.

grown
Nigeria. Journal of Tropical Paediatrics, vol 49, no 5, pp 285-288
The phase angle is calculated as the angular transformation of the arc-tangent of the ration of reactance to resistance and is obtained by bioelectrical impedance analysis.
children
in
northern

Investing in Nutrition to Reduce Poverty

Summary of published research ¹

Sierra Leone suffers from endemic and pervasive poverty due to long periods of economic decline and mismanagement. The 10-year civil war has further exacerbated the depth and severity of poverty. As a result, malnutrition rates are among the highest in the world. However, policy makers do not always recognise the fight against malnutrition as a priority to ensure the healthy human capital needed to fight poverty and achieve sustained, positive economic growth. In view of this, the Ministry of Health and Sanitation in Sierra Leone, with technical support from Helen Keller International and UNICEF, organised a two week workshop on nutrition policy analysis and advocacy. The analysis was conducted by an intersectoral and inter-agency group of Sierra Leonean senior policy advisors representing a large number of government ministries. The analysis covered the period from 2002 to 2006, the five years following the democratic elections that took place in May 2002. The objective of the analysis was to quantify both the consequences of malnutrition on human capital and productivity, and the potential benefits of improved policies and programme to reduce malnutrition.

the single greatest cause of child mortality in the country. In the absence of adequate policy and programme action, malnutrition will be the underlying cause of an estimated 74,000 child deaths over the next five years. The analysis also revealed that if current levels of iodine deficiency remain unchanged over the same period, 252,000 children could be born with varying degrees of mental retardation as a result of intrauterine iodine deficiency. Finally, the analysis showed that in the absence of adequate policy and programme action to reduce the unacceptable rates of anaemia in women, the monetary value of agricultural productivity losses associated with anaemia in the female labour force over the next five years will exceed \$94.5 million.

A main conclusion of the work was that sustained investment in nutrition in Sierra Leone could bring about enormous human and economic benefits to develop the social sector, revitalise the economy, and attain the poverty reduction towards which Sierra Leone is striving towards.



A malnourished child in a therapeutic feeding centre in Kenema

The analysis revealed that 46% of child deaths in Sierra Leone are attributable to malnutrition,

Aguiayo
investing in nutrition to reduce poverty: a call for action.
Public Health Nutrition; 6 (7), pp 653-657



and
Ross
J
(2003),
Sierra
Leone



home.cd3wddvd.ar.ch.ig.30.es.fr.id.it.ph.pp.ru.sw

Research

Dietary Assessment of Camp Refugees

Summary of published research ¹

Mother breastfeeding twins in Mae La camp

Mae La camp where the study took place

Thailand. O. Banjanon, 2001

Approximately 140,000 refugees from Burma (Myanmar) live in ten camps along the Thailand-Burma border.

They receive basic food and relief assistance from the Burmese Border Consortium (BBC), as well as a variety of health and education services provided by various non-governmental organisations (NGOs). The food basket provided by the BBC is meant for short-term survival and it is assumed that refugees living in camps for an extended period should be able to supplement the food basket through some form of subsistence activity. The BBC's basic food basket includes rice, split yellow hulled mung beans, fermented fish, soybean oil, dried chillies and iodised salt, and averages 2200 kcal per person per day (children under five receive half the amount of rice, beans and oil).

economic, food consumption, and dietary intake patterns. Foods consumed were weighed and measured using a 24-hour recall for the household unit and nutritional status was determined using scales and a measuring tape. In total, 182 households containing 1,159 people were surveyed.

The main findings included:

Average household energy and protein intakes were 96.6% and 111.4% respectively, of the recommended daily allowance (RDA) for healthy Thais.

Twelve percent of protein was derived from animal sources. Carbohydrate, protein and fat accounted for 84%, 9% and 7% respectively, of total energy. The intake of vitamins A, B1, B2 and C and of calcium ranged from 24.2% to

wounds, 7.6% had scars from previously active wounds, 9.2% had pale eyelids and 3.6% had pale fingernails. Among 7-13 year old children who were examined for goiter, 2% had grade 1 goitre.

The study concluded that although the refugees were able to procure some non-ration foods by foraging, planting trees and vegetables, raising animals and purchasing and exchanging ration foods for other items, the quantity and quality of these foods were not sufficient to compensate for the nutrients that were low or lacking in the ration. This contributed to a high prevalence of underweight and stunting. The pattern of stunting in children under 18 years reflects the long-term insufficiency of essential nutrients necessary for optimal skeletal development.

A recent study set out to determine how the BBC ration is used, the ability of households to supplement the food basket, and the nutritional status of the refugees. The study was meant to provide information to assist BBC and other organisations in identifying appropriate amounts and types of food for long-term refugee situations.

The site for the study was Mae La Camp in Tak province on the northern border between Thailand and Burma. The camp has been in existence since 1995 and is home to close to 40,000 refugees. Space and water are very limited within the confines of the camp. Some residents find day labour in neighbouring farms, although the movement of refugees in and out of the camp is increasingly restricted by Thai border officials. Households established for one or more years with children under 15 years of age were sampled. A questionnaire was used to determine

Among children under five, one-third (33.7%) were underweight, 36.4% were stunted and 18.9% were wasted. This compared unfavourably with Thai children under five from a reported NCHS survey in 1996 where just under one-fifth (18.6%) were underweight, 16% stunted and 5.9% wasted.

Among older children, 41.2% of those aged 5-9.9 years, 31.5% of those aged 10-13.9 years and 19.9% of those aged 14-17.9 years were underweight. Over half (61.6%) of those aged 5-9.9 years, 51.6% of those aged 10-13.9 years and 51.5% of those aged 14-17.9 years were stunted.

Among a sample of 345 adults, 18.8% were thin (Body Mass Index (BMI) 18.5-19.9) and 7.2% were very thin (BMI < 18.5).

Examination for clinical signs of micronutrient deficiency found that among children up to 13 years, none had Bitots spots, 5% had active angular stomatitis

children aged 2-5 years was two to three times higher than that among children under the age of 14. This might be explained by the excellent rates of breastfeeding in the postpartum period, so that infants have a steady supply of essential nutrients among

In response to these findings, the BBC is considering implementing a series of options to address the high proportion of carbohydrate and low proportion of animal protein and fat in the diet, as well as to improve the micronutrient balance in the diet. The options include implementing a comprehensive plan to support gardens and animal husbandry, fortifying or providing fortified foods in the food basket, and initiating nutrition education via existing community health workers and teachers.

¹ Banjong O et al (2003). Dietary assessment of refugees living in camps: A case study of Mae La Camp, Thailand. Food and Nutrition Bulletin, vol 24, no 4, pp 360-367

Impact of Dietary Zinc Supplementation on PEM

Summary of published research

Zinc deficiency is one of several trace element deficiencies that may play a pivotal role in the development of Protein Energy Malnutrition (PEM). A number of indicators can be used to identify geographical areas where zinc deficiency may be a problem:

Staple foods are high in phytate and/or low in zinc and/or high in calcium
The consumption of zinc dense foods (particularly meat) is low

children < 5 years of age)

There is a heavy burden of infectious disease
There is a high prevalence of iron deficiency
Many of these indicators can be found in Lesotho. Consequently, the aim of a recent study was to examine the impact of zinc supplementation in the management of children with PEM, aged 6 months to 5 years, in Lesotho.

In a randomised controlled double blind clinical trial, supplementation with 10 mg of elemental zinc as zinc sulphate was evaluated in the management of PEM. A total of 300 Basotho children aged 6-60 months (150 children in each group) admitted to the Queen Elizabeth 11 hospital, Maseru, Lesotho were included in the study. Supplementation and follow up were conducted for three months post-discharge from the hospital.

Mortality during hospitalisation was significantly lower in the zinc supplemented group (4.7%)

months follow up. In the zinc supplemented group, 58 percent of the children were above the 80th percentile of expected weight-for-age three months after discharge, compared with 27.6% in the control group. Dietary zinc supplementation resulted in a significant reduction in diarrhoeal disease, respiratory morbidity, and episodes of clinical anaemia, skin infections and fever, as well as vomiting, in children with PEM. These findings suggest that interventions to improve zinc intake in their management may be of benefit to Basotho children in Lesotho with PEM.

The authors of the study conclude that although zinc deficiency may not be a feature of malnutrition on presentation, failure to provide sufficient zinc may well delay convalescence and even limit the rate of growth in these children.

¹ Makonnen B, Venter A and Joubert G (2003), A randomised controlled study of the impact of dietary zinc supplementation

There is a high prevalence of children with weight-for-age for

group. The prevalence of morbidity was significantly higher in the control group at 1, 2 and 3

energy malnutrition in Lesotho. I: Mortality and morbidity. *Journal of Tropical Paediatrics*, vol 49, no 6, pp 340-351

8

16.7%
in
the
control

of
children
with
protein
-

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Research

Carbon Dioxide Production in Acutely Ill Malnourished Children

Summary of published paper ¹

A recent study set out to test the hypothesis that the rate of carbon dioxide production is less in marasmic children with acute infection when compared to well-nourished children, but greater when compared to uninfected marasmic children. The study took place at Queen Elizabeth Central hospital, in Blantyre, Malawi. Using a stable isotope tracer dilution method, rates of carbon dioxide production were measured in children aged 12-60 months while receiving feeding. Results from 56 children were compared, 28 with marasmus and acute infection, 16 with marasmus, and 12 well nourished with acute infection. Those with acute infection had malaria, pneumonia or sepsis.

Well nourished children with acute infection produced more carbon dioxide than marasmic children. However, the rate of carbon dioxide production in marasmic children with acute

infection was not greater than in uninfected children. The observed rate of carbon dioxide production was greater than that which could be produced from the dietary intake alone.

The study concluded that marasmic children do not increase energy expenditure in response to acute infection, as well nourished children do. The data suggest that children with protein-energy malnutrition and acute infection expend less energy, largely due to a lower body temperature and the absence of fever. Although not raising body temperature in response to acute infection conserves scarce nutrients, it also determines that the immunological benefits of fever are not realised. Fever activates cellular immunity, stimulates the acute phase response, enhances iron sequestration and is associated with better survival. The clearance of the malaria parasite is also accelerated by fever.

Dietary energy intake in the 44 marasmic children studied was 350 kJ/kg/day (84 kcal/kg/d), the level recommended for malnourished children from experience in treating malnourished children in Jamaica. The data from the rate of carbon dioxide production suggests that to match energy expenditure, intake should have been increased by 25% to about 440 kJ/kg/day (105 kcal/kg.d), when the thermic effect of food is considered. Current standard recommendations are that during the initial phase of treatment, severely malnourished children should receive 336-420 kJ/kg/day (80-100 kcal/kg/d). Further research is needed to determine whether increased dietary energy improves the response to acute infection, and whether these children might be better served by increasing their dietary intake.

¹ Manary, M et al (2004). Carbon dioxide production during acute infection in malnourished Malawian children. *European Journal of Clinical Nutrition*, vol 58, pp 116-120

HIV/AIDS and Humanitarian Action



influences outcomes in an emergency has been described as new variant famine.

The report asserts that the argument that HIV/AIDS significantly contributed to the southern Africa crisis came about gradually, but may have been over-emphasised and that other equally or more important factors risked being

modalities, development modalities and of the links and interaction between humanitarian aid and development actors. The report finds a range of practical questions and challenges around programming of humanitarian aid in the context of an HIV/AIDS epidemic (see box).

Summary of published report ¹



The Humanitarian Policy Group (HPG) have just published a report which examines the implications of HIV/AIDS for understanding crisis and the role of humanitarian aid. It focuses on the humanitarian response in southern Africa in 2002 and 2003.

In reviewing the literature, the report sets out how the disease has clear negative impacts on food security at household level and that these impacts are complex, wide-ranging and gender-specific. In particular, it highlights that:

HIV/AIDS is one of many factors contributing to underlying vulnerability. HIV/AIDS creates particular types of vulnerabilities, through affecting predominantly prime-age adults, clustering in households, is gender specific, and through interacting with malnutrition.

HIV/AIDS undermines the ways in which people have traditionally coped with famine. HIV/AIDS may increase mortality in famines, as people with AIDS will be less able to cope with reduced food intake and additional disease burdens.

Issues associated with crisis may add to the risks of transmission of HIV/AIDS and contribute to the spread of the epidemic.

However, it is also argued that original research is limited, tending to focus on agriculture and there is little information about the scale of the impact of HIV/AIDS on food security at national and regional levels. The report stresses the importance of understanding how the impact of HIV/AIDS interacts with other factors, such as drought and conflict, to create acute humanitarian crises. All these factors must be considered when

neglected. There has been concern on the part of certain donors and NGOs about how HIV/AIDS is being used to justify a need for continued humanitarian aid in some countries, and there has been scepticism about the underlying empirical evidence of the links between HIV/AIDS and food insecurity. The level of current data means that the scale and severity of HIV/AIDS contribution to both acute and chronic food insecurity is simply unknown.

Considering the numbers affected and dying with HIV/AIDS in sub-Saharan Africa, the authors consider HIV/AIDS a humanitarian problem and a long-term crisis, which requires both a humanitarian response to suffering and a long-term perspective. They raise a number of challenges in responding to this situation:

- i) Considering HIV/AIDS as a health crisis in its own right, in terms of massive and increasing levels of mortality and morbidity over a period of decades, requires a long-term response encompassing prevention, care, treatment and mitigation.
- ii) Increasing underlying vulnerability. HIV/AIDS adds to the impact of other shocks, triggering acute crises more easily and complicating recovery.
- iii) HIV/AIDS, as one of many contributory factors to long-term and chronic food insecurity, poverty and destitution, adds to the existing need for safety nets and long-term welfare, as part of the overall response to poverty.

The report author acknowledges that these are not new challenges and there is a danger of AIDS exceptionalism, privileging AIDS over other diseases in health systems or focusing unduly on the impact of AIDS in food security programmes. It is further argued that the overall response to HIV/AIDS needs to take place over decades, and requires a rethinking of relief

¹ A transcript of the meeting and the published report

Programming challenges in the context of HIV/AIDS

Incorporate analysis of HIV/AIDS and livelihoods impact into early warning systems and assessments

Emerging types of vulnerability due to HIV/AIDS should be considered in assessment (e.g. widows, elderly, orphans) and targeting (e.g. urban and peri-urban areas)

Targeting and the delivery of aid must be sensitive to the possibility of AIDS-related stigma and discrimination

The HIV/AIDS epidemic reinforces the existing need for humanitarian programmes to be gender-sensitive

Emergency interventions must aim to ensure that they do not increase peoples susceptibility to infection with HIV/AIDS

Food aid in the context of HIV/AIDS should review ration sizes and types of food, and assess delivery and distribution mechanisms in the light of HIV/AIDS related vulnerabilities, such as illness, reduced labour and increased caring burdens

Labour intensive public works programmes should consider the needs of labour constrained households, the elderly and the chronically ill

HIV/AIDS reinforces the need for health issues to be considered as part of a humanitarian response

Support to agricultural production (including seed distribution) should recognise adaptations that people are making in response to HIV/AIDS

The author reiterates that humanitarian relief should remain focused on saving lives and alleviating suffering in response to acute crises. However, in the context of a HIV/AIDS epidemic, HIV/AIDS issues need to be mainstreamed by aid agencies, both internally in terms of training and organisational policies, and externally

retarding humanitarian HIV/AIDS epidemic.
The process whereby HIV/AIDS negatively

HIV/AIDS
humanitarian Policy Group, HPG Report 16, April 2004 are
available online at <http://www.odhpn.org.uk/hpg>
action.
Paul
Harvey,

in
structured and delivered.
of
flow
humanitarian
aid
programmes

http://www.sciencedirect.com/science/article/pii/S1836

Research

Nutritional Status of HIV+ Pre-School Children in South Africa

Summary of unpublished research



LIFE IN THE SOUTH AFRICAN HOSPITAL

In paediatric AIDS, nutritional status seems to be of greater prognostic value than any particular opportunistic infection^{1,2}. A number of studies conducted amongst HIV infected children in South Africa have found underweight prevalence figures of 25-30%, and figures of 55-60% for stunting^{3,4}. These are much higher than the average percentages in a national survey conducted on children below 6 years of age, which indicated that 10% were underweight and 23% stunted⁵.

In the Eastern Cape, where the prevalence of poverty, TB and HIV is amongst the highest in South Africa, a recent study set out to determine the impact of risk factors on the prevalence of malnutrition amongst HIV infected children. It was hoped that such information would assist decision makers in the formulation of optimal nutrition strategies to limit the impact of HIV/AIDS on the health of children.

The study took place at the immunology (outpatient) clinic at Livingstone Hospital, in the Eastern Cape, South Africa, between June and August 2003. One hundred and two HIV infected children, between the ages of 18 and 72 months, were included in the study. The children were on a standard regimen, receiving antibiotic (co-trimoxazole) prophylaxis, treatment of opportunistic infections, therapeutic dosages of Vitamin A every four to six months and a daily multivitamin supplement. None of the children received antiretroviral treatment, as such treatment did not form part of the governments protocol for treatment at the time of the study. The study was undertaken with the informed and written consent from each subjects parent/caretaker.

Socio

Food intake

Retrospective data on food intake, summarised in table 1, showed that only 28 (27%) of the children were exclusively breastfeeding at six weeks of age, while 28 children (27%) were formula fed and 37 children (36%) had received a combination of breast milk and other feeds (mixed-feeding). A history of mixed-feeding in infants below 12 months of age was associated with significantly worse mean WAZ scores, than the other feeding options.

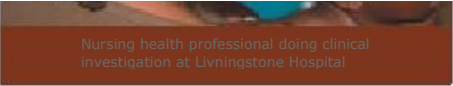
Food insecurity was reported by 39 (38%) of the childrens carers interviewed. No significant differences in the mean WAZ scores was demonstrated between the food secure and food insecure groups. However, classification of symptomatic HIV and the presence of TB signs were associated with a significantly lower WAZ.

The vast majority of the children (99%, n=100) had received multivitamin supplementation since birth. However, their nutritional status, and especially the mean WAZ scores, were worse than data published from other studies on HIV infected preschool children in other parts of the country.

Data on the use of alternative complementary therapies indicated that 20 to 30 percent of the sample received products like garlic, lemon and the African Potato (Hypoxis). No significant difference in the mean WAZ scores was found between the groups making use of such products and those who were not.

Indices of morbidity

Nearly half (43%) of the children were categorised by the paediatrician as HIV symptomatic, while twenty seven children (26%) either were on TB treatment or presented with signs of TB on the



Nursing health professional doing clinical investigation at Livingstone Hospital

By Liana Steenkamp, Dr Jill von der Marwitz, and Charlene Giovanelli

Liana Steenkamp is a nutritionist currently based at the HIV/AIDS Centre, University of Port Elizabeth and since 2001, has been involved in HIV related research and training. She previously spent 10 years working in various nutrition sectors of the Department of Health.

Dr Jill von der Marwitz is Co-ordinator at the HIV/AIDS Centre, Faculty of Health Sciences, University of Port Elizabeth, Port Elizabeth, South Africa.

Charlene Giovanelli is a dietitian currently based at Livingstone hospital, Port Elizabeth.

The contribution of M Minnaar, Sr Oliphant and Dr MAI Khan in carrying out this study is gratefully acknowledged.

collected by trained, registered dietitians, assisted by a research nurse when necessary. This included anthropometric measurements of height and weight, mid upper arm circumference (MUAC) and triceps skinfold thickness.

Clinical assessment data, to determine the indices of morbidity, were collated with the assistance of registered health care professionals, which included a paediatrician and a registered nurse.

Findings

Nutritional status

The children in the sample (mean age 40.7 months) had a mean weight-for-age Z-score (WAZ) of 1.96 (SD=1.57), a mean height-for-age Z-score (HAZ) of 2.48 (SD=1.6) and a mean weight-for-height Z-score (WHZ) of 0.66 (SD=1.53). Although half (50.9%) of the children were underweight (WAZ < -2) and 58.8% were stunted (HAZ < -2), only 21.5% had a WHZ below 2. Eight children (7.8%) were severely malnourished (WHZ < -3). Twelve subjects (11.7%) had a MUAC below the cut-off value of 12.5 cm.

of anorexia, nausea, vomiting, sore mouth or dysphagia was reported in sixty-nine children (78%), while 38 children (37%) suffered from chronic diarrhoea. Both decreased food intake and chronic diarrhoea were significantly associated with a poorer mean WAZ score ($p < 0.05$). The sample suffering from chronic diarrhoea had a significantly lower WHZ score than those without ($p < 0.01$).

Discussion

At many primary health care services and at dedicated HIV clinics, weight is the only recorded measurement obtained from HIV+ children. The high prevalence of stunting, as demonstrated in this study, suggests that many children may be adapting to a chronic state of illness.

Nutrition intervention in the form of macronutrient food supplementation, only takes place in those children who clinically appear to be severely malnourished. The stunting in the majority of the sample may create the false perception with most health professionals that the children's nutritional

Table 1 Mean weight-for-age Z-scores associated with dietary characteristics and nutrition related complications

Group 1	n (%)	mean WAZ	Group 2	n (%)	mean WAZ	p value
Food insecurity	39 (38)	-1.99	Food security	63 (62)	-1.93	0.43
Mixed feeding at 6 weeks	37 (36)	-2.39	Breastfeeding at 6 weeks	28 (27)	-1.63*	0.03*
Mixed feeding at 6 months	38 (37)	-2.14	Weaning diet at 6 months	50 (49)	-1.88	0.21
Mixed feeding at 12 months	7 (6)	-3.13	Weaning diet at 12 months	86 (85)	-1.92	0.001*
Decreased food intake (symptom-related)	69 (68)	-2.18	No anorexia, nausea, vomiting, sore mouth	33 (32)	-1.5	0.01*
Chronic diarrhoea	38 (37)	-2.37	No chronic diarrhoea	64 (63)	-1.71	0.01*
HIV Symptomatic	44 (43)	-2.4	Asymptomatic	56 (55)	-1.59	0.005*
TB Symptoms	27 (26)	-3.86	No TB symptoms	73 (74)	-2.12	0.001*
Use of garlic	28 (27)	-2.02	No use of garlic	74 (73)	-1.93	0.39



*Significant difference to the 95% confidence interval

10



Skin lesions in a HIV positive child with malnutrition



Skin lesions in a HIV positive child without malnutrition

status is acceptable. A large group which is vulnerable with low WAZ scores, but relatively good WHZ scores, may therefore be missed. The study indicates that in the absence of comprehensive nutrition assessment, simple markers, like the presence of chronic diarrhoea and loss of appetite, can be used to refer these patients for a more

Taking forward research on adult malnutrition

Summary of ongoing research
By Laura Wyness, Researcher,
University of Aberdeen, UK

Research



Adult malnutrition was initially put on the agenda of the United Nations Standing Committee on Nutrition (UNSCN) Working Group on Nutrition in Emergencies meeting in April 1999. The current position of research in this area is that there is no consensus on standards or indices to assess malnutrition in adults in complex emergencies. At the UNSCN meeting in 2001, research priorities, identifying steps to improve the assessment of adult malnutrition, were agreed. Since then, the thematic group on adult malnutrition within the working group has become increasingly active. Work is now being taken forward through a unique academic NGO (non-governmental organisation) partnership, inter-linked by PREN (Partners for Research in Emergency Nutrition), a recently established collaborative research group at the University of Aberdeen, (figure 1).

Working in partnership with NGOs, bilateral and global organisations, PREN aims to carry out much needed epidemiological and evidence-based practice research, driven by questions from the field, within the area of malnutrition in complex emergencies. A Memorandum of Understanding (MoU) has been developed to provide assurance to all members involved in the project on issues such as data ownership, publication, confidentiality and management of the arrangement.

Aims

The aims and objectives of the project were defined over several months through discussions between PREN and the HSAG. The main aims of the project are first, to carry out a robust, standardised Systematic Critical Literature Review (SCLR), to explore the indicators of nutritional status available to assess severe adult malnutrition. Secondly, to develop techniques for assessing routine, retrospective field data on severe adult malnutrition that has been collected by different NGOs. This form of data is being used, as it will include a broad range of contexts and populations. This work will help achieve the third aim to develop a model to aid the assessment of severe malnutrition in adults during complex emergencies.

Literature

The SCLR will search for, quality assess and summarise the evidence identified in the published and unpublished literature on methods currently used, and methods that could be used, to assess the nutritional status of adults during a complex emergency. The methods of nutritional assessment may include anthropometric and functional indications, clinical signs, and contextual or situation indicators.

Initial Survey

In the initial stages of this project, a survey was conducted to investigate the type of data collected by

detailed nutritional screening to determine whether they qualify for nutrition intervention in the form of supplementation.

Education forms the cornerstone of preventative therapy and it is vitally important that parents/caretakers receive comprehensive and accurate information. Patients seen by the health care providers must be given health education at antenatal clinics regarding infant feeding and the dangers of early mixed feeding, especially if infants are HIV positive. Alternative remedies are currently aggressively being promoted in the popular media in preference to sound nutrition practices, which is contributing to a great deal of uncertainty amongst health care workers about alternative complementary therapies. This study indicated no nutritional benefits are derived from such practices. Nutritional management of disease complications, in particular diarrhoea and anorexia need to be addressed, as these variables indicated a significant relationship with malnutrition and wasting.

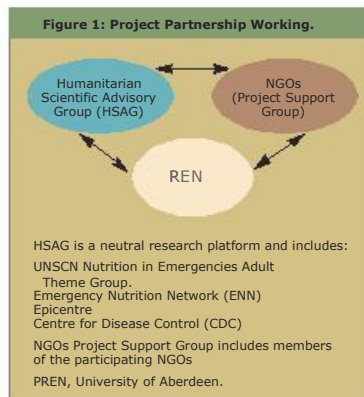
For further information, contact: Liana Steenkamp, HIV/AIDS Centre, Faculty of Health Sciences, University of Port Elizabeth, PO Box 1600, Port Elizabeth, 6000, South Africa.
Email: lianast@iafrica.com

¹ Sun WY, Sangweni B. Rationale for Nutrition Support of Children with HIV/AIDS from Socioeconomically Disadvantaged Families. *Journal of Applied Nutrition*. 1997; 49: 88-93.

² Hussey, G and Eley, B. Nutritional management of Measles and HIV infection in children, 1126-1136, *Encyclopaedia of Human Nutrition*, 1996, Academic Press, London.

³ Eley B, Sive A, Abels L et al. Growth and micronutrient disturbances in stable, HIV-infected children in Cape Town. *Annals of Tropical Paediatrics* 2002; 22: 19-23.

⁴ South African Vitamin A Consultative Group (SAVACG). Anthropometric, vitamin A, iron and immunization coverage status in children aged 6-71 months in South Africa, 1994. South



NGOs, data and the format of the data. A total of 27 NGOs were contacted and asked to complete a questionnaire (response rate 60%). The findings from this survey when used to inform the planning of the project.

The current stage of the project is to request routine retrospective field data on severe adult malnutrition from NGOs. To facilitate the preparation of the data for analysis, data from a few NGOs will be initially requested, with other NGOs being contacted as required. The data initially requested will consist of databases of Therapeutic Feeding Programmes (TFPs) and nutritional surveys (on database and hardcopy, if available). Context variables will be sought from Food Security Reports and Head of Mission Reports.

Data Analysis

Descriptive statistics of each NGOs dataset will be carried out and findings reported back to that particular NGO. Analysis of the data will be carried out at two levels. The specific questions that the data will be used to address are shown in table 1.

Table 1 Project Research Questions

Questions at Population Survey Level	Why do you find significant numbers of severely malnourished adults in some crises and not in other crises.
	Do context factors give a direction of risk of severe malnutrition in an adult population, taking different levels of anthropometric measures as the dependent variable.
	Can context factors inform/help interpret and generalise findings from specific surveys done in specific contexts.
	<i>On a descriptive basis, analysis will be carried out on two levels, i) Acute and ii) Acute-on-chronic emergency situations. Each level will aim to take into account the prevalence of co-morbidities (e.g. HIV/TB).</i>
Questions at Feeding Centre Population Level	Are the associations found at the population survey level also seen at the TFP population level, (i.e. what context factors characterise the situation in a TFP with significant numbers of severely malnourished adults).
	How are context factors associated with different levels of anthropometric measures.

This exciting partnership work has enabled research on severe adult malnutrition to be actively taken forward. Completion of this project is planned around the end of 2005. The project group will

For further information contact: Laura Wyness, PREN Researcher (l.wyness@abdn.ac.uk) and Dr Jane Knight, PREN Project Leader, (PREN@abdn.ac.uk)
University of Aberdeen, Department of Public Health, Medical School, Polwarth Building, Foresterhill,

African Medical Journal.
1996;86(1):367-371 Enzyme-linked
immunosorbent assays.

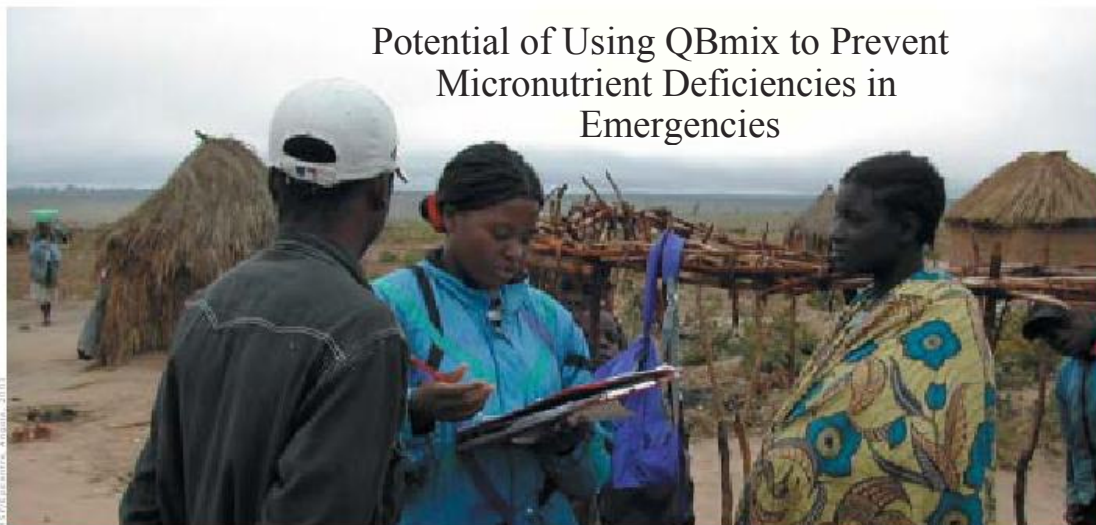
epidemiologic areas.
dissemination
between
field

Aberdeen AB25 2ZD, Scotland UK.
Tel: +44 (0)1224 551883 Fax: +44(0)1224 550925

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Field Article

Potential of Using QBmix to Prevent Micronutrient Deficiencies in Emergencies



Household survey on how QBmix is used



By Evelyn Depoortere, Epicentre

Evelyn Depoortere is currently a medical epidemiologist for Epicentre. Previously she worked on several MSF missions, including Southern Sudan during the 1998 famine.

The contributions of Sandra Simons (medical coordinator, Angola), Ann Verwulgen (field coordinator, Kuito), Dr. Paulina Semedo (Coordinator of the National Nutrition Programme) and Sophie Baquet (Nutrition Advisor, MSF-B) are gratefully acknowledged.

Thanks to the MSF team of interviewers in Kuito, namely Aldino Gilles, Amelia Vita, Azevedo Antunes, Custodio Albano, Daniel Alfonso, Isabel Domingas, Manuel da Saudade, Maria do Ceu, Ventura Sozinho, and Veronica da Costa. Also, the assistance of

Box 1 A guide to Pellagra

Pellagra is caused by Niacin (Nicotinic acid) deficiency. The condition can be fatal and is often associated with other B vitamin deficiencies. Niacin (vitamin B3) is a water-soluble vitamin widely distributed in plant and animal food, but in very small amounts. Rich sources of niacin include groundnuts, fish, meat and pulses. The body can synthesise niacin from the amino acid tryptophan.

The recommended daily requirements range from 13 to 15 mg nicotinic acid equivalent for women and 16 to 19 mg for men. During pregnancy and lactation, an additional 2 and 5 mg nicotinic acid respectively, are required. For infants and children, 6 and 11 mg daily are recommended, respectively.

The initial clinical features of pellagra are non-specific and include anorexia, prostration, weight loss, headache and a burning sensation in the mouth. The fully developed syndrome, described by the "three D's", consists of dermatitis, gastrointestinal symptoms (diarrhoea), and finally mental impairment (dementia). The dermatological signs are usually most prominent, symmetrically affecting sun exposed areas like the arms (pellagra gloves), the cheeks in a butterfly distribution, and the neck and upper chest (Casals necklace). Eventually the fourth 'D' can occur - death. When a niacin and/or tryptophan - deficient diet is consumed, the lead-time for developing signs of pellagra is about 2 to 3 months.

Populations consuming maize or sorghum and little else are at risk of pellagra. Niacin deficiency is now endemic at very low levels amongst the rural poor in Africa where maize is the principal cereal. Examination of rural health centre records may show a few cases - especially during the 'hungry season'. However, outbreaks of pellagra have only occurred in recent years amongst emergency affected populations, including Mozambican refugees in Malawi, Bhutanese refugees in Nepal, emergency-affected populations in Angola, and refugee returnees to Mozambique.

Strategies to prevent outbreaks of pellagra in emergencies include diversifying the general ration to include bioavailable sources of niacin, fortification of foods when maize is a staple food in the ration, allocation of surplus foods to allow food sale or food exchange for another food commodity, vitamin tablet supplementation, and cultivation or production of foods by the affected population.

Adapted from: Pellagra and its prevention and control in major emergencies. WHO/NHD/00.10 Available online at http://www.who.int/nut/documents/pellagra_prevention_control.pdf

Supervision of the teams, is appreciated.

Kakwarta,
Provincial
supervisor

This article describes an assessment by MSF of using a micronutrient rich food product, QBMix, in Angola and outlines possible strategies for the future in preventing micronutrient deficiency outbreaks in emergency affected populations

Since the 1990s, Mdecins Sans Frontières-Belgium (MSF-B) have worked in Kuito, Angola, as well as in several IDP (internally displaced person) camps around Kuito town.

One of these camps, Kaluapanda, was established in March 2002 and has an estimated population of 4,400 people. During this period, MSF have been involved in a number of large scale emergencies in Kuito. However over the past year (2003), the situation has become much more stable, with the displaced population beginning to return home. The current MSF programme focuses on treatment of malaria and TB. MSF have also been implementing a pellagra treatment programme, which at the time of the study described in this article, was receiving 20-30 new patients every week. Most of those in this treatment programme were living in the city.

Between June 1999 and November 2002, there were four outbreaks of pellagra in Kuito town¹. A total of 3859 cases were recorded during this period. During the first two outbreaks in 1999, the displaced population was the main group affected, with an attack rate of 4.7 per 1000 population. During the latter two outbreaks (2001 and 2002), it was the resident population who were most affected, with attack rates of 7.1 (in 2001) and 5.5 (in 2002) per 1000 population. In all outbreaks, women aged 15 years and older were the largest affected group.

Strategies to deal with micronutrient deficiency disease outbreaks like these, include food fortification, dietary diversification and supplementation (see box 1). However, these strategies all have inherent difficulties. For example, fortification requires that

¹ Micronutrient supply in emergencies. Logistic feasibility and population accep-

ments/pellagra_prevention_conditions.pdf

tability
January 2004
See Field Exchange 10, A Pellagra Epidemic in Kuito, Angola, by Sophie Baquet
and Michelle van Herp
supplementation
With
QBmix,
Kuito,
Angola.
Evelyn
Depoortere,

12

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Field Article

Box 2 Profile of QBmix

QBmix is manufactured by Nutriset. It has a shelf life of one year after manufacturing date, but studies are ongoing to improve this. It is recommended to store the product in a cool, dry place, below 30C.

Use: QBmix is added to the family meal, like a condiment, after cooking only (not to destroy the vitamins). Preparation guidelines state to prepare the meal as usual, add QBmix to the dish and mix well.

Recommended dose: One 210 g sachet meets the needs of 10 people for 2 weeks. A daily intake is not necessary - 21 g per person for a period of 2 weeks is sufficient (1.5 g/day) in 2 or 3 intakes per week. Overdosing is unlikely due to the very salty taste.

One 1.5 g dose of QBmix contains 7 mg iron, 400 mg folic acid, 34 mg selenium, 7 mg zinc, 600 mg vitamin A, 1.2 mg vitamin B1, 1.3 mg vitamin B2, 16 mg niacin, 5 mg vitamin B5, 1.3 mg vitamin B6, 2.4 mg vitamin B12, 90 mg vitamin C and 10 mg vitamin D. The equivalent of the height of the screw top gives 1.5 g of QBmix.

Adapted from the Nutriset QBmix guidelines for usage

Table 1 Acceptance of QBmix in pellagra patients and displaced families in Kuito, Angola

	Pellagra patients (n = 116)		Displaced families (n = 232)*	
	n	%	n	%
Frequency of QBmix use				
Every day	108	93.1	229	98.7
2 or 3 times a week	7	6.0	3	1.3
Other	1	0.9	0	0.0
Easy to use QBmix	109	94.0	232	100.0
Easy to add right quantity	111	96.5	228	98.7
Used screw top as measure	112	96.6	227	97.8
Added QBmix after cooking	115	99.1	228	98.3
QBmix left over	80	69.0	53	22.8
Like to use	115	100.0	232	100.0
Like the sachet (packing)	114	99.1	232	100.0
Easy to dose	111	96.5	232	100.0
Clotting	32	27.8	3	1.3
Like the texture	113	97.4	232	100.0
Like the colour	116	100.0	232	100.0
Like the smell	112	96.6	232	100.0
Like the taste	116	100.0	232	100.0
Too salty	5	4.3	0	0.0
Refused by family	10	8.7	4	1.7
Family wants more	110	94.8	229	99.6

all people vulnerable to deficiency consume the food vehicle, while the use of supplement tablets or capsules may place a considerable strain on an already overworked local health system.

The recent development of QBmix³, a mineral and vitamin rich condiment, offers an alternative to the above strategies (see box 2). In order to assess the feasibility and acceptability of using QBmix in an emergency-affected and food aid dependent population, MSF-B and Epicentre collaborated with the Nutrition Department in the Ministry of Health to test the product out in Angola. Specific objectives of the study were to:

compare the overall cost involved of using Corn Soya Blend (CSB) and QBmix⁴ to describe advantages and difficulties related to introduction and use of QBmix to describe the populations perception and acceptance to make recommendations to MSF regarding the integration of QBmix in their future response to nutritional emergencies.

Study design

Two different groups were sampled for the study. The first group consisted of pellagra patients admitted in the MSF treatment programme, while the second group targeted recently displaced families dependent on external food aid, and therefore at risk of micronutrient deficiency disease.

As the two target populations were different, they were treated as independent samples. Overall, 116 of the 168 pellagra patients who had received QBmix, and a random selection of 233 displaced families in Kaluapanda, were interviewed.

Acceptability of QBmix was assessed through a questionnaire administered during a population survey and was expressed as the proportion of families that used the

Someone felt unwell	7	6.1	2**	0.9
* The one family who did not use the QBmix is no longer included in the denominator One missing value, ** two missing values, three missing values				

	60g CSB/p/d	100g CSB/p/d	QBmix
Total quantity	1800 kg	3000 kg	45 kg
Volume	72 bags	120 bags	215 sachets
Buying price	738,72 euro	1231.2 euro	361.2 euro
International transport	3600 euro	6000 euro	90 euro
National transport (truck)			
MSF truck	28 euro	16.8 euro	0.42 euro
Rented truck	223.2 euro	372 euro	5.58 euro
Source: MSF-B logistics in Luanda, Feasibility and costs assessment, Kuito, Angola, October 2003 Note: Prices originally given in US dollar, were converted to euro at the rate of 1.25 USD for 1 Euro.			

study included confirmation that families received QBmix, verification of how it was used, whether it was accepted by the family, and what was the perceived usefulness of the product.

Feasibility was based on estimating the micronutrient needs of 1000 people for 30 days and the weight, volume and transport costs compared to CSB. Caloric value (which is relevant for CSB but not QBmix) was not considered.

Acceptability and feasibility of using QBmix

Both groups, in general, reacted positively and liked QBmix (see table 1). The large majority used it correctly, adding it only after cooking, and using the screw top as a measure. Five pellagra patients (4%) (but no displaced families) said it tasted too salty, while seven (6%) said it made

displaced families (5.2%, n=12) said they would not be prepared to buy it on the market, and various reasons were given for this (also table 1). Only one family did not use the QBmix at all because they they did not like it.

All pellagra patients and displaced families considered QBmix to be good for health. Between 15% (patients) and 27% (displaced) said they did not add salt to a meal with QBmix.

Table 2 shows a comparison, in volume and cost, between CSB and QBmix. In order to meet micronutrient needs for a food aid

³ QBmix is a registered trademark and is part of a range of products patented by IRD/Nutriset
⁴ The World Food Programme (WFP) policy dictates

field workers and interviewers were trained to administer the questionnaire. Questions address-

them
help pellagra patients (12.9%, n=15) and dispa-
unwell
or
sick.
A
small
proportion
of

that
populations completely dependent upon food aid and,
therefore, at risk of micronutrient deficiency disease
Soy
Blend
(CSB)
is
provided
for

13

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Field Article

dependent population, 60 100g/person/day of CSB are needed compared to 1.5g of QBmix/person/day. Thus for the equivalent micronutrient supply for 1000 people for 30 days, 40-66 times the weight of CSB is needed compared to QBmix. CSB needs to be transported by ship, which takes about 3 weeks to arrive in Luanda and 2-3 weeks for custom clearance. For QBmix, transport can be by plane (and therefore quicker) or ship.

Storage conditions for CSB and QBmix are similar, both needing dry conditions. CSB comes in plastic bags of 25 kg, while QBmix comes in aluminium sachets of 210g (70 sachets in 1 carton box). QBmix must be stored below 30 Centigrade. The shelf life for CSB is between 6-18 months but vitamin content declines over time. Shelf life for QBmix is at least 12 months, during which time the micronutrient content remains stable.

As required quantities of CSB are much greater, there is a time element involved in setting up appropriate distribution systems, whereas sachets of QBmix can be given out quickly. However, given its unfamiliarity, it does take time to explain why and how to use QBmix. For beneficiaries, it is obviously easier to take home a few sachets compared to a 9-15 kg bag.

Discussion

11-11-11

needed to explain the role and use of the product.

The results of this study cannot be generalised or extrapolated to other situations. For example, in Afghanistan, mothers in a therapeutic feeding centre did not like an earlier version of the product. A standardised questionnaire has limitations, e.g. it may not capture all the information available from respondents. Furthermore, recipients were in a position of

Strategies for the future

In Angola, the need for QBmix has become less relevant, as fortified maize is scheduled for distribution and the situation is increasingly stable, with more people having access to a diversified diet. In other situations where MSF intervenes, QBmix and/or other products now on the market such as Topnutri-Fam, a nutrient concentrate that comes in the form of powder, may be more appropriate, and clear operational indications have now been defined. Even though these products are not the solution, they do provide one possible tool to prevent micronutrient deficiencies where there are no other sources of vitamins or minerals.

In large-scale emergencies, when the general ration programme is erratic, or unbalanced in terms of micronutrients, ready-to-use micronutrient supplementation products should systematically be distributed to vulnerable populations. This type of supplement can also be used in other situations. For example, for hospitalised patients, patients in TB or HIV treatment programmes, or in a prison setting, where the product could be systematically added to prepared meals 2 or 3 times per week. Although medical humanitarian agencies may not be directly involved in the distribution of general food rations, they do have a role in ensuring people have an adequate supply of micronutrients. Activities for such agencies could, therefore, involve lobbying for the use of this



Nearly found it easy to use, liked the taste and so on and would like to have more of it available in the future. Moreover, they would be ready to buy the product on the market if it were available. The majority of sachets were empty and many people spontaneously asked to receive more. Also, experience has shown that people in sub-saharan African like salty tastes, e.g. QBmix has been used to prepare meals in a prison in the Ivory coast after an outbreak of beriberi and was well accepted.

Compared to CSB, the volume and weight needed is considerably less for QBmix, leading to lower international and national transport costs. However, CSB also provides calories (380kcal per 100g) and people are familiar with it. In contrast, QBmix has few calories and people are unfamiliar with it, so resources are



dependence on food aid so they may have not felt free to say what they really thought. They may have been afraid of being excluded from food distribution and felt that if they said what was expected, this would ensure they received the product again.

In the pellagra group, interviews were not necessarily conducted with those who prepared the meal. It was the patient who received the QBmix who was interviewed, so that the information was second hand.

form
 can with those agencies resourcing
 and on implementing nutritional
 supplements, and social marketing
 in order to promote and explain the
 use of this type of product.

When introducing this type of new product onto the market, clear and adapted information should be given to the target population. For example, specifically for QBmix, key information to give at the time of distribution should include the following practical messages:

- the mix contains vitamins and minerals essential for health
- use one screw top per person
- use every day if possible, but 2-3 times per week is sufficient
- salt can be added if desired
- the mix should be added to the meal after cooking.

In order that the recipient population fully comprehend the role and significance of a product like QBmix, reference persons from the community should be appointed who can be referred to at all times.

In conclusion, new products are now available on the market, which should facilitate the prevention of micronutrient deficiencies in food aid-dependent populations in emergencies. Aid agencies should be aware of the existence of these products and be ready to use them when indicated.

For further information, contact: Evelyn Depoortere, Epicentre, p/a MSF-Belgium, Duprstraat 94, 1090 Brussels, Belgium. Email : evelyn.depoortere@brussels.msf.org

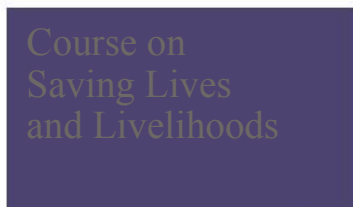




© Produced by DANature Foods/Compact AS, Norway.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

News & Views



The Feinstein International Famine Centre at Tufts University is presenting a two week intensive course for humanitarian programme managers focusing on nutrition, public health and community-based animal health interventions in complex emergencies. In addition, specialists in gender, refugees, humanitarian law, rights and principles, and livelihoods will offer in-depth sessions.

Entitled *Managing Fundamental Interventions in Complex Emergencies, A Course For Managers Of Refugee And Relief Operations*, the course is being held at the Crowne Plaza in Montreal, Quebec, Canada, August 22 - September 4, 2004

Course fees are \$3,800 per person and include airport transfers to/from hotel, tuition, room, breakfast, lunch, and course materials, but exclude airfare, dinners, laundry, telecommunication or other personal expenses.

Applications can be obtained and submitted to: Saving Lives & Livelihoods Course, Feinstein International Famine Centre, 126 Curtis Street, Medford, MA 02155 USA
Tel: 1-617-627-3423, fax: 1-617-627-3428, email: estrella.alves@tufts.edu
<http://www.famine.tufts.edu>

WHO/TALC materials on the Management of Severe Malnutrition

Given the recent debate and rapidly evolving developments in the management of severe malnutrition, knowledge of current guidelines and training materials and how to access them is essential for field workers. A listing of recent materials on the management of severe malnutrition, distributed by WHO and TALC, is being included in this issue along with details on pricing, language and contact addresses.

Item	Date	Title	Type material	Authors	Description	Distributor	Approximate price	Language**
1	1999	<i>Management of severe malnutrition: a manual for physicians and other senior health workers</i>	Manual	60 pages. WHO	Internationally agreed guidelines on the management of severe malnutrition in young children (and briefly in adults and adolescents) for health staff working at central and district level.	NHD/WHO	US\$20.70 or SwFr 23.00 (16.10)*	Eng, Fre, Span, Port
2	2000	<i>Management of the child with a serious infection or severe malnutrition</i>	Manual with 20-page chapter	Severe Malnutrition + appendices	IMCI guidelines for senior health staff responsible for the care of young children at the first referral level in developing countries	CAH/WHO	SwFr 15.00 (10.50)*	Eng, Fre, Rus TALC

		<i>malnutrition</i> WHO/FCH/CAH/00.1	ces. WHO-IMCI		TALC 3.50 +pp Eng	
3	2000	<i>Treatment of severely malnourished children</i>	Slides + notes for facilitator. Schofield/Ashworth/ Burgess	Set of 24 teaching/learning slides for staff in health centres, hospitals and emergency feeding programmes.	TALC From 5.50 +pp Eng	
4	2001	<i>Improving the management of severe malnutrition</i>	Training modules (300 pages) on CD-ROM. Ashworth/Schofield (LSHTM) & Puoane/Sanders (UWC)	Trainers Guide for those running training workshops. It tells how to plan a workshop and contains course materials, handouts and transparencies that participants can use to train their own staff, especially nurses. Clinical setting not required.	LSHTM & UWC Free TALC (see item 7 below) Eng	
5	2002	<i>Training course on the management of severe malnutrition</i> WHO/NHD/02.04	Training guides and 7 modules with support material including a video. WHO	Instructor and Participant Guides (with exercises and photos) for 3-day orientation course for instructors and 6-day training course for senior health workers	NHD/WHO Eng, Span (Fre/Port under prep.)	
6	2003	<i>Caring for severely malnourished children</i>	Book 82 pages. Ashworth/Burgess	Based on items 1, 2 and 4 and written for nurses and other health professionals working in resource-poor settings. Sets out the 10 steps and briefly explains the rationale for each one. Includes how to involve mothers in care.	TALC 3.15 +pp Eng	
7	2003	<i>Caring for severely malnourished children</i>	CD-ROM. TALC	Contains items 3, 4, 6 and a list of related websites.	TALC 4.50 +pp (includes hard copy of item 6 CD-ROM not sold separately) Eng	15
8	2003	<i>Guidelines for the inpatient treatment of severely malnourished children</i>	Handbook 48 pages. Ashworth/Khanum/Jackson/Schofield NHD/WHO	Practical 10-step treatment guidelines similar to the malnutrition section of item 2. Support material for item 5.	NHD/WHO US\$ 9.00 or SwFr 10.00 (7.00)* Eng	

Abbreviations, Addresses and Websites

CAH - Child and Adolescent Health and Development, WHO, 1211 Geneva 27, Switzerland. Fax: +41 22 791 4857, email: cah@who.int, <http://www.who.int/child-adolescent-health/publications/pubIMCI.htm>.

IMCI - Integrated management of childhood illness

LSHTM - London School of Hygiene and Tropical Medicine, Nutrition and Public Health Intervention Research Unit, Keppel Street, London WC1E 7HT, UK. Fax: +44 207 958 8111, email: ann.hill@lshtm.ac.uk, <http://www.lshtm.ac.uk/feeding>

Switzerland. Fax: +41 22 791 4156, email: khanums@who.int, <http://www.who.int/nut/publications.htm>

pp - post and packing

TALC - Teaching-aids At Low Cost, PO Box 49, St Albans AL1 5TX, UK. Fax: +44 1727 846852, email: info@talcul.org, <http://www.talcul.org>

UWC - University of Western Cape, School of Public Health, Private Bag X17, Bellville 7535 Cape, South Africa. Fax: +27 21 959 2872, email: tpuoane@uwc.ac.za or dsanders@uwc.ac.za, <http://www.soph.uwc.ac.za>

WHO - World Health Organisation; www.who.int

Additional materials are also available from several other organisations. Relating to infant feeding in emergencies, Module 1, Infant Feeding in Emergencies for emergency relief staff, is available and accessible online or in print form from ENN. An online version of Module 2, Infant Feeding in Emergencies, for health and nutrition workers, will soon be available from ENN, and will include a section on managing severely malnourished infants aged under 6 months. ENN has also recently published an interagency workshop report, Community based approaches to managing severe malnutrition. For further details, email: office@ennonline.net, or see online at <http://www.ennonline.net>.

<http://www.isnhn.ac.uk/nhnhn>
NHD - Nutrition for Health and
Development, WHO, 1211 Geneva 27,

Marketing
Switzerland. Fax: +41 22 791 4857, email: publi-
cations@who.int, <http://bookorders.who.int>
1211
Geneva
27,

15

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

News & Views

Nutrition in emergencies working group, SCN 2004



United Nations System
Standing Committee on Nutrition

At the 31st Standing Committee on Nutrition (SCN) session held recently in New York (21-25 March, 2004), progress of the Nutrition in Emergencies Working Group (NEWG) was reviewed. Chaired by Saskia van der Kam (Mdecins Sans Frontieres), work was presented in six subject areas (theme groups). The contribution of the NEWG activities to the realization of the Millennium Development Goals, the central theme of the 31st session, was also considered at the meeting.

Adult malnutrition

Bradley Woodruff (CDC) and Jane Knight (University of Aberdeen) presented a joint research initiative by University of Aberdeen (leading), Partners Research Emergency Nutrition (PREN), the Humanitarian Scientific Advisory Group (including ENN, CDC, Epicentre) and the NGO Support Group. The study aims to explore and develop a model to increase the generalisability and robustness of current indicators of severe adult malnutrition

plans for this group are to consolidate community treatment of severe malnutrition, including an intervention framework, and to develop an approach to managing severely malnourished infants.

Food security

Rita Bhatia (WFP) outlined WFPs goals for food aid in emergencies including plans to integrate educational support and gender disparity reduction into programming. WFP is also examining the efficacy of in country fortification of food aid in order to improve ration quality.

Fathia Abdallah (UNHCR) and Andrew Seal (Institute of Child Health, London) outlined how UNHCR is investigating micronutrient deficiency assessment methods, improving micronutrient supplementation (specifically the use of iron cooking pots to increase the iron consumption), and the development of nutrient analysis software. In addition, several NGOs are investigating ways of fortifying food rations of internally displaced populations, refugees and people living with HIV/AIDS. Research on persistent micronutrient malnutrition in long-term African refugees was also presented, which found a high prevalence of anaemia and iron deficiency associated with dietary iron insufficiency, and vitamin A deficiency. A key recommendation was to include simple methods of micronutrient surveillance in routine operations.

Care practices in emergencies

Care practices in emergencies were highlighted as an underdeveloped sector amongst agencies working in emergencies. Cecile Bizouerne (ACF) presented research findings from Sudan and Afghanistan, which explored mental and social issues in caring practices.

Recommendations

material and in training. Module 2, which targets health and nutrition workers, has a greater technical content and is nearing completion, including sections on managing malnourished infants under six months, and artificial feeding in emergencies. Plans include targeting and evaluating both modules, and identifying funding resources to develop a third training module, on complementary feeding in emergencies. Gaps in the evidence base for managing severe malnutrition in infants under six months were highlighted.

Nutrition and disease

In view of the the many emerging issues and initiatives relating to nutrition and HIV/AIDS, it was decided that a representative of the nutrition in emergencies working group join the Nutrition and HIV/AIDS working group, to encourage a working link between the two groups.

Capacity development

Awritten update on capacity development for nutrition in emergencies was submitted by Annalies Borrel (Tufts University). This included a list of available courses, which have a focus on emergency nutrition, and is available on NutritionNet (www.nutritionnet.net), and will be updated in June 2004. Other initiatives include the publication of the second edition of the Sphere manual, and the ongoing SMART project.

Plans for the SCN 2005

The NEWG will be chaired by Fathia Abdallah (UNHCR) and Caroline Wilkinson (ACF France). Each of the theme groups which comprise the working group are represented by a focal person(s). In 2005, a larger meeting is planned just before the SCN annual meeting, as there

during complex emergencies, by literature review (published and unpublished) and analysis of data including context. Agencies were requested to forward any related information including reports, raw data, patient cards, surveys and articles.

Community based therapeutic care (CTC)

Kate Sadler (Valid International) outlined the considerable progress made in managing severe malnutrition in a community setting. Working

included the type of mental and social support given by agencies in nutritional programmes, and using these to inform how we can adapt ways to address care practices in emergencies.

Marie McGrath (ENN) presented an update on training materials on infant feeding in emergencies, on behalf of a core inter-agency group involved in their development. Module 1, Infant Feeding in Emergencies, for relief staff, has been evaluated and is being widely used as resource

are for further information or to contribute to the activities of the working group, contact Fathia Abdallah, email: fabdallah@unhcr.org or Caroline Wilkinson, email: ecw@acf.imaginet.fr discussed a full report on the NEWG meeting can be found at <http://www.unsystem.org/scn/>

* See <http://www.enonline.net> for fuller update on infant feeding in emergencies activities presented at SCN

New Measuring Scoops for F75 Therapeutic Milk



To respond to frequent requests for measuring scoops for the preparation of small quantities of F-75, Nutriset with the approval of UNICEF, are including measuring scoops in every carton of F-75.

The Nutriset measuring scoops are red with the NUTRISET logo printed on the handle.

Preparation of F75 therapeutic milk using the red NUTRISET scoop: Mix one level measuring scoopful of Nutriset F-75 therapeutic milk powder in with 20 ml of water. This dilution is only valid for F75.

To dilute Resomal or F100 therapeutic milk using the red scoop, a different dilution is required. For further information on dilutions, contact Christelle

ECOWAS Nutrition Forum on Nutrition and HIV



The West African Health Organization (WAHO), a specialist agency of ECOWAS (Economic Community of West African States), will hold its 9th Annual ECOWAS Nutrition Forum, from the 20-24 September, 2004 in Cotonou, Benin. The Forum brings together nutritionists from the 15 member states of ECOWAS, and partners who support the forum.

The main objectives of the forum are to:

- Develop common, pertinent and appropriate strategies for preventing nutritional problems in the ECOWAS sub-region
- Promote information and experience exchange amongst nutrition actors, and the operationalisation and strengthening of national nutrition networks in ECOWAS member states.

The forum devotes a day to providing a technical update for participants on a pertinent nutrition issue in the region. The technical theme for this years forum will be Nutrition and HIV/AIDS. In spite of considerable efforts made in the management of persons living with HIV/AIDS (PLWHA), the prevention of mother-to-child transmission

AIDS control programmes remains relatively weak.

The technical update sessions will:

- Provide participants with the most recent scientific and political orientations around the subject of nutrition and HIV
- Facilitate exchange of experience, best practice and lessons learned among actors and partners working on the theme
- Identify strategies for strengthening the capacity of nutritionists in the region in support of national AIDS control programmes, specifically in relation to providing nutrition care and support for PLWHA and preventing mother-to-child transmission of the disease.

For more information, contact: Dr Ismael Thiam. WAHO Nutrition/Child Survival Specialist, WAHO, 01 BP 153 Bobo Dioulasso, Burkina Faso. Tel 226-97-57-75, Fax: 226-97-57-72, E mail: ismaelthiam@hotmail.com or wahoos@fasonet.bf <http://www.nutritionecowas.org>.

In Benin, contact: Dr Raima Moudachirou,

Lecossais,
Public
Manager,
leccossais@nutriset.fr

antiviral drugs, the involvement of nutritionists
in the planning and implementation of national
HIV
virus
and
access
to
anti

National
Nutrition
Focal
Point
of
Benin,
mamoudachirou@hotmail.com

16

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

News & Views

Equity in Donor Aid Allocation to Iraq

Two short articles in a recent issue of the *Lancet* question the overall level of aid given and pledged to post-conflict Iraq^{1,2}. One author (Singh) highlights the uncritical appraisal of the 33 billion dollars allocated and pledged at the US-driven, and UN endorsed, Madrid donor conference in October 2003. He argues that many countries in Africa, south America and Asia are beset by lower levels of human development, deadlier pandemics, higher infant mortality rates and greater social instability than Iraq. Like Iraq, Rwanda and Sierra Leone are wracked with continuing political instability and strife, yet the international community failed to react with the swiftness and urgency it has shown it is capable of in the case of Iraq. Singh asks if the threat of terrorist opportunism in Iraq is being cited as a reason for the urgency in donor aid to that country, then why is the same reasoning not being used to rally massive aid to Somalia, where lawlessness is just as bad and the country offers a likely centre for terrorist activities. Furthermore, life expectancy and child mortality in Somalia paint a grimmer picture than in Iraq. Singh asks whether other countries are being sidelined for strategic reasons, i.e. the mounting casualties incurred in Iraq by troops, and the draw on workers from developed countries. In July 2003, the total amount pledged to the Global fund to fight AIDS, TB and Malaria, since its creation in January 2002, stood at 4.7 billion dollars. Inexplicably, some countries pledged more to Iraq in 2 days, at the behest of the USA, than they have contributed to the fund since its inception.

Singh suggests that rich donor countries do not have infinite funds and that an inequitable or disproportionate allocation to Iraq now, could beget and exacerbate donor shortfalls to other needy nations in the future. Conversely, if future aid to other countries in need will not be affected by the pledges to Iraq, another disturbing question is raised; why have



Daniel F. Brumback/AFR, 2003



...
 well countries in the past. Is it because the worlds most powerful
 country was not doing the soliciting.

pledged
 and
 A piece written in response to this article by staff from the World
 Health Organisation (WHO) broadly agrees with these points. The
 authors draw attention to the June 2003 Sweden convened meeting, enti-
 tled Good Humanitarian Donorship. This meeting endorsed a series of
 principles of good practice amongst donors. One of these principles was
 identified as the need to allocate humanitarian funding in proportion to
 needs and on the basis of needs assessments. The WHO piece argues
 that donor pledges at the Madrid conference were generous but neces-
 sary. However, support for Iraqs recovery and reconstruction should not
 be provided at the expense of other crises. They further conclude that it
 would be excellent if the UN system and World Bank were to be in a
 position to undertake a cross-sectoral, standardised needs assessment,
 similar to the one done in Iraq, for every post conflict nation, followed
 by a high level Madrid-style reconstruction conference. Such an app-
 roach will make good donorship a reality, hasten the repair of vital systems
 that bring lifelines to crisis-affected people, and accelerate progress
 towards fulfilment of the millennium development goals.

¹ Singh J (2003). Is donor aid allocation to Iraq fair. The Lancet, vol 362, Nov 15th 2003, pp 1672-1673.

² Nabarro D, Loretta A and Colombo A (2003). Increased equity in post-conflict recon-
 struction. The Lancet, vol 362, Nov 15th 2003, pp 1673

Photos from top:
 Loading food aid in Iraq
 Distributing food aid in Iraq

Training in Public Health in Emergencies

The next Public Health in Complex Emergencies training programme will take place between 26th July and 7th August in Thailand, and 1-14 November at the Institute of Public Health, Uganda.

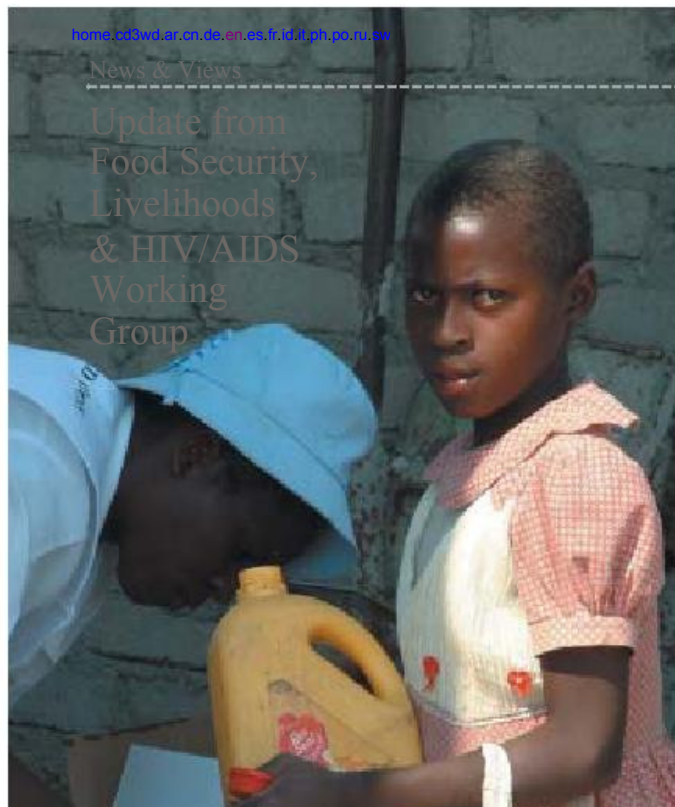
This two-week residential course focuses on critical public health issues faced by NGOs working in

of humanitarian assistance workers and their organisations to respond to the health needs of refugees and internally displaced persons affected by these emergencies. Participants will master key competencies in a range of sectors including epidemiology, communicable disease, nutrition, reproductive health, protection & security, psychosocial issues,

For more information, contact Lorna Stevens,
 email: shortcourse@theirc.org,
<http://www.theirc.org/phce>

The training programme is implemented by World Education, Inc., Columbia University Mailman School Of Public Health, International Rescue Committee, American University Of Beirut, Asian Disaster

The ~~purpose~~ ^{goal} is to enhance the capacity and coordination. *Priscilla Akello, Makerere University Centre, and the Institute Of*



home.td3wdt.ar.cn.de.en.es.fr.id.it.ph.pb.ru.sw

News & Views

Update from Food Security, Livelihoods & HIV/AIDS Working Group

UNITED NATIONS WORLD FOOD PROGRAMME

CAFOD

Ann Smith described how CAFOD is a partnership-based organisation working primarily with and through field partners, with regional offices in Harare and Nairobi. There is a four person HIV Support Section although this is about to be restructured. HIV is now being mainstreamed into thinking in all aspects of CAFODs work. Since 1994/95, CAFOD have consistently worked at incorporating HIV perspectives into emergency response. However, translating theory into practical implementation has been a slow process. There is still a discrepancy between what CAFOD are saying and what they are doing. Food distribution through home based care programmes has now reached the point where there is uncertainty as to the way forward while efforts are being made to account for HIV in livelihoods programming.

Tear Fund

HIV is Tear Funds main strategic priority and is mainstreamed across the 4 pillars of the agency's strategy: disaster management, advocacy, community development and pro-poor economic empowerment. Amy Slorach described how this developed from an internal review and pressure from partners for Tear Fund. Demands from partners have included the need for a different type of food basket to address the needs of people living with HIV/AIDS, and the need for more sophisticated targeting of food baskets linked to household size. Ongoing questions for Tear Fund include how to integrate HIV/AIDS into food security and other programmes, how to address the issue of sustainability, and how to address the issues for partner organisations affected by HIV and AIDS. Tear Fund has engaged ACET consultancy to work with partners and a report will be produced shortly which will be shared with other agencies.

Save the Children UK

Michael O'Donnell presented some key points from a draft paper³, intended for both managers and technical staff working on either food security or HIV/AIDS and reproductive health. It focuses on the economic impact of AIDS, highlights the linkages between HIV/AIDS and reproductive health, and considers how to translate these linkages into programming.



An AIDS orphan collects her food ration

A second meeting of the Food Security, Livelihoods & HIV/AIDS Working Group (WG), co-chaired by Rebecca Brown (AAH) and Laura Phelps (Oxfam), was held on Tuesday 20th April 2004. The premise for the WG, which first met in December 2003, was to fill a perceived gap and provide an ongoing forum for exchanging views, skills and knowledge about Food Security and Livelihoods in the context of HIV and AIDS ¹.

The meeting began with a summary by the co-chairs of the main points of the previous meeting, with introductions including Mick Matthews, Secretariat of the UK Consortium on Aids and International Development. New agency members to the group, Concern Worldwide, CAFOD and Tear Fund, gave short presentations on their agency experiences relating to HIV/AIDS, while SC UK presented on a guide to the many issues needing to be considered when carrying out assessments or planning interventions.

mainstreaming HIV/AIDS, Paul Rees-Thomas outlined a recent internal audit that found an awareness of HIV/AIDS policy within the organisation, progress in terms of personal awareness, e.g. development of a critical illness policy, with further work needed, and ongoing, on mainstreaming HIV/AIDS in programmes throughout the Concern network ².

Other areas considered relevant to the Working Group included:
 A Livelihoods Policy based upon labour reduction approaches.
 Consideration of proxy indicators as an aid in targeting vulnerability.
 Exploring geographical and regional differences.
 Community based approaches to managing severe malnutrition, may offer a potential entry point to communities of people living with HIV/AIDS (PLWHA).
 Comparing emergency response models as a platform for medium to long-term responses.
 Looking at local production initiatives

The remainder of the meeting explored whether there is a need for a working group and, if so, what should be the focus of activity. Key points to emerge were:

Before undertaking external advocacy, the group should carry out some internal research to highlight commonalities amongst the agencies involved. Internal summaries of organisational strengths and weaknesses in terms of HIV/AIDS programming would be useful.

There is a need for the WG to focus on more specific fields of activities within the sector. Exploring a specific issue at each meeting was suggested as one way of maintaining focus.

The group could provide a forum to stimulate and engage in discussion about how we understand the problems and address solutions. Sharing the Working Group thinking with field partners would be valuable to get guidance on what the group should be considering.

Potential joint projects between agencies should be explored, and may simply mean defining pieces of work each is doing and comparing and sharing the results

The meeting concluded that there is a need to document the wealth of field experience, especially in high HIV prevalence areas, and use this to develop an advocacy or programming tool.

It was agreed that operating within the UK Consortium structure would facilitate the working groups activities. The next meeting is scheduled for July 20th, and will likely focus on terms of reference for working within the Consortium, identifying next steps and further sharing of agency experiences.

For further information, or to contribute ideas on what you think the group should be looking at, contact: Laura Phelps, email: lphelps@oxfam.org.uk or Rebecca Brown, email: r.brown@aa huk.org

Proceedings of the working group meetings can be viewed on the UK Consortium website, <http://www.aidsconsortium.org.uk>

¹ See Field Exchange 22, HIV/AIDS and Food Security, summary of meeting, p22-23

² Further suggestions from discussions:

A Toolkit, Guide for NGOs managing HIV/AIDS in the workplace is produced by the UK Consortium and available from the website <http://www.aidsconsortium.org.uk>.

Also Plan International suggested as a reference for mainstreaming HIV throughout organisations, see <http://www.plan-international.org>

³ Presentation by Michael O'Donnell, SC UK based upon draft paper, Food

Concern
Describing Concerns approach to

activities are ultimately not
sustainable in the longer term.
feeding

Security,
Economic Implications. Available from Michael O'Donnell,
Email: m.odonnell@savethechildren.org.uk
HIV/AIDS:

18

A
Guide
to
the
Linkages,
Measurement
&

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

News & Views

FAO/WHO Meeting Warn of Contaminated Infant Formula

People caring for infants at high risk of infection should be warned that powdered infant formula is not a sterile product, a joint Food and Agricultural Organisation (FAO) and World Health Organisation (WHO) meeting has concluded, and recently highlighted in a BMJ news piece ¹.

Attended by experts, the joint FAO/WHO workshop on Enterobacter sakazakii and other micro-organisms in powdered infant formula found that intrinsic contamination of powdered infant formula with E sakazakii and Salmonella had caused cases of infection and illness in infants, including severe disease, and could lead to serious developmental sequelae and death.

Neonates (up to 4 weeks of age), particu-

Letters

Dear Editor

I was amazed, and greatly disappointed, to read the report of the workshop on Community Based Approaches to Managing Severe Malnutrition, and the piece on this subject in Field Exchange, March 2004, pp 16-19. Why was there no mention, whatsoever, about any of the micronutrient deficiencies. These almost invariably accompany severe protein-energy malnutrition, and therefore constitute a very important part of "severe malnutrition". All those concerned should surely know that deficiency of vitamin A, iron, iodine, and zinc, and possibly others, are responsible in large part for the very high rates of mortality and morbidity among young children and pregnant and lactating women, and others, in developing countries. I find it ironic that on the very next pages you have printed an excellent article by Dr Andre Briend, which rightly draws attention to the scandal, and reflects an area in which I was actively involved in over several decades, in trying to combat the criminal micronutrient inadequacy of many refugee rations. The most startling feature of Table 1 in Dr Briends article is the absence of both vitamins A and C. Even to this day, there are constantly recurring reports of frank scurvy and

non-blinding and blinding xerophthalmia.

Yours faithfully

Donald S. McLaren, MD, PhD, FRCP

The ENN would like to point out that the report referred to in the letter above was the proceedings of a meeting summarised by the ENN, and included with issue 21 of Field Exchange. While micronutrient deficiencies were discussed at the meeting, the main focus of discussions was around the new strategy of addressing severe malnutrition through community based care. It should also be noted that all diets used in projects described in the Dublin report used foods that were highly fortified with all micronutrients (along the WHO recommendations for F100 rehabilitation diets). Nonetheless, Dr. McLaren's letter, and the article by Andre Briend to which he refers, do highlight how we can never be complacent about micronutrient deficiencies. Sadly, the steady flow of articles about micronutrient deficiency outbreaks in humanitarian crises received by the ENN and often published in Field Exchange bear testimony to this.

larly those born prematurely, ~~well~~ ~~to~~ ~~be~~ ~~born~~ ~~to~~ ~~un~~ ~~compromised~~ ~~babies~~, were considered to be at greatest risk of E sakazakii infection. Infants of HIV positive mothers were also at risk because they may require infant formula and may be more susceptible to infection. E sakazakii has been implicated in outbreaks causing meningitis or enteritis. In the few outbreaks reported, the death rate among infants who contracted the disease ranged from 20% to over 50%, while some survivors experienced severe lasting complications. The bacterium has been detected in a range of foods, but only powdered infant formula has been linked to outbreaks of disease. Its prevalence is unknown.

The expert meeting recommended that carers, particularly of high risk infants, should be encouraged to use commercially sterile liquid formula or formula that has undergone an effective decontamination procedure, such as using boiling water to reconstitute formula or heating reconstituted formula.

The meeting was called in response to a request made by the Codex Committee on Food Hygiene for scientific advice to be used in the revision of the Recommended International Code of Hygienic Practice for Foods for Infants and Children. On the basis of its findings, the workshop recommended that the code should include microbiological specification for E sakazakii in powdered infant formula.

A summary report of the joint FAO/WHO workshop on E sakazakii and other microorganisms in powdered infant formula is available at <http://www.who.int/foodsafety/micro/meetings/feb2004/en/>

¹ News extra. FAO/WHO meeting warns of contamination of powdered infant formula. BMJ

Dear Editor

The targeting of food aid is widely assumed to be the most effective and efficient way of ensuring that the limited food aid resources available in emergencies reach those who need them most.

Targeting is conducted at multiple levels - from the selection of countries, down to the selection of individuals who will receive it and those that won't. Food aid targeting is a central aspect of the food aid system, which is itself driven by multiple objectives: shifting surpluses, keeping world prices high, humanitarian, political contract between countries, etc. This means that the quantity and quality of food aid at any given emergency is unlikely to be commensurate with the need experienced by those affected by the emergency. Within this context, humanitarian agencies are often required to target food aid to the households or individuals that need it most.

In most emergency situations, it is not possible to target food aid more specifically than to geographical areas¹. The contexts where within-community targeting of households is possible are very few, unless costly administrative systems are put in place (which out-weigh the cost savings of targeting). Wide implementation of feeding programmes, often in the absence of a general household ration, can ensure that certain individuals receive food (there are few guarantees that these individuals will consume the food). These programmes rarely contribute to the longer term viability of the household and targeted individuals

are likely to experience very low recovery rates because, in fact, the targeting has failed and food is shared or replaces the normal diet. Food for work is rarely practical in an emergency, because of the administrative burden it carries.

Targeting according to socio-economic criteria can only feasibly be done using community managed approaches and only then, in stable communities, where needs vary considerably between households and food is sufficient to address households' food deficit.

In practice, however, these approaches are applied in many emergency situations. Monitoring and evaluation is very poor and rarely documented. Inclusion and exclusion errors are undoubtedly huge in many contexts but generally ignored. Therefore, the myth of the appropriateness of targeting in emergencies continues.

Isn't it time we challenged the perceived wisdom, made a clear statement of when it may be appropriate to target food aid in emergencies and when it is likely to fail, and began to explore other ways of targeting resources at individuals and households who need them most, e.g. cash, market intervention, etc.

Anna Taylor
Nutrition Advisor, SC UK

¹ See ENN Special Supplement on Targeting Food Aid in Emergencies, Taylor and Seaman, 2004

Full text online at
<http://bmj.bmjournals.com/cgi/content/full/328/7437/426-d.etoc>

home, published on the ACF website, www.acf.org

Field Article

Vulnerability Mapping in Urban Afghanistan

By Heloise Troc and Erin Grinnell



Heloise Troc is a food security officer, working for ACF for over 3 years. Her field experiences include acting as a food security co-ordinator in Liberia and Afghanistan.



Erin Grinnell is an anthropologist who has been working for over two years with ACF as a food security officer in Burma and Afghanistan.

Thanks to the entire ACF field team for their contribution and support during this assessment, and to Lisa Ernoul, ACF HQ, for her work on this field article.

Figure 1 Livelihood Zones in Kabul City

Vulnerability Legend	
A. Central Bazaar ---	F. Service Destroyed ++
B. High Services Residential +++	G. Good Income - West +
C. Medium Service Residential ++	H. Remote North -
D. Poor Service - East -	I. Peri-urban --
E. Poor Service - South -	
Most vulnerable --- Least vulnerable +++	

This article describes vulnerability mapping carried out by ACF in Kabul, and how it has been used to inform programming and tailor interventions in the field.

The past 23 years of unrest in Afghanistan have had a significant impact on Kabul, with up to 60% of housing destroyed and infrastructure decimated. Since the fall of the Taliban, there has

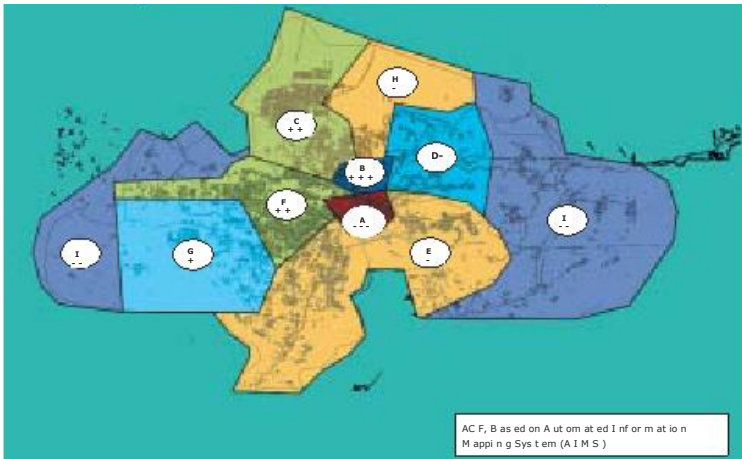
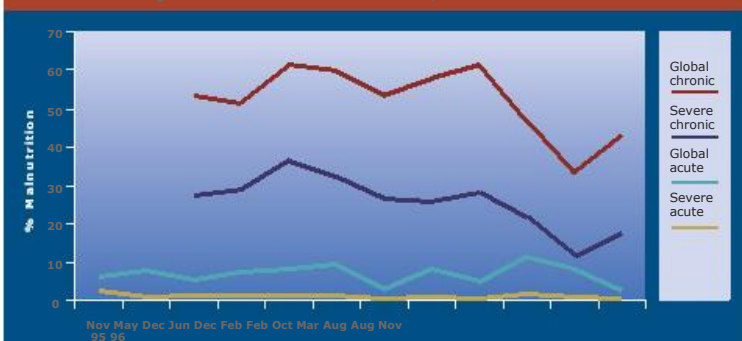


Figure 2 Nutritional surveillance in Kabul, 1995-2003



Afghanistan, mainly coming back from Pakistan and Iran, and placing an enormous strain on municipal resources. In 2002, a total of 993,582 refugees and internally displaced people (IDPs) arrived in Kabul in a matter of only a few months. The Central Statistics Office's current estimate of numbers in the city is 2,799,300 persons.

Action Contre la Faim (ACF) has been working in Kabul for eight years, implementing nutrition, food security, water and sanitation, and medical programmes. In light of the returning population, a vulnerability assessment was undertaken by ACF between October and November 2003. The assessment aimed to provide an overview of the main determinants of vulnerability¹, as well as map vulnerability in the city, and so provide qualitative and quantitative information that could be used both by ACF and other agencies, to guide programming. This type of assessment has rarely been carried out in a post-conflict urban setting.

Mapping method

Vulnerability can be delineated by two types: structural vulnerability and inherent vulnerability. Structural vulnerability is determined geographically by where one lives, which affects access to, and availability of, health services and quality of services, including water and sanitation and housing conditions. Inherent vulnerability is determined by the socio-economic characteristics of a family or household, in particular, being a woman of childbearing age, lack of regular income and renting accommodation.

¹ Kabul Vulnerability Mapping, January 2004, Action Contre la Faim, Afghanistan. Internal report.
² In this article, vulnerability refers to the degree of susceptibility to a threat, risk or shock as well as the ability to cope and recover from these threats, risks or shock without jeopardizing one's future well being. (Ref: Grace, 2003. One Hundred Households in Kabul.)

	Time of Survey/Assessment	
20	96 97 97 99 99 00 01 02 03 03	... gies, and the impact of cash-for-work programmes on batives of the vulnerable. Afghanistan Research and Evaluation Unit (AREU), Kabul). writer vulnerability, coping strate -

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Field Article

In addition to reviewing ACF and external agency reports on Kabul, two levels of mapping were used to explore types of vulnerability in the city:

- i) Mapping livelihood zones. Livelihood zones are zones that share similar characteristics such as sources and level of income, access to services and infrastructure, as well as the way populations respond to food insecurity or shocks, using the resources and opportunities available to them.
- ii) Mapping highly vulnerable gozars (neighbourhoods) within the city zones.

The livelihood zone mapping was based on purposive sampling of representative neighbourhoods in the city. Unlike rural populations, where livelihoods are determined largely by agro-ecological factors and access to markets, urban livelihoods are also shaped by community assets in a given neighbourhood, i.e. services, infrastructure and housing.

Baseline information on the city's infrastructure, including electricity coverage, water and sanitation, health centres, roads and markets, was aggregated to provide a score with which to delineate relatively homogenous livelihood zones. Zones comprised of districts (numbered 1-16). A series of workshops were then held with representatives from ACF Kabuls technical departments, in order to define key criteria of vulnerability for Kabul city. Using these criteria, the team ranked the different neighbourhoods in the city through qualitative scoring, and delineated relatively homogenous zones.

Fieldwork

ACF carried out a systematic screening at Pol E Charki encasement centre³ and the team met with several returnee families, to understand their living conditions upon arrival in Kabul.

Main findings

The assessment allowed ACF to draw a map of the livelihood zones (see figure 1). However within the livelihood zones, vulnerabilities varied. The inner city area (Zone A-central Bazaar), for instance, had serious house destruction but enjoyed nearby services and job opportunities. One of the most significant factors determining the level of vulnerability of an area in the city of Kabul was its relation to the urban plan, laid out in the late 1970s. This city master plan, as it is known, determined the quality of roads, drainage and sewage networks, the level of water provision and the quality of housing.

Under serviced areas

Eleven gozars stood out within their zones as highly vulnerable. These neighbourhoods physically lie outside the boundaries of the city master plan and are not, therefore, included in any present or future scheme to improve access to basic services. However, the large number of families in these gozars rules out any possibility of either expelling or relocating inhabitants. The original urban plan, laid out in 1978, was only meant for a population of 2 million people. These vulnerable gozars are not really targeted by the municipal authorities, although exceptions have been made for drinking water projects. Current water access, and above all, sanitation conditions in these areas raise serious public health concerns and need immediate intervention, e.g. water access, night soil and refuse collection.

Nutrition and food security analysis

In November 2003, ACF conducted a nutrition and household food security survey. This confirmed a consistent decrease in levels of severe malnutrition (see figure 2), especially over the preceding year. The survey also highlighted an annual peak in prevalence of malnutrition during the summer months, which was probably linked to the increase in diarrhoeal diseases also observed at this time of year (see figure 3). The changes in prevalence of diarrhoea occur slightly earlier than changes seen in prevalence of malnutrition.

Food security had improved over the last year. Out of 526 households surveyed, 53% affirmed they were able to eat more than the same time last year. Yet food remained a significant concern, ranked third after income and owning one's own house as the main preoccupation. Food was also the primary reason people gave for taking loans. As the bulk of Kabuls population is almost exclusively dependent on purchase of food, the lack of regular incomes directly affects food security at a household level. People regularly reduce food quality, i.e. stop buying eggs or meat, when faced with insufficient income. In the poorest areas, i.e. central Bazaar (A), low serviced east (D), and in remote north (H) in figure 1, there are fewest vegetable gardens and therefore even more limited self-reliance. Indeed these three zones are also the most crowded, with some of the lowest average salaries.

Household information

Results from the household level data collection showed an overwhelming reliance on daily waged labour throughout the city. One third of

Fieldwork took place on October 2003. Depending on the size of each livelihood zone, one to two neighbourhoods (gozars) were selected to represent the zone. Once selected, the team then underwent further data collection at the community and household level. On average, 50 household interviews (randomly selected) were conducted in each zone. A total of six extensive group discussions were also held with women throughout the city, to gain an understanding of womens specific vulnerability. At least one male focus group discussion was also conducted in each livelihood zone.

The team identified the most vulnerable gozars, regardless of their zone location, to ensure a qualitative coverage of these areas. Focus group and semi-directive interviews were conducted in these gozars, to develop a profile of living conditions and coping strategies.

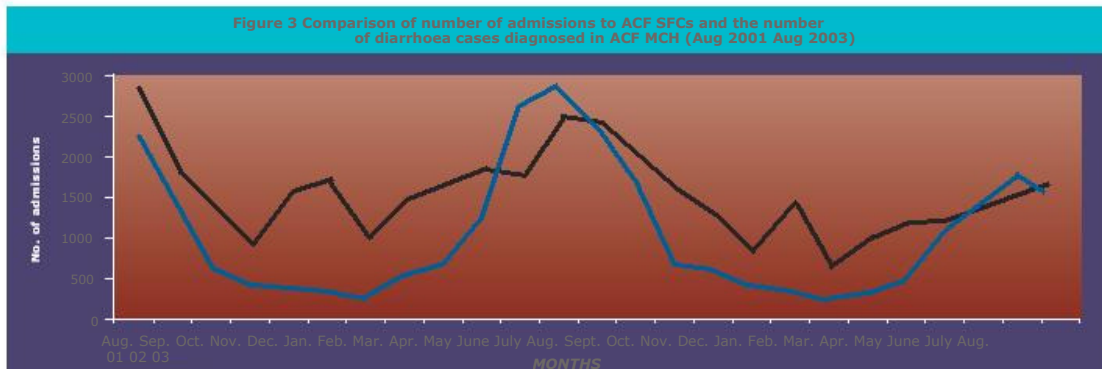
In parallel, discussions were also held with returnee families in different parts of the city.

Within these areas, it was found that people were specifically at risk due to their physical location, i.e. they were hillside communities with new settlements in dry riverbeds. The lack of available land in the city has pushed people to settle in more and more precarious locations. Hundreds of new houses being built illegally can be seen all over the city, the majority perched on steep hillsides. These are characterised by greater exposure to environmental hazards, poor water and sanitation, with latrines being difficult to empty. They are also at higher risk in case of earthquake or flooding.

Status as a returnee does not seem to determine vulnerability. Indeed, many people returning from Pakistan and Iran arrived with assets. They already had social networks in Kabul, they received significant assistance from international and non-governmental organisations, and had at least one able-bodied male in the household. Similarly, those in temporary settlements were found to be no more vulnerable than other groups.

all parents are daily labourers. In seven of the nine zones, over 90% of the households primary income earners were on daily wage labour. Once again, zones A, B and H were more at risk compared to others, with more than 40% of families primary income earners being dependent on daily wage labour. In the areas with the poorest housing, like central Bazaar, or where there is a lack of services, like poor serviced east (D), income levels were lowest. Besides the actual amount of earnings, the insecurity linked to daily labouring renders the household more vulnerable to unexpected shocks and decreases coping capacity. Discussions with informants revealed that the irregularity of income was seen as even more of a problem than the limited daily wage rate.

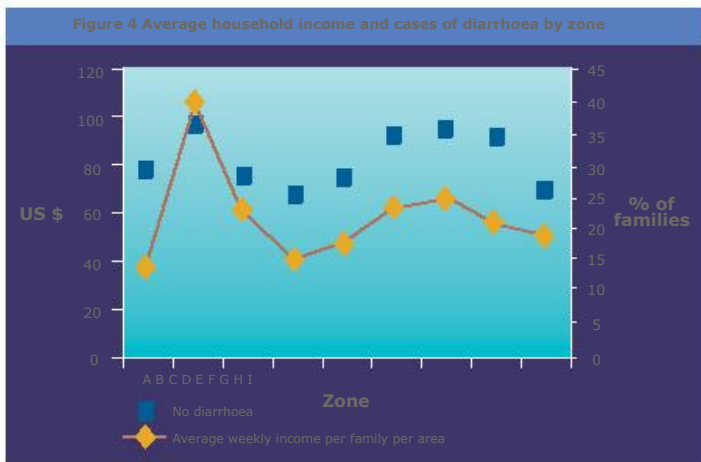
¹ An encashment centre is a centre set up by UNHCR through which the entire returnee population should pass in order to be registered for humanitarian assistance.





home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Field Article



A number of coping strategies were identified in focus group discussions and household interviews. These included:

- buying food on credit
- borrowing money from relatives
- taking loans
- sharing accommodation
- renting out rooms in own house to others
- reducing food diversity
- women secretly saving small portions of husbands daily allowance
- sale of jewellery
- sale

need to borrow or take out loans to meet food needs.

Conclusions and recommendations

At the time of the assessment, the perception of most of those in Kabul was that their current situation was positive with noticeable improvements, especially in the provision of services. ACFs recommendations arising from the assessment translate into geographic and sector specific interventions, first concentrating on the highly vulnerable zones A, D, H and G respectively, and at risk vulnerable

Evaluation

Tim Metherell/News use photographers, 2011



A 13 year old boy engaged in co-operative farming in D

of
assessments. Although no conclusions can be drawn, there is a striking correlation between the average income in a given area and the percentage of families who do not have children under five with diarrhoea (see figure 4).

In summary, the main household constraints identified were financial insecurity and irregularity of income opportunities for the majority of the population, increasing insecurity in housing due to increased demand, dependence on the purchase of food, and the

Table 1 Recommended interventions related to vulnerability assessment findings

Zone A: District 1

- *Extremely high global vulnerability*
Urgent need for assistance to Saraji, Bagh Ali Mardan, Reka Khana, Shor Bazar, and Kohi Chindawol
Sanitation: latrine rehabilitation
Health and hygiene education
Income generation and skills training
Lobbying for housing security

Zones D, H and G: Districts 7, 8, 9, 16 and north of District 10

- *Outside master plan, overall lack of services*
Water provision
Sanitation
Health education
Income generation
Lobbying for housing security

At-risk

- *Dispersed extremely vulnerable neighbourhoods*
Gozar Gah (District 7)
Cement Khana (District 16)
Deh Afghanan (District 2)
Afshar Selo (District 5)
Deh Dana (District 7)

households, with comprehensive programmes related to health, water and sanitation, income generation and housing capacity (see table 1).

The food security analysis component of the assessment highlighted a number of issues. Insecurity of regular income is the one most significant threat to livelihoods in Kabul where the majority of the population has to purchase food with no, or limited, alternative food sources. Unskilled workers (those working in construction, as porters, physical or manual labour) cannot depend on finding work on a regular basis, especially in winter. Demand for labour fluctuates with the markets and seasons. Subsequently, they are the least able to cope when shocks occur. Similarly, civil servants receive a modest salary and have been known to go unpaid for months at a time. Efforts to promote regular income among vulnerable groups should therefore focus on strengthening existing coping strategies.

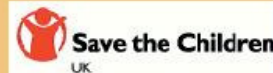
The main ACF recommendations for strengthening food security are:
Skills training for unskilled workers
Developing sustainable income-generating activities: stability of income over time should be favoured over one shot cash inputs that are limited in time
Developing sustainable income generating activities for women in the home
Identifying constraints to kitchen gardening in the most vulnerable gozars and developing kitchen garden projects in these gozars
Supporting and encouraging education at all levels, for both boys and girls

Even though the influx of newcomers is receding, Kabul remains a very attractive city for many, with people continuing to arrive from rural areas. The very high population concentrations justify continued support to the city, with a specific focus on neighbourhoods deprived of sufficient services.

Lessons From SC UK Evaluation in DRC

By Anna Taylor,
Nutrition Advisor, SC UK

Summary of
internal evaluation



Save the Children UK (SC UK) began implementing emergency health and nutrition interventions in eastern Democratic Republic of the Congo (DRC) in 1998, with initial activities in North and South Kivu and North Katanga. The current programme of work began in June 2002, when the geographical focus was confined to a number of health

Shaharak
Ruvassagi (District 5)
(District 16)

22

for
Field of Food Security Services, ACF Paris.
mailto:lisal@actioncontrelafaim.org
contact:
Lisa
Emoul,

focus focusing was to strengthen manage-
ment of the programme and better monitor
North
Kivu.
The
rationale
for

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Evaluation



g in DRC

its impact. An evaluation was carried out in November 2003 and was conducted as a participatory process involving SC UKs health and nutrition team and government partners.

Information was gathered through:

A review of programme documents

Key informant interviews

Group discussions with the health and nutrition programme

Observation visits and discussions with staff and patients at nine SC UK supported health/nutrition/ cholera facilities, and two other health centres in a total of six health zones

A review of registers and patient records at each of the feeding centres visited

Group discussions with community health volunteers involved in cholera prevention work in Kyondo and nutrition activities in Masisi (Kibabi Therapeutic and Supplementary Feeding Centres (TFC/SFC))

Key findings

Since June 2002, SC UKs emergency nutrition and health programme in eastern DRC has made considerable progress in implementation of planned activities and delivery of inputs/ outputs. Box 1 details the main

seized opportunities for working with and through local NGOs.

The evaluation highlighted a number of gaps and weaknesses in project design. Key amongst these were the following:

The large number of activities and wide geographical spread of the programme were ambitious, given SC UKs understanding of the constraints of working through partners in the context of chronic complex emergencies.

There has been insufficient understanding of the impact of training on the knowledge, skills, attitudes and practice of the health staff and supervisors in the workplace.

The critical question of the long-term recurrent costs of maintaining and staffing the newly constructed nutrition facilities (e.g. Kitumba, Bulembo) does not appear to have been considered in the project design.

The activities selected did not adequately address gender related issues or other non-economic factors affecting decision making processes at household level.

There has been lack of clarity over whether the intention was to try and reach as many communities and community based organisations (CBOs) as possible, or to use the experience in a few selected areas as a demonstration for advocacy and influencing purposes. Consequently, there is a risk of allowing project staff to initiate activities in more communities than can reasonably be managed.

The project plan to train families and support staff for integrated livelihood activities calls for a very different set of skills and

wide geographical spread and many different activities and partners makes heavy demands on management and logistics. Supervision and support carried out at a distance is costly, particularly if it involves travel by air.

The investment in time, skills and resources to ensure a high quality of service at therapeutic and supplementary feeding centres should not be under-estimated, particularly where services are implemented through local partners.

A clear, comprehensive National Nutrition Protocol is an important tool for improving the management of severe malnutrition. However, a system needs to be developed so that TFC staff can provide feedback on the practical lessons, observations and issues from implementation of the Protocol. This information could be used to inform further refinement of the Protocol at national level.

Health officials/hospital directors need to appreciate the importance of ensuring that TFCs are staffed by teams of nutritionists and nurses trained and supervised to implement the National Nutrition Protocol. The practice of rotating new nurses to a centre each month is not an effective strategy. The management of severe malnutrition calls for a combination of nursing and nutrition skills, these skills can only be built over a period of time working in feeding centres.

When planning rehabilitation/construction work for health/nutrition facilities, it is important to consider the full package of requirements to meet international standards for emergencies. If it is not possible for the project to support all aspects of the package (e.g. water and sanitation

project activities of

The programme has contributed to enhanced skills and capacity of government and NGO staff - especially in nutrition and cholera prevention, improved access to basic health and nutrition services, and greater involvement of communities, including children, in health, nutrition and HIV/AIDS interventions. Implementation of the National Nutrition Protocol is well underway. Routine monitoring reports suggest that therapeutic and supplementary feeding centres have achieved Sphere Minimum Standards on several key indicators.

On the other hand, the performance and quality of the work has been constrained by a number of factors, not least the wide geographical spread of the programme, engaged in a diverse range of activities and often lacking in clear focus. Difficulties working at a distance through poorly motivated government partners and the absence of a Protocol (memorandum of understanding) with Provincial/Zonal Health Bureaux to delineate roles and responsibilities between SC UK and government have also hindered progress. Other limitations have included weak logistics support for the programme activities, reported problems with cash flows to carry out the work, and weaknesses in management and administration capacity internally and in government structures. Episodes of insecurity have also hampered activities.

The decision to work through existing structures, in partnership with local government authorities, local NGOs, UN agencies and other international agencies was appropriate for the context of eastern DRC. A significant strength of the programme approach has been the flexibility to switch to and from an emergency mode, while following developmental principles - for example, the flexibility to open and close nutrition centres according to findings of nutrition surveys and local needs in specific localities. The project has adapted to the changing needs and policies of government as the

experience

The emergency health and nutrition team. The appropriateness of the seeds and tools distribution component in collaboration with the Food and Agricultural Organisation (FAO) is questionable. It appears that no studies were conducted by FAO or others to find out if seeds and tools were needed, if people had land for cultivation, or indeed, if seeds and tools were an appropriate means of reducing the recurrence of malnutrition in the DRC context.

Lessons learned

Amongst the many lessons learnt, the following were key to nutrition programming:

Realistic assessment of the capacity, skills, time and resources required to implement a project in a context such as eastern DRC is essential at the design stage. A programme with a

facilities,

in communities) support from government, communities or other agencies. should

The recurrent cost implications of constructing new buildings should be carefully considered before finalising plans. Temporary structures for feeding centres may be a more cost effective option.

Prompt analysis of nutrition survey data is essential for mounting a timely response to high levels of malnutrition. If there is limited capacity within the government system for this work, SC UK could offer technical support.

For further information, contact Anna Taylor, Nutrition Advisor, SC UK, email: A.Taylor@scuk.org.uk

Box 1 Main project activities

- Construction/rehabilitation of health and nutrition facilities at selected sites
- Provision of essential equipment and recurrent supplies (medical/non-medical)
- Training and support to health staff on topics such as nutrition, cholera prevention/management, disease surveillance, malaria, rational drug prescribing, vaccination, supervision systems and PRA/PLA techniques
- Facilitating vaccination activities in areas where coverage rates are low
- Strengthening early warning systems for communicable diseases
- Awareness raising on HIV/AIDS among youth/school children
- Conducting nutrition surveys/screening for malnutrition, and establishing, supporting and closing feeding centres
- Distribution of seeds and tools provided by the Food and Agricultural Organisation (FAO) and training local agronomists and community volunteers in improved agricultural techniques
- Studies to get a better understanding of the health/nutrition situation and needs of communities
- Pilot activities such as operational research on community financing mechanisms, community nutrition and early warning systems to test out approaches

processes of government to the
and public participation improved. It has also

Documentation and dissemination of lessons learned and advocacy
scaling

up
or
replication
by
others

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Agency Profile



Nutraset, 2004

Loading onto trucks at the Nutriset site

Ona freezing cold Tuesday in February, at nine o'clock in the morning, I was the only person to get off the Eurostar service at Frethun, Calais. Met by Beatrice Simkins (in charge of NUTRISET's international communication and development), we embarked on a two hour drive through fairly uninspiring Normandy countryside until we arrived at the NUTRISET premises nestled amongst fields of cows and horses. The distinctive blue and white building, although out of place in such a rural setting, seemed somehow appropriate for an organisation which is unique in the humanitarian field.

On my arrival, I was introduced to two of the directors, Isabelle Sauguet and Michel Lescanne. Michel, who is the founder of NUTRISET, originally worked in the Research and Development section of a dairy industry. He had long wanted to set up a department specifically for developing food aid products within the industry but met with resistance. Hence the birth of NUTRISET.

NUTRISET was established in 1986. It is a private company and was the first company to produce a fortified milk based product for nutritional rehabilitation of the severely malnourished. The now ubiquitous F100 and F75 therapeutic milks produced by NUTRISET were developed out of the work of the ACF Scientific Committee. NUTRISET's primary aim is to produce food exclusively for humanitarian emergencies. It is independent of any financial or industrial lobby and food is only provided for NGOs and UN agencies. NUTRISET has a production capacity of around 30 metric tons a day, with 35 staff working in production, logistics, development, finances and quality and research. As Isabelle explained, all

Address: -----, NUTRISET
 Te l: -----, +33 (0)2 32 93 82 82
 Fax: -----, +33 (0)2 35 33 14 15
 Email: -----, nutriset@nutriset.fr
 Internet: -----, www.nutriset.fr
 Formed: -----, 1986
 Director: -----, Michel Lescanne
 HQ staff: -----, 32
 Annual budget
 (2003): ~~Turnover of~~ -----, 10 million euro

towards helping children through humanitarian relief.

NUTRISET has a large research and development section, which devotes itself to improving and adapting products to emergency conditions. In other words, developing products that can withstand lengthy transport, harsh climates and can be used in areas where there is limited or contaminated water supplies. Much of the department effort goes into improving product specification, e.g. increasing the shelf-life of products. Isabelle described how NUTRISET may occasionally be contacted by agencies who have not been able to use donated therapeutic milks due to excessive orders or mis-planning, i.e. predicting demand that never materialised. This happened recently in Zimbabwe. Agencies may be worried about expiry dates and wastage. In these situations, NUTRISET are able to issue a checklist of questions and tests, which if followed, can show whether the products shelf-life can be extended. If the product is still viable NUTRISET will re-issue a certificate with an extended shelf-life.

plant. On the day of my visit, the plant was idle with no batches due for production. This allowed me to see the plant and hear about its workings and the rigorous quality control measures that are in place food science was never my strong point.

NUTRISET receives support from the French government agency for innovation (ANVAR) to develop products. However, if successful (and so far, most products have been), then the loan has to be repaid. Technical advisors include a nutritionist, biochemist and polymer scientist. The company is involved in many research projects with NGOs and academics striving to improve food products for emergencies. A large proportion of profits are re-invested in research, with 80% of products developed through research. Products are either standardised or customised.

Products ¹ can be classified under four headings;

- i) Foods for treatment of severely mal nourished, e.g. therapeutic milks (F100 and F75), Plumpynut, ReSoMal, therapeutic CMV (Minerals and Vitamins Complex)
- ii) Supplementary food for the general population, e.g. SP 450
- iii) Micronutrient supplements, e.g. QBmix, zinc tablets, Plumpysauce
- iv) Foods for infants and young children, including a special food for children born to HIV+ mothers

Current new products include QBmix, designed to prevent micronutrient deficiencies (especially Niacin, B1 and C). This is an aromatic paste, which is a condiment for meals (see field article in this issue). NUTRISET are also working on designing new alternatives for infant milk formula

regarding concerns about the ethics of NUTRI-
SET and the fact that it is primarily geared

After dressing up in sterile clothing (blue and
white), I was shown around the production

for
HAY
programmes.
All products are patented by Nutriset

24

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Agency Profile

NUTRISET have introduced quality control standards that combine food and pharmaceutical industry standards. The factory follows the Hazard Analysis Control of Critical Points system (HACCP), which is acknowledged good manufacturing practice. There have been a number of successful audits by French government and clients. Each product has to receive a NUTRISET certificate of conformity before dispatch and all products are traceable to batch numbers and raw materials in case of problems.

NUTRISET have five packaging lines and are able to respond to emergencies all year round by working 1-3 shifts per day. The strategic location of the factory provides easy access to main European ports and airports and NUTRISET have their own customs clearance on site by special agreement with French customs. This obviously saves time. The company maintains stocks of fresh finished products, allowing it to meet any order immediately (around 40 tons of Plumpynut and 100 tons of F100). NUTRISET can organise transport to final distribution points if required, although agencies like MSF want to use their own logistics systems. They can set up a 24 hour or day crisis unit if needed and load produce within an hour. When there are large emergencies, extra temporary staff will be recruited (many regularly work for NUTRISET). As

Michel remarked all staff feel responsible and there is a hands on deck mentality when there is a need to prepare large quantities of food urgently. Their turnover of products is of about 80% to Africa and 4% to Middle East countries, with the remainder going elsewhere.

Isabelle explained that as NUTRISET is a private company with only three directors, there is a lot of autonomy and little prospect of the ideals of the organisation being compromised. Unlike agencies in the public sector, they are able to work in areas they want to work in and the financial independence of the company means they don't have to look for funds to other shareholders who may subvert direction.

NUTRISET are constantly developing new products to assist in research. For example, there is currently a study in Malawi on a product based on the idea that amino-acid deficiency is a cause of Kwashiorkor. Another study is ongoing in Malawi on selenium and B vitamin tablets and their impact on HIV positive adults. A third study in Tanzania is comparing the impact of a combined zinc and iron tablet with placebos. Nutriset has developed quick dispersible zinc tablets for World Health Organisation (WHO) studies on diarrhoea in India, Zanzibar and Nepal. This is now leading to a technology trans-

fer in Bangladesh for scaling up nation wide. The WHO wants Nutriset to transfer this technology to other countries also.

Isabelle and Michel both agreed that the two biggest, and not unrelated, problems that NUTRISET face are the perception that they are like some kind of money seeking agribusness, and the difficulties of getting NGOs to start using new products. Some donors are reluctant to fund NGOs for trials. MSF seem to be an exception and readily try new products.

Having spent a day meeting staff and being shown around the production plants and research and development areas, I was dropped off at the nearby medieval city of Rouen to spend the night before catching a train back to London. My over-riding impression of NUTRISET is that it is a unique entity, which although run along commercial lines, fulfils an essential role in a public sector arena where risk taking and innovation is unusual, unless born out of the necessity of crisis. Basically, NUTRISET stands or falls on the basis of producing affordable foods that do the job. Therein lies their accountability. In a profession where the knee-jerk perception of the private sector is negative, NUTRISET would seem to offer a refreshing antidote and an ideal model for potential private and public sector partnership.





Nutriset, 2004

Production line at the Nutriset factory



Nutriset, 2004



Marie McGrath, Sierra Leone, 1998

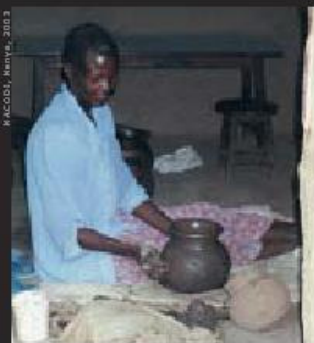
Putting Nutriset packaging to good use in Sierra Leone

Packaging at the Nutriset factory

25

home cd3wd ar cn de en es fr id it ph pt ru sw

Field Article



A mother engaged in pottery as an economic activity in Obera Village



Infant Feeding Alternatives for HIV Positive Mothers in Kenya

By Tom Oguta, Abiud Omwega and Jaswant Sehmi



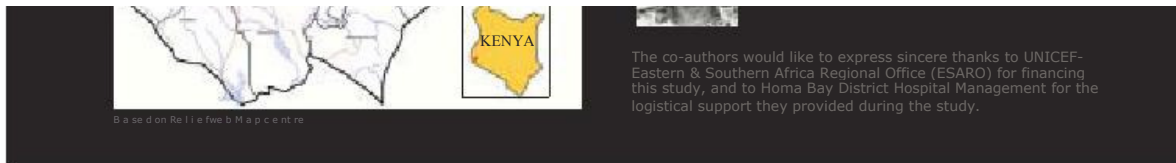
Tom Oguta is currently a PhD student of Nutrition at the University of Nairobi. He has worked as a Research Officer at KIRDI (Kenya Industrial Research & Development Institute) in several research programmes, including HIV/AIDS & Infant Feeding studies, food security evaluations and micronutrient-fortified food efficacy studies in Kenyan children.



Dr. Abiud Omwega is a Senior Lecturer in the Applied Nutrition Programme, Department of Food Technology and Nutrition, University of Nairobi. He has worked with many NGOs and CBOs to develop community based nutrition programmes, including those for the care and support of people affected with HIV/AIDS.



Dr. Jaswant Sehmi is a Lecturer in the Department of Food Technology & Nutrition at the University of Nairobi. She has wide experience in food analysis, nutrition surveys, epidemiological studies (including HIV/AIDS) and monitoring of clinical & malnutrition cases.



The HIV pandemic sweeping southern Africa and other parts of sub-Saharan Africa is increasingly being perceived and described as a chronic emergency. Innovative and relatively new types of nutrition/food security/HIV programming are emerging to address the growing HIV crisis. These include PMTCT, MTCT plus, OVC and NCP programming and home based care. Many of these programmes are being rolled out under Protracted Relief and Recovery Operation (PRRO) arrangements in regions recovering from recent emergencies, i.e. southern Africa. However,

as these programmes are relatively new, there is enormous headway to be made in defining optimal design and practice. The article below describes a study undertaken to help inform PMTCT programming practice. It highlights the dilemma for HIV positive mothers between using home prepared formula (in this case using cows milk) which is extremely poor in micro-nutrient content, and infant formula which is nutritionally better but may be impractical for many contexts in terms of cost, supply and sustainability (ed).

Mother-to-child Transmission (MTCT) rates for HIV are estimated at 25-45% in the primarily breastfed population of Sub-Saharan Africa. In Kenya, an estimated 300,000 newborn babies are at risk if HIV infection every year, with between 75,000 and 135,000 infants actually infected. Over 75% of these do not even celebrate their fifth birthday. If a mother is infected with HIV, it may thus be preferable to replace breastmilk to reduce the risk of HIV transmission to her infant.

For infected mothers living in poor conditions in developing countries, however, it is important to consider very carefully the risks related to not breastfeeding and whether there are alternative feeding methods. In a rural community, where access to clean water and sanitation is inadequate, where families are too poor to afford enough fuel to prepare food and to sterilise feeding bottles or to buy sufficient infant formula, deaths

further aggravated by cultural or social stigmas that a community may attach to substitute feeding and to HIV/AIDS in general. Hitherto, there has not been good data available on the relative risks and benefits of different feeding options.

As part of a concerted effort within Kenya to prevent MTCT of HIV, a collaborative programme was initiated in three pilot sites where HIV positive pregnant women were identified and provided with free anti-retroviral (ARV) drug and infant formula feed regimens. In order to inform this study, the Applied Nutrition Programme at the University of Nairobi was asked to conduct a study on alternative feeding practices in one of the project sites (Homa-Bay District)^{1,2}

The purpose of this study was to assess the feeding alternatives for infants born to HIV-positive mothers in the context of vertical trans-

To explore the prevailing alternative feeding practices in the community and among the HIV- positive mothers.

To explore the factors affecting mothers decision and choice of the various feeding options.

List of abbreviations	
ARV	Anti-retroviral
MTCT	Mother To Child Transmission
NCP	Neighbourhood Care Programmes
OVC	Orphans and Vulnerable Children
PMTCT	Prevention of Mother to Child Transmission

¹ Other parts of the study, not including this article, have been accepted for publication in the East African Medical Journal.

² [CiteSpace](#)

from diarrhoea and respiratory
infectious diseases from HIV. The problem is

26

MISSION
The study were:
HIV.
The
specific
objectives
of
the

Case
study in Homa Bay District, South Western Kenya.
OGITA, Om J, OMWEGA Abiud M and Sehmi Jaswant K.
Feeding
Alternatives
for
HIV
positive

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Field Article

Profile of study group

The study population consisted of an observation group of HIV positive mothers with children aged 0-2 years old in Homa-Bay District Hospital, and selected respondents from the rural population as case studies, key informants or focus discussion members. Homa-Bay district (with a population of about 350,000) is inhabited by the Luo ethnic group and is one of the Kenyan districts with the highest HIV prevalence (24%). A number of socio-economic factors are thought to have contributed to the rapid spread of HIV/AIDS in this community:

Widow inheritance/remarriage

As the majority of the population do not know their sero-status, the cultural practice of remarriage is likely to favour the spread of HIV/AIDS.

Fishing industry and migrant fishermen

Most people involved in the fishing industry in the district either stay away from their families or are single. Others are widowed having lost their spouses, probably from AIDS, and gone to seek a source of livelihood at the beaches.

Concept/ belief of Chira

Belief in the concept of chira (death or curse arising from failure to abide by traditions) is rampant and even when death occurs as a result of AIDS, some people still believe that it was as a result of chira and therefore no special precautions are taken against possible transmission of HIV by prospective sexual partners.

Polygamy

The cultural ideal that a man should have many wives is still widely held by many people in the district and more than 50% of married women

live in polygamous unions. Having multiple partners is one of the recognised risk factors for spread of HIV/AIDS.

Information gathering

Using qualitative research tools, four focus group discussion (FGD) sessions were conducted, with eight members in each session (16 women and 16 men). The women participants were aged 18-45 years while their male counterparts were between 20-54 years old. Five experienced and/or elderly women, aged 45-75 years, participated in key-informant interviews on areas related to traditional and contemporary alternative feeding practices.

Eleven HIV-positive mothers were observed and monitored. An additional four women participated as case studies who, for various reasons,

Table 1 Alternatives to maternal breastfeeding considered for feeding infants of HIV positive mothers in Homa-Bay District

Option	Characteristics	Indications/ Contra-indications
Commercial infant formula/ formula milk	Based on modified cows milk or soy protein. Closest in nutrition composition to breastmilk	The family has reliable access to sufficient formula, clean water, fuel, utensils, skills and time to prepare it accurately and hygienically.
Home prepared formula	Made with fresh animal milks, dried milk powder or with evaporated milk. Additional micronutrients, like iron, zinc and vitamins A, C and folic acid are required	Care is needed to avoid over-concentration or over-dilution.
Unmodified cows milk	Unmodified cows milk is not recommended for infants under six months of age	Unmodified cows milk could be considered as an exceptional option by the HIV positive mother when the supply of cows milk is reliable and affordable for the six months; the family lacks resources, time and fuel to modify cows milk to make home prepared formula; the family will be able to offer extra water and monitor

		generation; available/affordable for the family.
Early cessation of breastfeeding and heat-treatment of expressed breastmilk	Early cessation of breastfeeding and heat-treatment of expressed breastmilk reduces the risk of MTCT. Early cessation reduces the length of time for which an infant is exposed to HIV through breast milk. The optimum time for early cessation of breastfeeding is not known.	It is not advisable for an HIV positive mother to stop breastfeeding as soon as she is able to prepare and give her infant adequate and hygienic alternative feed (WHO, 1998)*. It could be a good option for those who find it difficult for social and cultural reasons to avoid breastfeeding completely.
Pasteurised breastmilk	Pasteurisation of expressed breastmilk involves heating to about 65°C for 30 minutes, or boiling and then cooling in a refrigerator or cold water. Heat-treated expressed breast milk is still nutritionally superior to other milks, though heat-treatment reduces the level of the antibodies.	May be a good option especially for sick and low birth weight (LBW) babies in a hospital setting
Wet nursing	Wet-nursing is practicable in some traditional settings where a relative breastfeeds the infant	UNICEF/UNAIDS/WHO recommends that wet-nursing be considered only when a potential nurse is informed of her risk of acquiring HIV from the infant in question; she has been offered HIV counselling & testing; she voluntarily takes a test and is found to be HIV negative; and when wet-nursing takes place in a family context with no payment involved. ⁷
Breastmilk banks	May be an option in some settings, for example as a source of breastmilk for a short time especially for the sick and LBW newborn.	It should be certain that donors are screened for HIV and that donated milk is correctly pasteurised.

* HIV and Infant Feeding. UNAIDS/WHO/UNICEF. Guidelines for Decision Makers. WHO, Geneva, 1998. Recently updated 2003. Full text available at <http://www.who.int>

Table 2. Comparisons and Contrast between AIDS and Chira

	AIDS	Chira
1.	Is recent, never heard of or hardly known 20 years ago.	Is traditional and is as old as the Luo tradition itself.
2.	Mostly caused by sexual contact with an infected person irrespective of the social approval of the relationship between the persons.	Results from a divergence/deviance from the social norms, even though this can be, but not necessarily related to, sexual contact.
3.	Has no known cure. It is a final clearance to death (fatal). Treatment cannot prevent the resulting death.	Is curable, by administration of many a herbal preparation to cleanse against social/cultural evil done by an individual.
4.	Has multiple rather than single opportunistic infections (associated illnesses) including diarrhoea, TB, skin infections, loss of hair, etc.	Mono-symptomatic, the commonest being gradual weight loss by a seemingly healthy individual, but if many, then comes sequentially with diarrhoea only coming in advanced stages.
5.	Can be diagnosed in the hospital.	Cannot be scientifically diagnosed in medical laboratory, but the victims health continues deteriorating.
6.	Is prevalent among the sexually active youth and reproductive age.	Knows no age. Even children can suffer because of their parents misdeeds.

7.	There is severe weight loss (wasting).	There is severe weight loss (wasting).
----	--	--

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Field Article

were using different feeding methods - see table 1 for infant feeding options considered³. Two of the four women were HIV positive, of whom one opted for infant formula and one continued breastfeeding. The remaining two were not tested for HIV- the first used cows milk to feed her infant, while the second woman was a wet-nurse.

Culture and knowledge of HIV/AIDS and MTCT

The respondents were asked a number of questions about HIV/AIDS, e.g. whether it is preventable and curable, and possibility of transmission from mother to child. The key-informants and members of the FGD were also asked for differences, or similarities, between AIDS and chira (see Table 2)

The FGDs found that women do not have authority over their sexual lives. The Luo cultural norms demand that a woman must have particular sexual contact with her husband to mark certain events like planting, harvesting, marriage and death rituals. One woman complained loudly:

How can you stop the spread of HIV/AIDS when some of our men move all over the villages inheriting widows even where it was strongly suspected the husbands died of AIDS. To make it worse, they do it secretly and the wife only discovers

later when the damage has been caused!

Alternative infant feeding practices amongst case studies

The four case studies are summarised in Table 3, and illustrate alternative feeding methods as practiced in the study area. They show examples of cows milk feeding, wet-nursing, formula feeding and breastfeeding among those with unknown sero-status and confirmed sero-status cases of HIV.

The four case studies looked at socio-economic profile, feeding choice, health and environment conditions, and knowledge of MTCT. Education varied from no formal education to secondary level. Number of births ranged from 1-11. Feeding choices were influenced by practicalities (e.g. mother died and so was wet nursed, or infant formula was provided free and so was used) and social influences (e.g. HIV positive mother feared stigmatisation if she did not breastfeed). The household conditions varied from poor, to acceptable. The health and nutritional status of the infants also varied, from wasted to well nourished. Three of the four women had good knowledge of how HIV may be transmitted in breastmilk and how feeding choice can influence transmission. All accepted cows milk and milk powder based feeds, and infant formula as feeding alternatives. Three of the four accepted wet nursing, while only one

accepted expressed breast milk/heat treated milk as an option.

Infant feeding practice and beliefs amongst the HIV-positive mothers (Homa-Bay District Hospital)

Cows milk feeding was practiced by the majority of the HIV-positive mothers as an alternative to breastfeeding. Knowledge regarding dilution was very poor, with some mothers over-diluting and others over-concentrating rendering the practice inappropriate.

Attitudes to surrogate breastfeeding are governed by rigid cultural norms. It is believed that a wet-nurse should not have sexual intercourse until the baby is old enough (about 3 years), otherwise the baby, if touched (soiled) by such a person, would die. Consequently, elderly women who have reached menopause are preferred as carers, in the belief that they are more likely to abstain from sexual intercourse. However, the increase in numbers of orphans due to HIV/AIDS

³ The PMTCT programme provided free infant formula and ARV only to mothers who were registered into the programme and counselled at the district hospital. However, the case studies included other women who did not have access to free infant formula supplies.

Table 3 Summary of case studies

Characteristics	Cases			
	Case I	Case II	Case III	Case IV

Socio-economic profile	Aged 210 Married, polygamous family Primary education Peasant farmer with annual income of about Ksh. 12,000 (US\$ 155) Given birth 3 times and has lost 2, last born, a boy was 3 weeks old	Aged 27 Married, monogamous Secondary education Runs a business with annual income of more than Ksh. 60,000 (US\$ 770) Given birth 4 times all alive. Last born 5 years old. Surrogate daughter is 2 months	Aged 21 Married, monogamous Primary education Runs retail business with annual income of about Ksh. 15,000 (US\$ 195) Given birth once, first born, a boy aged one month	Aged 34 Married, monogamous No formal education House wife with annual family income of about Ksh. 24,000 (US\$ 308) Given birth 11 times and has lost 4, last born, a boy was 2 months old.
Feeding choice	Cow milk, due to breast infections Baby has never been breastfed Milk is donated by grandmother Milk is boiled and diluted with a pre-boiled water Dilution ratio is 1:1 Fed on demand using a spoon Left-over taken by the mother	Wet-nursing, mother died after delivery Has to bathe and take a cleansing herbal concoction before she can breastfeed the surrogate daughter Introduced cow milk after growth faltering Milk is bought, boiled and diluted with pre-boiled water Dilution ratio is 1:1 Baby fed 8 times a day using a cup Left-overs taken by other children	Breastfeeding Fears not to breastfeed for possible stigmatisation by community and hostility from the spouse Breastfeed on demand Good attachment, but suckling is not effective Complements with cow milk due to growth faltering Milk is bought, boiled and diluted with a pre-boiled water Dilution ratio is 1:1 Milk is fed 3 times a day using a cup Left-over taken by the mother	Infant formula Opted for on advice from the hospital Formula is donated by the hospital freely Feed reconstituted with a pre-boiled water and fed on demand using a cup Occasionally boiled water is given to the baby A few times the baby has suckled from his mother while she is asleep Left-over taken by the mother
Health/environmental conditions	Mother non-tested for HIV Mother is sickling and suffers breast infections Delivered under a TBA, birth weight not established Baby looks healthy, but has not received any immunization Latrine available, but mother does not wash her hands regularly Drinking water fetched from a borehole is not treated	Surrogate mother non-tested for HIV Mother is well and healthy Baby has episodes of diarrhoea and slow growth From a birth weight of 2.7 kg, the baby weighs 4.1 kg after 6 weeks Mother maintains high sanitary and hygienic conditions	Mother is sero-positive for HIV and counselled Mother looks healthy and positive Baby is withdrawn and wasted From a birth weight of 2.9 kg, the baby's weight is down to 2.7 kg after 6 weeks Baby has thrush in the mouth Mother maintains high sanitary and hygienic conditions	Mother is sero-positive for HIV and counselled Both look healthy and positive Baby has normal growth Mother maintains high sanitary and hygienic conditions
MTCT Knowledge	Has some knowledge about MTCT but does not know it is preventable Accepts wet-nursing, formula, cow milk and milk powder	Has high knowledge about MTCT- timing of transmission and prevention Accepts wet-nursing, formula, cow milk and milk powder	Has high knowledge about MTCT- timing of transmission and prevention Accepts formula, cow milk, milk powder and expressed/heat	Has high knowledge about MTCT- timing of transmission and prevention Accepts formula, cow milk, and milk powder as possible feeding

alternatives possible feeding alternatives possible feeding breast milk as possible feeding alternatives alternatives

28



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Field Article

has led to more younger women wet-nursing. This is accepted, provided the surrogate mother bathes before she touches the baby every time she is involved in any sexual intercourse or the wet-nurse and the baby take some manyasi (herbal concoctions for cleansing purposes) to guard/protect against chira affecting the baby. In certain cases, mothers argue that wet-nursing is safe without these practices provided the baby is closely related (by blood) to the husband of the surrogate mother, e.g. wet-nursed by a co-wife. It is accepted that wet-nursed babies are more likely to survive than the ones fed on other alternative foods.

The idea of expressing and/or heating breastmilk was alien and unacceptable to mothers. Ideas about this included, it is not normal to milk a human, breastmilk cannot be expressed to produce enough to satisfy the baby, milking would make the breasts painful, and that breastmilk is so volatile that on heating all of it would evaporate.

The infant formula milks were believed to be good, in that they are hygienic and prepared to suit the baby's nutritional needs. However, they are expensive and are not available in the local markets.

All of the 11 HIV positive subjects reported that if they were to choose, given their sero-status, cows milk would be the most viable breast milk alternative due to its availability and accessibility. However, eight of the eleven also believed that infant formula would be the best option if it could be provided cheaply and made available.

Conclusions and recommendations

The choice of a breastmilk alternative is influenced by many factors, among them knowledge of MTCT, wealth, cultural attitudes (stigmatisation) and information attained from health facilities. Whilst wet-nursing may be a practicable infant feeding alternative at family level among the non-tested mothers, it was not for these HIV positive mothers. The use of infant formula as a breastmilk alternative by HIV positive mothers is limited by its cost, but would be the most suitable if it were provided freely or at a subsidised price. Cows milk was the most practicable breastmilk alternative in the study area. It is culturally acceptable, common/familiar and relatively accessible (produced or purchased) to many. However, micronutrient supplements were not available locally, at the district headquarters or through the PMTCT.

Based on our findings, we recommend that mothers attending antenatal care should be sensitised regarding vertical transmission of HIV.

Counselling of HIV positive mothers on cows milk feeding would be appropriate for those who produce the milk or have sufficient money to buy it, and PMTCT programmes should endeavour to improve the supply of cows milk in the area. The women should also be guided on how to prepare and modify cows milk and micronutrient supplements should be made available for them.

The UNICEF/UNAIDS/WHO recommendation that any potential wet-nurse should be confirmed HIV-negative and well informed of her risk of getting HIV from the infant is supported.

For further information, contact Tom Joseph Oguta, P.O. Box 30650-00100, Nairobi, Kenya.
Tel: 254-020-535966/ 630149 or 0722392499.
Fax: 254-020-555738
E-mail: ogutajoseph@yahoo.com or tjoguta@anp-uon.ac.ke

People in Aid



World International, 2008

Concern team in Sudan



World International, 2008

Offa Team 2 in Ethiopia



World International, 2008

Course participants at Help Age International Course on Ageing in Africa



Africa
Itelkenya
in
Februrary
2004,

29

home cd3wd ar cn de en es fr id it ph po ru sw

People in Aid

SCN

Between 21-25 March, 2004 the 31st session of the Standing Committee on Nutrition (SCN) was held in New York.



Emily Levitt (Cornell Uni), Andrea Moreira (SCN) and Lidan Du (Cornell Uni)



Anne Sophie Fournier (AAH USA) and Charlotte Dufour (Groupe URD)



Lane Vanderslice, Thomas Marchione (USAID) and Jeremy Shoham (ENN)





Moses Sinkala (Zambia) and Lackson Kasonka
(University teaching hospital, Zambia)



Lane Vanderslice, Robin Brinkley (USAID), Cheryl Jackson (USAID)
and Alberta Rost (US Dept Agriculture)

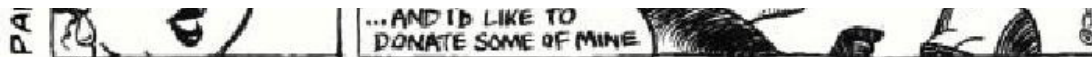


Fathia Abdallah (UNHCR), Marie McGrath (ENN)
and Hussein Mursal (SC Uganda)



Kiersten Israel-Ballard (Uni of California, Berkeley),
Jay Ross (Linkages/AED) and Judy Canahuati (FFP)





30

home cd3wd ar cn de en es fr id it ph po ru sw

People in Aid

On 20th April, 2004 a meeting was held by the Food Security, Livelihoods & HIV/AIDS Working Group (see this issue of Field Exchange).



From left to right:
Paul Rees Thomas
(Concern),
Tara Shoham
(CAFOD),
Micheal O'Donnell
(SC UK)
and Paul Harvey
(ODI)
(in background)



From left to right:
Nick Mathers
(UK AIDS Consortium),
Laura Phelps
(Oxfam),
Rebecca Brown
(AAH),
Amy Slorach
(Tear Fund)



Tara Shoham, Isobel Sauguet, Michel Lescanne and Beatrice Simkins,
pictured during the ENN visit to the Nutriset site in France

5 Nov 2004



Editorial team

Deirdre Handy
Marie McGrath
Jeremy Shoham

Design

Orna O'Reilly/
Big Cheese Design.com

Website

Jon Berkeley

Contributors for this issue

George Jacob
Evelyn Depoortere
Heloise Troc
Erin Grinnell
Tom Oguta
Abiud Omwega
Jaswant Sehmi
Liana Steenkamp
Dr Jill von der Marwitz
Charlene Giovannelli
Laura Wynnes
Anna Taylor
Donald S. McLaren
Ann Burgess

Thanks for the photographs to:

George Jacob
Evelyn Depoortere
Lisa Ernoul
Tom Oguta
Fernand Lambein
Orapin Banjong
Yasuo Tanaka
Jeremy Shoham
Valid International
Nutriset
Liana Steenkamp
Christelle Lecossais
Esrella Alves
Kamela Usmani

On the cover

Processing local Enset plants
Sodo district, Ethiopia.
G. Jacob, 2003

Field Exchange supported by:



of the Dublin meeting, circulated with the last issue of Field Exchange, was incompletely acknowledged. The picture of a young infant with a mother in North Dafur, South Sudan in 2001 was taken by Yvonne Grellerty, during an evaluation with SC UK.

Yvonne Grellerty, S. Sudan, 2001

The Emergency Nutrition Network (ENN)

grew out of a series of interagency meetings focusing on food and nutritional aspects of emergencies. The meetings were hosted by UNHCR and attended by a number of UN agencies, NGOs, donors and academics. The Network is the result of a shared commitment to improve knowledge, stimulate learning and provide vital support and encouragement to food and nutrition workers involved in emergencies. The ENN officially began operations in November 1996 and has widespread support from UN agencies, NGOs, and donor governments. The network aims to improve emergency food and nutrition programme effectiveness by:

providing a forum for the exchange of field level experiences strengthening humanitarian agency institutional memory keeping field staff up to date with current research and evaluation findings

helping to identify subjects in the emergency food and nutrition sector which need more research

The main output of the ENN is a tri-annual newsletter, FieldExchange, which is devoted primarily to publishing field level articles and current research and evaluation findings relevant to the emergency food and nutrition sector.

The main target audience of the Newsletter are food and nutrition workers involved in emergencies and those researching this area. The reporting and exchange of field level experiences is central to ENN activities.

The Team



Jeremy Shoham (Field Exchange technical editor) and Marie McGrath (Field Exchange production/assistant editor) are both ENN directors.



Rupert Gill is the new ENN administrator, based in Oxford. Rupert has worked previously in the field with Merlin, ACF and Oxfam in log/admin and water/sanitation.



Dan George is the new ENN finance assistant, working part-time in Oxford.

The Emergency Nutrition Network is a company limited by guarantee and not having a share capital.



GENEVA
FOUNDATION
International
Food in war

Registered
Registered address: Unit 13, Standingford House, Cave Street,
Oxford OX4 1BA, UK
EN Directors: Jeremy Shoham, Marie McGrath
Wales
number:
4889844

31





Emergency Nutrition Network
Unit 13, Standingford House
Cave Street, Oxford





[home.cd3wd.ar.en.de.en.es.fr.it.it.ph.po.ru.sw](#)



USAID Office of Food for Peace

Occasional Paper No. 4
March 2004

occas

The Impact of Title II Maternal and Child Health and Nutrition Programs on the Nutritional Status of Children

Anne Swindale, Megan Deitchler, Bruce Cogill and Thomas Marchione

Executive Summary

Over the past seven years, Title II Maternal and Child Health and Nutrition (MCHN) activities have evolved from predominantly facility-based food distribution programs targeted at undernourished children and their mothers, combined with some growth monitoring, to integrated community-based development programs with long-term health and sustainability objectives. The result of this shift has been a significant improvement in the nutritional status of children benefiting from these programs. This paper presents the results of a recent review of the impact of Title II MCHN programs on the prevalence of stunting and underweight in their target populations.

Information on the impact of the Title II MCHN program on child nutritional status was available for 29 programs. The review focused on Title II MCHN programs that ended in 2000 and 2001, for which final evaluation or annual results reports with data on

anthropometry were available. Of the 55 Title II MCHN programs with end dates in 2002, 25 (45 percent) were available for 25 (71 percent). In addition, final evaluation reports were available for four programs with end dates in 2002 (all in Ethiopia) and for a joint evaluation of all the Ethiopia programs. Approximately 6.6 million children benefited from the Title II MCHN programs that were reviewed.

The review of evaluations clearly shows that the Title II MCHN programs have been successful in improving the nutritional status (as measured by stunting and/or underweight) of children in their target populations. A large majority of the evaluations that reported on stunting (16 of 18) documented a reduction in the prevalence of stunting between the baseline and final evaluation on average stunting was reduced by 2.4 percentage points per year, from an average prevalence of stunting at baseline of 53 percent. The median length of time between the baseline and final evaluation was four years. The 95 percent confidence interval is -3.6 to -1.3; this clearly supports the conclusion that the programs were associated with a reduction in stunting among the target population. However, the averages do mask considerable variability in the results. The standard deviation for all evaluations is 2.3.

The Title II MCHN programs were also associated with a reduction in the prevalence of underweight in the target population. On average, underweight was reduced by 1.9 percentage points per year, from an average prevalence of underweight at baseline of 42 percent. Again, the 95 percent confidence interval (from -2.8 to -0.9) clearly supports the conclusion of successful reductions in underweight.



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Contents

SECTIONS	
1. Introduction	1
2. Methods	2
3. Results	3
4. Conclusion	8

ANNEXES	
Annex 1: Criteria used to classify the quality of program data and evaluation designs	9
Annex 2: Prevalence of stunting at baseline and final by quality of data/evaluation design: pre-post design without a comparison group	10
Annex 3: Prevalence of underweight at baseline and final by quality of data/evaluation design: pre-post design without a comparison group	10
Annex 4: Prevalence of stunting and underweight at baseline and final: pre-post design with comparison group, two programs with quality of data/evaluation = good	11

TABLES	
Table 1: Title II MCHN programs with data on the prevalence of child undernutrition	3
Table 2: Quality of data and evaluation design	3
Table 3: Age range of stunting and underweight indicators reported by Title II MCHN programs	4

FIGURES	
Figure 1: Average annual percentage point decrease in the prevalence of underweight by the age range	5

range Figure 2: Average total decrease in the prevalence of stunting and underweight by length of time of the program indicator	6
--	---

BOXES	
Box 1: An example of a pre-post comparison group evaluation design	7



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.swThe Impact of Title II Maternal and Child Health and Nutrition Programs on the Nutritional Status of Children

1. Introduction

Over the past seven years, Title II Maternal and Child Health and Nutrition (MCHN) activities have evolved from predominantly facility-based food distribution programs targeted at undernourished children and their mothers, combined with some growth monitoring, to integrated community-based development programs with long-term health and sustainability objectives. This paper presents the results of a recent review of the impact of Title II MCHN programs on the prevalence of stunting and underweight in their target populations, which demonstrates that this shift has resulted in a significant improvement in the nutritional status of children benefiting from these programs.

The United States Public Law 480 Title II development food aid program constitutes the single largest source of USAID funding focused on food security and nutrition. Food aid is a flexible resource that can be programmed for direct distribution or monetized to generate local currency to support development activities. Approximately half of Title II development resources (\$188 million in Fiscal Year 2002) were used in MCHN programs, which may also include water and sanitation activities. Prior to 1995, MCHN programs were predominantly facility-based programs focused on growth monitoring and food supplementation. The lack of necessary complementary interventions and the absence of a community-level focus hampered the ability of the programs to reduce the prevalence of undernutrition in the target populations. USAIDs 1995 Policy Food Aid and Food Security Policy Paper stressed that food transfer alone is not enough to achieve the goal of reducing malnutrition and that various other complementary activities are essential to achieve household food security. ¹

Currently, Title II MCHN programs revolve around a select set of interventions essential to household food security that have been proven to reduce maternal and child death and disease and combat undernutrition. Title II MCHN programs directly support proven interventions to improve

... Title II MCHN programs directly support proven interventions to improve child nutrition such as promotion of exclusive breastfeeding, appropriate complementary feeding and increased micronutrient consumption; prevention and treatment of preventable childhood diseases, including diarrhea; and improvements in ante-natal care. Some Title II MCHN programs also seek to create linkages between health and nutrition activities and the agriculture sector so that improvements in agricultural productivity and income may translate into better nutrition among households. The Title II MCHN programs predominantly target children under the age of two and their mothers, since children under the age of two are at the greatest risk of becoming undernourished and also receive the greatest benefit from preventative interventions. In addition to improving the design and implementation of Title II MCHN programs over the past several years, USAID and the Title II implementing partners have focused on improving the ability of the Title II MCHN programs to monitor and report the impacts of the activities on the nutritional status of children.

Through efforts such as the Title II MCHN program, USAID and its partners contribute to reaching the goal of halving the proportion of people who suffer from hunger and food insecurity between 1990 and 2015, as stated in the United Nations Millenium Declaration, signed in September 2000 by 189 nations, including the United States. The overall effort involves finding solutions to intractable poverty, hunger, malnutrition and disease; promoting gender equality and the empowerment of women; guaranteeing a basic education for everyone and supporting the principles of sustainable development. The target of halving hunger is measured by two key indicators: 1) proportion of population below minimum level of dietary energy consumption and 2) prevalence of underweight in children under five years of age. ²

¹Patricia Bonnard, Patricia Haggerty, Anne Swindale, Gilles Bergeron, and James Dempsey, Report of the Food Aid and Food Security Assessment: *A Review of the Title II Development Food Aid Program*, (Washington, D.C.: Food and Nutrition Technical Assistance Project, Academy for Educational Development, 2002).

²As viewed at http://www.developmentgoals.org/About_the_goals.htm

home.cd3wddvd.noexe.es.fr.id.jp.op.ru.sw
The Impact of Title II Maternal and Child Health and Nutrition Programs on the Nutritional Status of Children

The choice of a nutrition indicator to measure the poverty and hunger reduction goal is significant because of the relative ease of measuring and reporting on nutritional status and because good nutrition directly aids poverty reduction. A focus on nutrition enables an explicit connection to be made between actions to improve human capital and the special needs of vulnerable groups such as women and children. Ultimately, improved nutrition in these groups enables program benefits to be sustained across generations, reinforcing poverty reduction strategies.

2. Methods

Information on the impact of the Title II MCHN program on child nutritional status was available for 29 programs.³ The review focused on Title II MCHN programs that ended in 2000 and 2001, for which final evaluation or annual results reports with data on anthropometry were available. Of the 35 Title II MCHN programs with end dates prior to 2002, evaluations with information on program impacts on child nutritional status were available for 25 (71 percent). In addition, final evaluation reports were available for four programs with end dates in 2002 (all in Ethiopia) and for a joint evaluation⁴ of all the Ethiopia programs. Approximately 6.6 million children benefited from the Title II MCHN programs that were reviewed.

The reviewed programs reported a range of indicators of child nutritional status. The review focused on indicators of the prevalence of stunting and underweight (percent of children of a given age range with height-for-age z-score less than -2, and percent of children of a given age range with weight-for-age z-score less than -2, respectively). Stunting is an indicator of past growth failure (chronic undernutrition) and reflects a number of long-term factors including chronic insufficient food intake, frequent infection, sustained less-than-optimal feeding practices and poverty. Underweight reflects both chronic and acute undernutrition (being too short, too thin or a combination of the two).

A total of 18 evaluations (62 percent) reported on the prevalence of stunting among the target population; a total of 15 (52 percent) reported on the prevalence of underweight. Because the length of time between the baseline measure and the final evaluation measure varied, an annualized indicator was generated: percentage point change in prevalence per year. Table 1 presents a list of the Title II MCHN programs included in the review.

The quality of the data and the evaluation design as reflected in program documents

The quality of the data and the evaluation design as reflected in program documents must be kept in mind when interpreting the results reported in this paper, since all of the programs for which data were available were included in the analysis unless otherwise specified. The data and the evaluation design for each of the 29 programs reviewed was rated as either poor, average, good or unclear (See Table 2).⁴

³The review covered the Title II MCHN programs that had submitted copies of baseline and final evaluation reports and/or annual results reports to USAID, copies of which have been made available to FANTA. A follow-up of 10 programs not included in this study shows no systematic exclusion of poorly performing programs. Four excluded programs did not collect community baseline data or monitor community-wide nutritional results because they had not transitioned to the new program model (programs in Uganda and Peru.) Two Nicaragua programs were reoriented to respond to needs arising from Hurricane Mitch, so a comparison with the baseline would have been meaningless. Of the four programs with results gathered after this paper was completed, two reported improvement of height and/or weight measures of children under five, one reported deterioration of both weight and height, and one report shows improvements in one project area of a country and deterioration in another area. In the opinion of the authors, including these excluded reports would have not significantly altered the results of the study.

⁴ Annex 1 contains detail on the criteria were used to classify the quality of program data/evaluation designs.

Table 1. Title II MCHN programs with data on the prevalence of child undernutrition

5

Country	PVO	Data available on the prevalence of undernutrition		Country	PVO	Data available on the prevalence of undernutrition	
		Stunting	Underweight			Stunting	Underweight
Africa				Asia			
Benin	CRS	v		India	CARE		v
Ethiopia	CARE	v			CRS		v
	CRS	v		Latin America			
	EOC	v		Bolivia	ADRA	v	
	SCF	v			CARE	v	
	WV	v			FHI	v	
	all Title II v				PCI	v	
Gambia	CRS	v		Guatemala	CARE	v	
Kenya	CRS		v	Haiti	CARE		v
Madagascar	CRS		v		CRS	v	
Mozambique	Africare	v		Honduras	CARE	v	
	FHI	v		Nicaragua	PCI		v
				Peru	CARE	v	

Table 2. Quality of data and

Table 2. Quality of data and evaluation design

	Poor	Average	Good	Not clear
Number of Title II MCHN programs	6	5	8	10

3. Results

The review of evaluations clearly shows that the Title II MCHN programs have been successful in improving the nutritional status (as measured by stunting and/or underweight) of children in their target populations. A large majority of the evaluations that reported on stunting (16 of 18) documented a reduction in the prevalence of stunting between the baseline and final evaluation on average stunting **was reduced by 2.4 percentage points per year, from an average prevalence of stunting at baseline of 53 percent.** The median length of time between the baseline and final evaluation was four years. When results from the nine programs with stunting data rated average or good are examined, these results are even more impressive an average reduction of 2.7 percentage points per year were reported. The 95 percent confidence interval is -3.6 to -1.3 for all evaluations and -4.0 to -1.5 for the higher quality evaluations; this clearly supports the conclusion that the programs were associated with the reduction of stunting among the target population. However, the averages do mask considerable variability in the results. The standard deviation for all evaluations is 2.3 and 1.6 for the higher quality evaluations.⁶

⁵Twenty-four of the 29 programs reviewed had data on the prevalence of stunting and/or underweight. These were the programs included in the results reported in Section 3 of this paper. The remaining five programs were not included because they used non-standard indicators of child growth.

⁶Annexes 2 through 4 present the baseline and final evaluation prevalence data used in the analysis.

home.cd3wddvd.en.exe.master.dvd001/dvd1/OCW/NUTRITION/ffpOP4/EN/pg_... The Impact of Title II MCHN and Child Health and Nutrition Programs on the Nutritional Status of Children

The Title II MCHN programs were also successful in reducing the prevalence of underweight in the target population. On average, underweight was reduced by 1.9 percentage points per year, ⁷from an average prevalence of underweight at baseline of 42 percent. ⁸Again, the 95 percent confidence interval (from -2.8 to -0.9) clearly supports the conclusion that the programs are associated with reductions in underweight.

The variability in results has both programmatic and technical explanations. The Title II MCHN programs are implemented in a wide range of country contexts and cover a range of interventions types and quality. In addition, the age range for the indicators reported by the programs and included in the analysis varied considerably (see Table 3 below).

Table 3. Age range of stunting and underweight indicators reported by Title II MCHN programs

Age range of indicator	Percent of stunting indicators	Percent of underweight indicators
Up to five years old		
0-59 months	27.8	21.6
3-59 months	5.6	
6-59 months	27.8	16.2
24-60 months	22.2	
Up to four years old		
0-47 months	5.6	
Up to three years old		
0-35 months		5.4
6-35 months		2.7
18-36 months	5.6	5.4
24-35 months	5.6	2.7
Up to two years old		
0-23 months		43.2

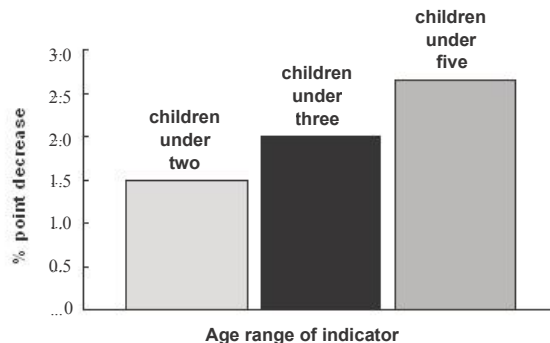
12-23 months	2.7
--------------	-----

While not statistically significant, the data do indicate a pattern where the magnitude of change is associated with the width of the age range of the indicator. In other words, those programs that measured children across a wider age range tended to report greater decreases in the prevalence of underweight (see Figure 1). This tends to support the argument that, while children under two should be the beneficiaries of program interventions, the measurement of the nutritional status of a broader age group may more completely capture the total magnitude of the impact of a program over time (e.g., five years) since it will include those children who are no longer active participants but who were likely to have benefited from program interventions when they were younger. Another explanation may be that the wider age range is correlated with the length of time in the program, so children who have been in the program for a longer period of time will show greater benefits.

⁷Standard deviation = 1.7.

⁸The average annual reduction was 1.8 percentage points in the seven programs with data rated as average or good.

Figure 1. Average annual percentage point decrease in the prevalence of underweight by the age range of the indicator*



* Children under two includes data from indicators of children 0-23 months; children under three includes 0-35 and 6-35 months, children under five includes 0-59 months, 3-59 months and 6-59 months. A similar chart was not generated for stunting data, because there are no stunting indicators reported for under twos or under threes. See Table 3.

One would expect that, if Title II MCHN programs are successful in addressing the causes of undernutrition, the total impact of the program on the prevalence of undernutrition would

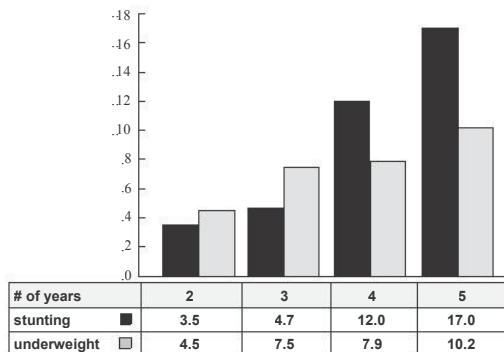
increase with the length of time that the community has benefited from the interventions. Figure 2 shows that this appears to be the case for both stunting and underweight (although, as with all of the disaggregated results reported in this paper, the sample size is too small and the variation is too large for the differences to be statistically significant).

Not only does the amount of change appear to increase with the length of time of the program, the rate of change, particularly for the reduction in the prevalence of stunting, increases dramatically when program length is longer than three years. This pattern supports the view that changing behaviors takes time and that shortening the length of Title II programs to three years, as has been suggested in order to increase the flexibility in programming of resources, might result in a significant loss in the potential to reach the program objectives of improving the nutritional status of children.

One limitation of the evaluations reviewed is that few of the evaluation designs included a comparison group, which would have permitted greater attribution of the results to the Title II MCHN program interventions. To be effective for attribution purposes, a comparison group needs to have similar characteristics to the intervention group, with the main difference between the groups being that the intervention group benefited from the program interventions and the comparison group did not. Since Title II programs target the most food insecure population in a geographic area, it is often difficult to identify a comparison group for attribution purposes because the population not targeted by the program is by definition less food insecure than the population that is targeted. However, some Title II programs have been able to take advantage of the phasing in of program interventions over a period of time to implement an evaluation design that includes a comparison group. See Box 1 for an example of the results from an evaluation carried out by CARE Honduras that used this approach.

home.cd3wddvd.no.exe.master.dvd001.dvd1.ocw.nutrition.ffop4.en/pg_... The Impact of Title II MCHN and Child Health and Nutrition Programs on the Nutritional Status of Children

Figure 2. Average total decrease in the prevalence of stunting and underweight by length of time of the program



In an attempt to control for secular trends in the countries, which may account for the improvement of children's nutritional status even in the absence of program interventions, the degree of improvement reported by the Title II MCHN programs was compared against national (or regional, where available) trends in the prevalence of stunting and underweight. ⁹Three-quarters of the Title II MCHN programs that reported on stunting showed better results than the national (or regional) trend; about 60 percent of programs reporting on underweight did better than the national (or regional) trend. This indicates the likelihood that at least some of the observed improvements in nutritional status are attributable to Title II program interventions.

The interaction of undernutrition with childhood infection and mortality is well recognized; undernutrition is a contributing factor in more than half of infant and child deaths in the developing world. ¹⁰Recently, a study to develop and validate methods for estimating changes in child mortality from

children's lives completed.¹¹Based on the models presented in the paper, it is now possible to estimate the lives saved and the impact on child mortality and under-five mortality from reductions in underweight children under five years of age.¹²Based on the number of beneficiaries of the Title II MCHN programs that were successful in reducing the prevalence of undernutrition, approximately 5.9 million children, we estimate that approximately 47,899 (range of 29,026 - 66,398) children's lives were saved annually over the past six years for a total estimated 287,394 (175,560 398,358) childrens lives saved.

⁹Data on national and regional trends in child nutritional status were obtained from the Population, Health and Nutrition Information Project (PHNIP) Data Online for Population, Health and Nutrition (DOLPHN) database (www.phnip.com/dolphn/) and the World Health Organization (WHO) Global Database on Child Growth and Malnutrition (www.who.int/nutgrowthdb/registration_form/welcome.html).

¹⁰David L. Pelletier, Edward A. Frongillo, Dirk G. Shroeder, and Jean-Pierre Habicht, A Methodology for Estimating the Contribution of Malnutrition to Child Mortality, *Journal of Nutrition* 124:2106S-2122S, 1994.

¹¹David L. Pelletier and Edward A. Frongillo, Changes in Child Survival are Strongly Associated with Changes in Malnutrition in Developing Countries, *Journal of Nutrition* 133:107-113, 2003 (available at www.fantaproject.org).

¹²Bruce Cogill, Simulation of Lives Saved for Ethiopia from reductions in child malnutrition, Draft, (Washington, D.C.: Food and Nutrition Technical Assistance (FANTA) Project, Academy for Educational Development, 2003).

Box 1: An example of a pre-post comparison group evaluation design

CARE Honduras has been implementing a Title II development activity (DAP) in Western Honduras since 1996. The DAP consists of three components: the Community-Based Health Services, Agricultural Extension, and Rural Opportunities for Employment and Development programs. A baseline survey of the proposed intervention area was carried out in 1997. A final evaluation survey was carried out in 2001.

One of the main objectives of the evaluation survey was to document the impacts of the integrated approach, where at least two of the three DAP components are implemented in the same community. The expansion of coverage of the integrated approach is the focus of CARE's new 2001-2005 DAP. The sample for the final evaluation survey was stratified into three groups: communities where only one of the three DAP components was implemented, communities where at least two of the three components were implemented (the integrated approach), and communities that had been included in the baseline but where the DAP had not yet been implemented. The latter group was used as a comparison group for comparison with the integrated approach communities.

The evaluation found a statistically significant reduction

in the integrated approach communities when compared with the communities that had not yet received any of the DAP interventions. The baseline prevalence of stunting among children aged 24 to 59 months was 55 percent in the program area (which included communities where CARE planned to implement the integrated approach and communities where CARE did not plan to intervene during the period of performance of the first DAP). In communities where the integrated approach had been implemented, stunting was reduced to 47 percent by 2001, while it had increased to 66 percent in the communities that had not received any CARE interventions. The baseline prevalence of underweight children (aged 12 to 23 months) was 33 percent. Underweight was reduced to 28 percent by 2001 in the integrated communities, while no change in the prevalence of underweight was documented in the non-intervened communities.

Source: CARE Honduras Food Security Program, Results of Quantitative Survey for Final Evaluation FY1996-2000 and Baseline Survey FY2001-2005, 2002.

home.cd3wddvd.noexe.fr/id/0ph00ru.sw The Impact of Title II MCHN and Child Health and Nutrition Programs on the Nutritional Status of Children

4. Conclusion

The Title II MCHN programs have demonstrated considerable improvements in both program design and performance reporting over the past six or seven years. The results of the efforts made by USAID and its partners have helped improve the nutritional status and save the lives of hundreds of thousands of children. On average, the prevalence of chronic undernutrition among children in the target population was reduced by 2.4 percentage points a year. The review also shows that the programs were associated with a reduction in underweight and that the amount of improvement increases with the length of time of the program. These results should help strengthen the ability of the Title II implementing partners to set programmatic targets for improvements in nutritional status of children.

However, the review also found considerable variability in the quality and comparability of the data reported by the Title II MCHN programs. Continued efforts to improve the quality of the data collected and reported by the Title II MCHN programs are needed and will strengthen the ability of USAID and its partners to demonstrate the important achievements of the Title II program.

8

Annex 1. Criteria used to classify the quality of program data and evaluation designs. Note that all judgments were limited in that they were made based only on the reported documentation available to FANTA*

Poor	Average	Good	Unclear
<p>Incomparable Baseline/Final Evaluation Sampling Universes</p> <p>Limited comparability between baseline and final data due to changing geography of program and different geographical areas represented by respective data points</p> <p>Potential errors in anthropometric data observed in review of hard copy reporting, adding question and unreliability to use of data for analysis purposes</p>	<p>Fair evaluation designs, but certain details may demonstrate compromised comparability, e.g., the reported age range for baseline and final data comparison may be unclear or incomparable (more than six month range of discrepancy between ages reported), the geographic universe for baseline and final data comparison may have changed slightly or the sample of localities taken for data collection does not meet the statistical requisites to be considered</p>	<p>Comparable baseline and final sampling universe</p> <p>Certain cases have comparison groups included in final evaluation design</p> <p>Only minor discrepancies in reporting of anthropometric data and age ranges in various Cooperating Sponsor (CS) documents (< one percentage point difference in anthropometric data and up to six months difference in reported age range discrepancies)</p>	<p>Anthropometric data reported in various CS documents may be discrepant or the accuracy of the data may be unclear, adding question and unreliability to use of data for analysis purposes</p> <p>Detail on the applied evaluation design is either not reported or remains unclear from description contained in CS documents available</p>

	representative interven- tion area		
--	---------------------------------------	--	--

*Note that all judgments were limited in that they were made based only on the reported documentation available to FANTA.

home.cd3wddvd.noexe.master.dvd001.dvd1.ocw.nutrition.ffop4.en/pg_... The Impact of Food In Security and Child Health and Nutrition Programs on the Nutritional Status of Children

**Annex 2. Prevalence of stunting at baseline and final by quality of data/evaluation design:
pre-post design without a comparison group**

Quality of data/ evaluation	Prevalence of stunting (HAZ = -2)	
	Baseline	Final
Good	66.6	54.5
	61.1	39.5
	55.8	53.1
	54.9	47.2
	52.2	43.7
Average	50.0	43.8
	50.6	30.3
	41.3	32.0
Poor	32.8	28.7
	52.5	42.5
	48.5	56.0
	43.3	41.1
Not clear	41.2	34.6
	68.7	45.2
	57.9	58.0
	56.8	34.4
	48.6	37.3
	13.6	9.0

**Annex 3. Prevalence of underweight at baseline and final by quality of data/evaluation design:
pre-post design without a comparison group**

	Prevalence of underweight (WAZ)
...	

Quality Evaluation data	WPC	
	Baseline	Final
Good	24.8	25.7
	24.8	15.1
Average	39.0	37.0
	32.5	25.3
	30.9	24.3
Not clear	52.9	34.8
	45.0	40.3
	42.9	32.9
	42.5	34.0
	37.2	21.8
	34.0	35.3
	29.8	17.5
14.9	15.9	

Annex 4. Prevalence of stunting and underweight at baseline and final: pre-post design with comparison group, two programs with quality of data/evaluation = good

Program 1

Prevalence of stunting (HAZ = -2)			Prevalence of underweight (WAZ = -2)		
Baseline	Final intervention group	Final comparison group	Baseline	Final intervention group	Final comparison group
54.9	47.2	65.8	33.3	27.7	33.5

Program 2

Prevalence of underweight (WAZ = -2)		
Baseline	Final intervention group	Final comparison group
54.0	48.0	52.0

[home.cd3wd.ar.cn.de.en.es.fr.it.lt.ph.po.ru.sw](#)



Food and Nutrition Technical Assistance Project
Academy for Educational Development
1825 Connecticut Ave., NW
Washington, D.C. 20009-5721
Tel: 202-684-8000
Fax: 202-684-8432
E-mail: fnm@aed.org
<http://www.fnmproject.org>

This publication was made possible through the support provided to the Food and Nutrition Technical Assistance (FANTA) Project by the Office of Program, Policy and Management and the Office of Fund for Peace of the Bureau for Democracy, Conflict and Humanitarian Assistance and the OP-Plan.

the Bureau for Global Health at the U.S. Agency for International Development, under terms of USAID/HRW agreement No. HRN-A-00-98-01040-1, provided to the Academy for Educational Development (AED). The opinions expressed herein are those of the author(s) and do not necessarily reflect the views of the U.S. Agency for International Development.

Recommended citation:

Swindale, Anne, Dettler, Megan, Gyall, Bruce, and Marchione, Thomas. *The impact of Title II Maternal and Child Health and Nutrition Programs on the Nutritional Status of Children*. Washington, DC: Food and Nutrition Technical Assistance Project, Academy for Educational Development, 2004.

This document may be reproduced without written permission by including the full citation of the source. An electronic version is available for download from www.fastproject.org and www.usaid.gov.

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)



HIV/AIDS: A Guide for Nutritional

Care and Support
2004

home.cd3wd.ar.cn.de.es.fr.id.it.ph.po.ru.sw



This guide was made possible through support provided to the Food and Nutrition Technical Assistance (FANTA) Project by the Office of Health, Infectious Disease and Nutrition and the Office of HIV/AIDS of the Bureau for Global Health at the US Agency for International Development, under terms of Cooperative Agreement No. HRN-A-00-98-00046-00 awarded to the Academy for Educational Development (AED). The opinions expressed herein

Copies of the Guide can be obtained from:

Food and Nutrition Technical Assistance (FANTA) Project
Academy for Educational Development
1875 Connecticut Avenue, N.W.
Washington, D.C. 20009-5721
Tel: 202-884-8000
Fax: 202-884-8432
Email:

do not necessarily reflect the views of the US Agency for International Development.

mailto:fan@fed.org
mailto:fan@fed.org fantaproject.org

Recommended citation:

and
*HIV/AIDS: A Guide For Nutritional
Care and Support. 2nd Edition. Food and
Nutrition Technical Assistance Project,
Academy for Educational Development,
Washington DC, 2004.*

Published October 2004

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Contents

Page

6	Acronyms
7	Acknowledgements
8	INTRODUCTION
8	Purpose
9	Audience
9	How To Use This Guide
98	Glossary of Terms

CHAPTER 1.

10	Nutrition and HIV/AIDS: Basic Facts
10	What is HIV. What is AIDS.
11	How HIV Is Transmitted
11	How HIV Is Not Transmitted
11	Stages of HIV
12	Table 1.1. WHO classification system of HIV
13	Nutrition and HIV/AIDS
13	Figure 1.1. The cycle of good nutrition and resistance to infection in the context of HIV/AIDS
14	Malnutrition and HIV/AIDS
14	Anorexia
14	Diarrhea
14	Fever
14	Nausea and Frequent Vomiting
14	Thrush
14	Anemia

1

17	Diets
15	Nutritional Requirements of PLWHAs
15	Energy Requirements
15	Protein Requirements
16	Fat Requirements
16	Micronutrient Requirements
16	Multivitamin Supplementation and HIV
17	Selected References

2

	CHAPTER 2.
19	Managing HIV Disease through Nutrition Interventions
19	General Nutritional Care and Support of PLWHAs
19	Good Dietary Practices
20	Food Safety and Hygiene
20	Water
21	Table 2.1. The role and source of selected micronutrients
22	Animal Products
22	Fruits and Vegetables
22	General Foods Storage and Handling
22	General Hygiene
23	Dietary Practices and Nutrition for Adult PLWHAs Living with HIV- and AIDS-related Symptoms
24	Table 2.2. Caring for symptoms and illnesses associated with HIV in adults
26	Planning Meals for PLWHAs
27	Selected References

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

CHAPTER 3.	
29	Nutritional Issues Associated with Modern and Traditional Therapies
30	Antiretroviral Drugs
30	Table 3.1. Classes and types of ARVs
31	First-Line ARV Regimens Recommended by WHO for Resource Limited Settings
31	Access to New Information
31	ARVs and Pre-existing Malnutrition
31	ARVs and Breastfeeding
32	Nutritional Issues Associated with ARVs and Other Medications
32	Figure 3.1. Types of food-medication interactions
33	Food Affects Medication Efficacy
33	Medication Effects on Nutrient Absorption, Metabolism, Distribution, and Excretion
33	The Side Effects of Modern Medications
34	Multiple Medications
34	Drug-drug Interactions
34	Medication and Food Can Cause Unhealthy Side Effects
35	Table 3.2. Modern medications and recommended food intakes and side effects
38	Multiple Food Interactions of a Drug
38	Table 3.3. Food interactions and side effects of Isoniazid
38	Traditional Therapies
39	Nutritional Therapies Associated with Traditional Therapies
39	Properties of Some Traditional Therapies
40	Table 3.4. Examples of traditional ways of dealing with common illnesses and symptoms in AIDS
41	Guidance on Effective Nutrition/Medication Management for Antiretroviral Therapy (ART)
42	Other Issues to Consider
42	Limited

3

72 Limited
 42 Access and Discrimination Faced by PLWHAs
 43 Selected References
 Food
 for

CHAPTER 4.

Nutritional Care and Support for Pregnant and Lactating Women and Adolescent Girls

45 Nutritional Care and Support for Pregnant Women and Adolescents Regardless of HIV Status
 46 Ensuring Good Nutrition for all Pregnant Women and Adolescent Girls
 46 Table 4.1. Recommended weight gain during pregnancy
 47 Take an Integrated Approach to Anemia Prevention and Control Services for Pregnant Women
 48 Pregnancys Discomforts
 49 Special Considerations for Adolescent Pregnancy
 49 Nutritional Care and Support for HIV-infected Pregnant Women and Adolescents
 50 ART and Other Medications
 51 Table 4.2. Estimated changes in daily energy intake
 51 Types of Regimens Used to Help Prevent MTCT of HIV
 51 Additional Recommended Care Practices
 52 Other Issues to Consider
 53 Nutritional Care and Support for Lactating Women and Adolescents whose HIV Status is Unknown or who are HIV-negative
 54 Nutritional Care and Support for HIV-infected Lactating Women and Adolescents
 55 Table 4.3. Recommended energy intake
 55 Additional Recommended Care Practices
 55 Other Issues to Consider
 56 Selected References

4

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

5

CHAPTER 5.

59	Nutritional Care Recommendations for Infants and Children
60	When to Counsel on Infant Feeding Options
61	Nutritional Care Recommendations for Infants and Children Born to HIV-negative Women or Women whose Status is Unknown
61	For All Children
61	Infants from Birth through Five Months
61	Infants Six through Eight Months
62	Infants Nine through 11 Months
62	Children 12 through 23 Months
62	Children 24 Months through Five Years
63	WHO 2003 Schedule of Vitamin A Supplementation
63	Nutritional Care Recommendations for Infants and Children of HIV-positive Women
64	Figure 5.1. Infant feeding options during the first six months of life
64	Infants from Birth through Five Months Born to HIV-positive Women: Exclusive Breastfeeding Followed by Replacement Feeding
65	Factors that Increase Risk of MTCT of HIV
66	Infants from Birth through Five Months Born to HIV-positive Women: Replacement Feeding with Appropriate Breastmilk Substitutes
67	Table 5.1. Preparation guide for mother/caregiver
68	Table 5.2. Recommended amounts of ingredients for replacement feeds, first six months
69	Micronutrients for Home-modified Animal Milk
69	Infants and Young Children from Six through 23 Months Born to HIV-positive Women: Complementary and Replacement Feeding Foods
70	Nutritional Care Recommendations for Children with HIV Disease
72	Selected References

CHAPTER

6

	CHAPTER
	A Food-based Approach to Support HIV/AIDS-affected Households and Communities
75	Community-based Care and Support
76	Facilitating a Community-led Situation Assessment
78	Designing and Implementing a Food Program
79	Examples of Uses of Food Aid to Support HIV/AIDS-affected Populations
81	Examples of Linking Title II Resources with HIV/AIDS-affected Households
82	Table 6.1. Daily energy and protein requirements for adolescents, adults, and children
83	Table 6.2. Average energy and protein requirements for a typical population for food aid programming when not using individual age- and sex-specific requirements
83	Table 6.3. Adults, adolescents and children: Adjustments for HIV status
83	Table 6.4. The energy requirement of a 25 year old HIV-infected asymptomatic pregnant woman with moderate activity level
83	Table 6.5. Illustrative calculation of daily household requirements
84	Selecting Ration Size and Composition
84	Table 6.6. Selection of foods provided through U.S. Title II food program
86	Table 6.7. Illustrative calculation of a food basket of a household
88	Table 6.8. Calculating a ration for a community program using average energy requirements
90	Linking Communities with Other Services
90	Institution-based Feeding Programs
90	Institutional and Home-based Care for Severely Malnourished Individuals
91	Priority Nutrition and Food-based Actions
91	Types of Food and Nutrition Supplements
93	Table 6.9. Examples of food and nutrition activities in HIV/AIDS programs
95	Selected References
98	Glossary of Terms

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

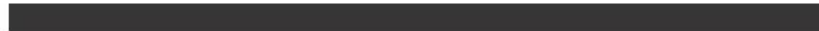
Acronyms

3TC Lamivudine
 ABC Abacavir
 AED Academy for Educational Development
 AFASS Acceptable, Feasible, Affordable, Sustainable, and Safe
 AIDS Acquired Immune Deficiency Syndrome
 ART Antiretroviral Therapy
 ARV Antiretroviral Drug
 AZT Azidothymidine or Zidovudine (ZDV)
 BMI Body Mass Index
 BMR Basal Metabolic Rate
 CBCC Community-based Child Centers
 CRS Catholic Relief Services
 CSB Corn Soy Blend
 CTC Community Therapeutic Care
 d4T Stavudine
 DAP Development Assistance Program
 ddI Didanosine
 DHS Demographic and Health Surveys
 EFZ Efavirenz
 FANTA Food and Nutrition Technical Assistance Project
 HAART Highly Active Antiretroviral Therapy
 HIV Human Immunodeficiency Virus
 IDV Indinavir
 ITN Insecticide-treated Bednet
 IUGR Intrauterine Growth Restriction
 IVACG International Vitamin A Consultative Group
 KG Kilogram
 LBW Low Birth Weight
 LPV Lopinavir
 M Meter
 MM Multiple Micronutrient
 MTCT Mother-to-child Transmission
 MUAC Mid-upper-arm Circumference
 NFV Nelfinavir
 NNRTI Non-nucleoside Reverse Transcriptase Inhibitor
 NRTI Nucleoside Reverse Transcriptase Inhibitor
 NtRTI Nucleotide Reverse Transcriptase Inhibitor
 NVP Nevirapine

ORS
OVC Orphans and Vulnerable Children
PAHO Pan American Health Organization
SPEM
PEM Protein-energy Malnutrition
PEPFAR Presidential Emergency Plan for AIDS Relief
PI Protease Inhibitor
PLWHA Person Living with HIV/AIDS
pMTCT Prevention of Mother-to-child Transmission
RDA Recommended Dietary Allowance
RTV Ritonavir
RUTF Ready-to-use Therapeutic Food
SQV Saquinavir
TB Tuberculosis
TDF Tenofovir
UHT Ultra High-temperature
UNICEF United Nations Childrens Fund
USAID United States Agency for International Development
VCT Voluntary Counseling and Testing
WFP World Food Programme
WHO World Health Organization
ZDV Zidovudine or Azidothymadine (AZT)

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Acknowledgements



Many people contributed to developing this revised edition of FANTAs HIV/AIDS: A Guide *for Nutrition, Care and Support, first published in 2001. The authors of the guide are Eleonore Seumo-Fosso, Serena Rajabiun, Bruce Cogill, Leslie Elder, Tony Castleman, and Annette Sheckler (FANTA/AED).*

Technical contributions were made by Eunyong Chung (USAID), Sandra Remancus, Heather Finegan, Robert Mwadime (FANTA/AED), Ellen Piwoz, Dorcas Lwanga (SARA/AED), Viveka Kraak, Marlou Bijlsma, and Lora Ionatti.

Heather Finegan led the production team.

1

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Introduction

This guide provides information for human immunodeficiency virus (HIV)/acquired immune deficiency syndrome (AIDS)-affected households and communities on how nutrition can help HIV-positive people live healthier lives throughout the progression of HIV disease. Malnutrition is a common complication of HIV infection and plays a significant and independent role in its morbidity and mortality. Malnutrition was one of the earliest complications of AIDS to be recognized and has been used to clinically diagnose AIDS.

There is still a great deal we do not know about the relationship between HIV/AIDS and nutrition. Research does suggest that the chance of infection with the HIV virus might be reduced in individuals who have good nutritional status; the onset of the disease and death might be delayed

where HIV-positive individuals are well-nourished; and HIV-infected individuals might reduce the risks to the baby during pregnancy or birth. This guide is an interpretation of the best available evidence to date from multiple sources, especially the World Health Organization (WHO), and a broad range of experts. This guide was extensively revised from its earlier version and was peer reviewed.

Purpose

The United States Title II Program is managed by the U.S. Agency for International Development (USAID) Bureau for Democracy, Conflict and Humanitarian Affairs, Office of Food for Peace. Cooperating agencies, such as private voluntary organizations and nongovernmental organizations, can solicit requests for donated U.S. food commodities to use in their programs. For information, visit USAID's website at www.usaid.gov.

The purpose of this guide is to assist program managers and health workers make recommendations on food management and nutritional issues for households with members who are HIV-infected or living with AIDS. The guide refers to the nutritional care and support needs of individuals ***infected with HIV; that is, persons who have the virus with or without symptoms of AIDS.*** The guide is also designed for individuals, families, and communities affected by HIV; that is, they may or may not be HIV-infected but are experiencing the social, economic, and health consequences of the virus. The guide is designed with the view that sound nutrition practices will benefit both infected and affected populations.

Food and nutrition recommendations are for both adults and children and emphasize the use of locally available food products, complemented by appropriate foods obtained through external donation programs, such as the United States Agency for International Development's (USAID's) Title II Program¹ and the World Food Programme (WFP).

1

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Audience

This guide is targeted primarily at four types of audiences:

1. Program managers and technical staff who work in food aid, food security, health, and nutrition programs in HIV-affected areas;
2. Local health workers in areas affected by HIV/AIDS;
3. Community-based organizations working in high prevalent HIV/AIDS areas; and
4. Institutions caring for PLWHAs or orphans and other vulnerable children infected or affected by HIV/AIDS.

How To Use This Guide

The guide highlights thematic issues related to HIV/AIDS and nutrition. The guide can be translated and adapted to meet local needs and serve as a resource to develop educational materials that are shared with communities and households. The six chapters are:

Chapter 1. Nutrition and HIV/AIDS: Basic Facts

This chapter provides basic information on HIV/AIDS, the relationship between HIV/AIDS and nutrition, and guidance on nutrition.

Chapter 2. Managing HIV Disease Through Nutrition Interventions

This chapter provides guidelines for helping HIV-infected adults maintain overall good nutrition status and a healthy body weight. The chapter includes dietary recommendations for adults coping with HIV/AIDS-related symptoms and illnesses.

Chapter 3. Nutritional Issues Associated With Modern and Traditional Therapies

This chapter describes the nutritional issues associated with therapies controlling virus replication and treating AIDS-related illnesses and symptoms. It provides guidelines on the food and nutrition responses that can be used to ensure efficacy of and adherence to the therapy and maintain good nutritional status.

Chapter 4. Nutritional Care and Support for Pregnant and Lactating Women and Adolescent Girls

This chapter provides dietary guidelines to ensure proper nutrition for pregnant and lactating women and adolescent girls in the context of HIV/AIDS.

Chapter 5. Nutrition and Care Recommendations for Infants and Children

This chapter provides information on feeding guidelines to improve nutrition for children, whether infected with HIV or not, to reduce transmission of the virus, boost immune system functioning, and improve the dietary management of HIV-related complications.

Chapter 6. A Food-based Approach to Support HIV/AIDS-affected Households and Communities

This chapter provides information on the selection, composition, and size of food commodities distributed to HIV-affected communities.

1

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

CHAPTER

1.

Nutrition and HIV/AIDS: Basic Facts

This chapter provides basic facts on HIV/AIDS, the relationship between HIV/AIDS and nutrition, and guidelines for maintaining overall nutritional status and a healthy body weight. This chapter is designed to provide

program managers with basic information to share directly with households and communities. The information is focused on resource limited settings commonly found in developing countries.

What is HIV. What is AIDS.

H = Human (who is affected)
I = Immunodeficiency (the result)
V = Virus (the causal agent)
A = Acquired (from bodily fluids
 through a behavior or action,
 including from the mother during
 pregnancy, during delivery, or
 through breastmilk)
I = Immune (where the virus attacks)
D = Deficiency (resulting effect of
 virus)
S = Syndrome (series of illnesses)

Acquired Immune Deficiency Syndrome, or AIDS, is a disease of the immune system that makes the individual highly vulnerable to life-threatening infections and diseases, such as tuberculosis (TB) and certain types of cancer. AIDS is caused by a retrovirus known as the human immunodeficiency virus, or HIV, which attacks and impairs the body's natural defense system against disease and infection. HIV is a slow-acting virus that may take years to produce illness in a person. An HIV-infected person's defense system is impaired and,

over time, other viruses, bacteria, fungi, and parasites take advantage of this opportunity to further weaken the body and cause various illnesses and conditions, such as pneumonia, TB, cancer, oral thrush, diarrhea, oral herpes sores, and muscle wasting. This is why the infections and conditions found in HIV-infected individuals are called opportunistic.

A person has AIDS when that person starts having opportunistic infections, or when CD4 count is below 200 cells/mm in the presence of HIV infection. The amount of time it takes for HIV infection to become full-blown AIDS depends on the type and strain of the virus and host factors, including age, co-infections, and some genetic factors, as well as the general health and nutritional status before and during the time of HIV infection.

Currently, there is no cure for HIV/AIDS or vaccine to prevent HIV infection. Some therapies can prevent, treat, or even cure many of the opportunistic infections and relieve the symptoms associated with HIV/AIDS, which include fever, coughing, itching, poor appetite,

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

NUTRITION AND HIV/AIDS: BASIC FACTS CHAPTER 1.

difficulty breathing or swallowing, and chronic diarrhea. A group of drugs referred to as antiretroviral drugs (ARVs) directly attack the HIV virus and significantly reduce the rate of replication of the virus in the body of the HIV-infected person. These drugs can

decrease the viral load and slow down the progression of HIV disease. The cost of ARV drugs is declining, and access to ARVs among people living with HIV/AIDS (PLWHAs) is increasing in resource limited settings.

How HIV Is Transmitted

HIV is transmitted via three primary routes:

1. Having unprotected sex with a person already carrying the HIV virus;
2. Transfusions of contaminated blood and its by-products or use of non-sterilized instruments, such as shared needles, razors, and other surgical tools; and
3. From an infected mother to her child, or mother-to-child transmission (MTCT), during pregnancy, childbirth, or breastfeeding.

In most of the developing world, HIV is transmitted primarily through sexual contact with an infected person. Women are at greater risk of HIV infection than men. Infants and children are also at risk. A pregnant woman who is HIV-infected has about a 15 to 40 percent risk of infecting her baby with HIV in the absence of antiretroviral therapy (ART). Of infants who become infected, 60 percent will contract HIV during pregnancy or labor, and 40 percent through breastfeeding.

How HIV Is Not Transmitted

HIV is not

Manv

transmitted
 Handshakes;
 Hugs;
 Food eaten from the plate of or drinks
 shared with an HIV-infected person;
 Mosquitoes or other insects;
 Kisses; or
 Latrines.

not
 infected with the virus. They may appear
 healthy but are still capable of transmitting the
 virus through unprotected sexual intercourse
 or by reusing contaminated needles, razors, or
 other devices or, in the case of a pregnant or
 lactating mother, during labor and delivery or
 through breastfeeding.

Stages of HIV/AIDS

WHO categorizes HIV infection by four stages. These stages are summarized in Table 1.1. with the opportunistic infections that characterize each stage. Details of each stage

can be found in Appendix E of WHO's Scaling Up Antiretroviral Therapy in Resource-Limited Settings: Treatment Guidelines for a Public Health Approach, published in 2003.



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Table 1.1. WHO Clinical Classification System of HIV

Stage	<i>Symptomatic or Asymptomatic Characteristics</i>
Stage 1	Asymptomatic Persistent generalized swelling of the lymph nodes
Stage 2	Symptomatic Weight loss < 10 percent of body weight Minor mucocutaneous manifestations such as seborrheic dermatitis, prurigo, fungal nail infections, recurrent oral ulcerations, angular cheilitis. Herpes zoster within last five years Recurrent upper respiratory tract infections such as bacterial sinusitis.
Stage 3	Symptomatic Bedridden for < 50 percent of the day during the last month AND Weight loss > 10 percent of body weight Unexplained chronic diarrhea > 1 month Unexplained prolonged fever (intermittent or constant > 1 month). Oral candidiasis (thrush) Oral hairy leukoplakia Pulmonary tuberculosis Severe bacterial infections such as pneumonia or pyomyositis
Stage 4	Symptomatic Bedridden for > 50 percent of the day during the last month AND HIV Wasting Syndrome Candidiasis of the oesophagus, trachea, bronchi or lungs Cryptococcus, extrapulmonary Cryptosporidiosis

Cytomegalovirus disease of an organ other than the liver, spleen or
diarrhoea
lymph nodes
for
Herpes simplex virus infection, mucocutaneous for > 1 month or
1 visceral for any duration
HIV dementia (encephalopathy)
Kaposi sarcoma
Lymphoma
Extrapulmonary tuberculosis
Atypical mycobacteriosis, disseminated or pulmonary
Any disseminated endemic mycosis
Pneumocystis carinii pneumonia
Progressive multifocal leukoencephalopathy
Salmonella septicaemia (non-typhoidal)
Toxoplasmosis of the brain

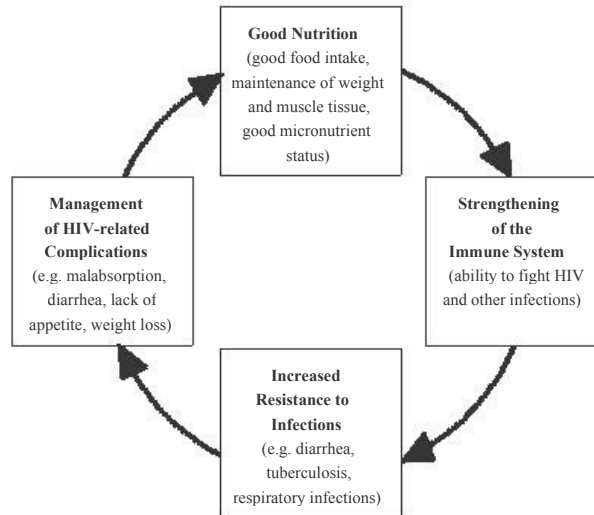
Nutrition and HIV/AIDS

Nutrition and HIV are linked. Any immune impairment as a result of HIV/AIDS can contribute to malnutrition. Malnutrition leads to immune impairment, worsens the effects of HIV, and contributes to a more rapid progression of the disease. Thus, malnutrition both contributes to and is a result of HIV disease progression.

A person who is malnourished and then acquires HIV is more likely to progress faster to AIDS because the body is already weak and cannot fight co-infections, particularly without access to ARVs and prophylactic medications. A well-nourished person has a stronger immune system for coping with HIV and fighting illness. Figure 1.1. illustrates the relationship between good nutrition and resistance to infection in the context of HIV/AIDS.

Timely improvement in nutritional status can help strengthen the immune system, thereby reducing the incidence of infections, preventing loss of weight and lean body mass, and delaying disease progression, so that HIV has less chance to develop in a person who is well nourished (see figure 1.1.). Some nutritional deficiencies can be reversed by timely and adequate nutritional therapy. Nutritional care and support helps people living with HIV to manage HIV-related complications, promotes good responses to medical treatment, and improves the persons quality of life by maintaining strength, comfort, level of functioning, and human dignity. Nutritional care and support is especially effective for those HIV-positive people who have not yet progressed to the stage requiring ARV treatment.

Figure 1.1. The Cycle of Good Nutrition and Resistance to Infection in the Context of HIV/AIDS



Adapted from Ellen G. Piwoz and Elizabeth A. Preble, HIV/AIDS and Nutrition: A Review of the Literature and Recommendations for Nutritional Care and Support in Sub-Saharan Africa. Washington, D.C.: Academy for Educational Development (AED), 2000.



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Malnutrition and HIV/AIDS

HIV infection affects nutrition through increases in resting energy expenditure, reductions in food intake, nutrient malabsorption and loss, and complex metabolic alterations that culminate in weight loss and wasting common in AIDS. The effect of HIV on nutrition begins early in the course of the disease, even before an individual may be aware that he or she is infected with the virus.

The impact of pre-existing malnutrition on HIV susceptibility and disease progression is not yet understood. Early studies showed that weight loss and wasting were associated with increased risk of opportunistic infections and shorter survival time in HIV-positive adults, independent of their immune status. Other studies showed that clinical outcome was poorer and risk of death was higher in HIV-positive adults with compromised micronutrient intake or status.

AIDS-wasting syndrome is defined as a 10 percent weight loss of baseline body weight plus

Diarrhea. A person with diarrhea has several watery or loose bowel movements in a day. There are several causes for diarrhea including bacterial and viral infections, parasites, and as a side effect of some medical treatments. It results in losses of water and nutrients and leaves a person at greater risk of dehydration. Diarrhea also reduces appetite and leads to poor nutrient absorption. Severe malnutrition can occur following a prolonged period of diarrhea.

Fever. Fever is a body temperature above 37 degrees Celsius. People with acute or chronic fever may have chills, sweat excessively, have muscle and joint aches, or be fatigued. Fever is common in PLWHAs and does not necessarily indicate a serious illness. The reasons for fever vary, and it is often hard to determine whether fever is due to HIV or another illness, such as malaria or untreated opportunistic infections. The body's energy expenditure increases with fever, causing increased energy requirements.

Nausea

chronic diarrhea (i.e., more than 100 per day for more than 30 days) or chronic weakness and documented fever for 30 days or more, intermittent or constant, in the absence of a concurrent illness or a condition other than HIV infection. Wasting is characterized by a loss of lean tissues. Lean tissues in the body are responsible for most of the body's metabolic functions including processing medications. The body starts to lose its major functions as damage to the immune system and weight loss progress.

The following symptoms and illnesses commonly caused by HIV infection have nutritional consequences that can lead to malnutrition.

Anorexia. Anorexia, or loss of appetite, may occur with the onset of infection and when fever is present, or as a side effect of medications. It leads to general weight loss and is common when individuals are depressed or living in socially and emotionally unfavorable environments.

Vomiting and Nausea can result from the drugs used to treat HIV/AIDS or from opportunistic infections. Frequent vomiting also may cause reduced appetite and voluntary restriction of food, and vomiting lowers the amount of nutrients available to the body.

Thrush. Thrush is a fungal infection caused by the Candida fungus and is common in HIV-infected people. Thrush refers to whitish spots on the inside of the mouth, tongue, esophagus, intestines, vagina, or anus. Although these sores are uncomfortable, they are not life-threatening. These sores can result in difficulty eating foods, loss of appetite, reduced food intake, and malabsorption, leading to weight loss.

Anemia. Anemia is a low level of hemoglobin in the blood. It results from an inadequate number or quality of red blood cells that are important for carrying oxygen and feeling well. Iron deficiency from poor dietary intake and/or absorption of iron causes approximately



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

NUTRITION AND HIV/AIDS: BASIC FACTS CHAPTER 1.

50 percent of global anemia. Other causes include infectious diseases such as malaria, tuberculosis, and HIV/AIDS, helminth infections such as hookworm, other vitamin deficiencies (e.g., B12 and folic acid), genetic blood diseases, contraceptive methods (e.g., intrauterine devices), and closely spaced pregnancies. Pregnant women and young children are especially prone to anemia.

Persons who are anemic often experience tiredness and weakness and may have pallor (i.e., paleness) in the eyes, tongue, palms, and nail-beds. The relationship between HIV and anemia is not clearly understood, although it is known that HIV-infected persons who are anemic generally progress faster to AIDS than those who are not.

Nutrient Requirements of PLWHAs

Good nutrition for all individuals, but especially PLWHAs, requires the consumption of an adequate amount in the appropriate proportions of macronutrients (e.g., proteins, carb ohydrates, fats) and micronutrients (e.g., vitamins, minerals). It is important to remember that many people in resource limited settings are experiencing pre-existing malnutrition and that HIV will worsen the situation.

The nutritional needs of HIV-infected persons depend on the stage of disease progression. Required intake levels are

In the presence of symptoms (WHO stage 2 and above), HIV-infected persons should increase energy intake by 20 to 30 percent over the level of energy intake recommended for healthy non-HIV-infected persons of the same age, sex, and physical activity level.

These recommendations are for HIV-infected persons, including those taking HIV-related medications such as ARVs.

Protein Requirements. According to WHO's *Nutrient Requirements for People Living with*

required intake levels are suggested based on the presence of symptoms such as fever, diarrhea, weight loss, and wasting.

Energy Requirements. The HIV-infected person has additional energy needs because of:

Energy used for HIV infection and opportunistic infections;
Nutrient malabsorption; and
Altered metabolism.

The various phases of the infection are marked by an increase in metabolism, increased energy needs, and nutrient depletion. These effects of infection often occur synergistically and result in weight loss and wasting.

In the absence of AIDS symptoms (WHO stage 1), HIV-infected persons should increase energy intake by 10 percent over the level of energy intake recommended for healthy non-HIV-infected persons of the same age, sex, and physical activity level.

with HIV/AIDS support an increase in protein requirements due to HIV infection. HIV-infected persons do not require more protein than the level recommended for healthy non-HIV-infected persons of the same age, sex, and physical activity level.

At the onset of opportunistic infections, the body loses nitrogen, which suggests a need for increased protein intake if opportunistic infections remain untreated. Studies have not demonstrated, however, that improved clinical outcomes occur from increased protein intake among HIV-infected individuals. Further research is needed on the optimal protein requirements of HIV-infected persons during the course of HIV disease. HIV-infected people often have pre-existing protein-energy malnutrition. Protein-energy malnutrition (PEM) results from inadequate intake or poor utilization of food and energy, not a deficiency of one nutrient and not usually simply a lack of dietary protein. Programs may need to address the deficiency by increasing intakes to meet the recommended levels.



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Fat Requirements. According to the recent WHO guidelines, there is no evidence that fat requirements are different because of HIV infection. However, certain ARVs or certain infection symptoms such as diarrhea may require changes in the timing or quantity of fat intake in some cases.

Micronutrient Requirements. WHO does not recommend micronutrients beyond the level of recommended micronutrients for healthy non-HIV-infected persons of the same age, sex, and physical activity level.

However, micronutrient deficiencies are common in areas where HIV is prevalent. Deficiencies of vitamins and minerals such as vitamins A, B-complex, C, E, selenium, and zinc, which are needed by the immune system to fight infection, are common in people living with HIV. Deficiencies of anti-oxidant vitamins and minerals contribute to oxidative stress, a condition that may accelerate cell death and increase the rate of HIV replication.

Good nutrition is best achieved by consuming a diverse diet with foods rich in micronutrients, especially vitamins A, B6, B12, and selenium, iron and zinc. If the HIV-infected person presents signs of a specific or multiple micronutrient deficiencies, the deficiency should be addressed using the standard protocols.

Multivitamin Supplementation and HIV

The findings of a recent study conducted in Tanzania raises important issues about the role of specific multivitamin supplementation on the progression and mortality of HIV disease in pregnant women (Fawzi et al., 2004).

Nutrition is an important component of comprehensive care, particularly in resource-limited settings where malnutrition and food insecurity are common. Deficiencies of vitamins and minerals, such as vitamins A, B-complex, C and E, as well as selenium, zinc and other micronutrients needed by the immune system have been commonly observed in people living with HIV. The effect of supplementation with these micronutrients on disease progression and mortality are now being studied. There is insufficient evidence to recommend high-dosage micronutrient supplementation in high HIV prevalent population. Results from some studies raise concerns that some specific micronutrients supplements such as vitamin A, zinc and iron may be detrimental in HIV-infected populations in terms of disease outcomes and transmission.

Ideally, an adequate micronutrient intake should be achieved through an adequate diet. In areas where there are multiple micronutrients deficiencies, multiple micronutrient supplements may be needed in pregnancy and lactation.

There is a need, however, for guidance on micronutrient supplementation and the therapeutic and prophylactic use of multivitamins. WHO and UNICEF are taking the lead in this guidance. For now, HIV-infected women during pregnancy and lactation, micronutrient intakes should be at the standard recommended levels. Dietary and clinical nutritional assessment should be undertaken before initiating ART. In addition, patients should be evaluated and counselled with regard to dietary modifications in response to any side effect associated with ART.



Selected References

- American Dietetic Association. Position of the American Dietetic Association and Dietitians of Canada: Nutrition intervention in the care of persons with human immunodeficiency virus infection. Journal of the American Dietetic Association 104 (2004): 1145-1441.
- Bijlsma, M. Nutritional Care and Support for People with HIV: Review of the Literature, Initiatives and Educational Materials in Sub-Saharan Africa and Recommendations for Developing National Programmes. Report to the Food and Agriculture Organization of the United Nations (FAO). Rome, Italy: FAO, 2000.
- Centers for Disease Control and Prevention (CDC). Revision of the CDC surveillance case definition for acquired immunodeficiency syndrome. Morbidity and Mortality Weekly Report 36 (1987): 3-15.
- Fawzi, W.W., G.I. Msamanga, D. Spiegelman, et al. A randomized trial of multivitamin supplementation and HIV.
- James, W.P.T., and E.C. Schofield. *Human Energy Requirements: A Manual for Planners and Nutritionists*. Oxford, England: Oxford University Press and Rome, Italy: FAO, 1990.
- Joint United Nations Program on HIV/AIDS (UNAIDS). 2004 Report on the Global AIDS Epidemic. *Executive Summary*. Geneva: UNAIDS, 2004, p. 1-20.
- Joint United Nations Program on HIV/AIDS (UNAIDS) and World Health Organization (WHO). AIDS Epidemic Update 2003. (Document No. UNAIDS/03.39E). Geneva: WHO, December 2003.
- Marston, B., and K.M. De Cock. Multivitamins, Nutrition, and Antiretroviral Therapy for HIV Disease in Africa. New England Journal of Medicine 351 (2004): 78-80.
- Ministry of Agriculture, Animal Industry and Fisheries, Republic of Uganda, and United Nations

supplements and HIV disease progression and Journal of Medicine 351 (2004): 23-32.

Fields-Gardner, C., S. Salomon, and M. Davis. *Living Well with HIV and AIDS: A Guide to Nutrition*. Chicago, IL: American Dietetic Association, 2003.

Institute of Medicine of the National Academies (IOM). *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids (Macronutrients)*. Washington, D.C.: National Academies Press, 2002. An online summary available at <http://books.nap.edu/openbook/0309085373/html/1.html> as viewed August 2004.

Institute of Medicine of the National Academies (IOM). *Dietary Reference Tables The Complete Set*. Washington, D.C.: National Academies Press, 2004. The complete set as viewed August 2004 at <http://www.iom.edu/board.asp?id=3788>.

Nations Development Programme (UNDP). *HIV/AIDS: A Handbook for Prevention Agents*. Kampala, Uganda: UNDP, 1997.

Network of African People Living with HIV/AIDS. *A Healthy Diet for Better Nutrition for People Living with HIV/AIDS*. Nairobi, Kenya: Network of African People Living with HIV/AIDS, 1997.

Piwoz, E.G., and E.A. Preble. *HIV/AIDS and Nutrition: A Review of the Literature and Recommendations for Nutritional Care and Support in Africa*. Washington, D.C.: Academy for Educational Development (AED), 2000.

Woods, M.N. Dietary recommendations for the HIV/AIDS patient. In Miller, T.I., and S.L. Gorbach (editors), *Nutritional Aspects of HIV Infection*. New York, N.Y.: Oxford University Press, 1999.

World Health Organization (WHO). *Energy and Protein Requirements, Report of Joint FAO/WHO/UNU Expert Consultation* (Technical Report Series 724). Geneva, Switzerland: WHO, 1985.

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

World Health Organization (WHO). *Nutrient Requirements for People Living with HIV/AIDS. Report of a technical consultation.* World Health Organization, Geneva, Switzerland, 13-15 May, 2003.

World Health Organization (WHO). *Scaling Up Antiretroviral Therapy in Resource-Limited Settings: Treatment Guidelines for a Public Health Approach.* Geneva, Switzerland: WHO, 2003.

Websites

Centers for Disease Control and Prevention (CDC)

www.cdc.gov

The Cutting Edge

www.tceconsult.org

Food and Agriculture Organization of the United Nations (FAO): HIV/AIDS and Food Security

www.fao.org/hivaids/

Joint United Nations Program on HIV/AIDS (UNAIDS)

www.unaids.org

United Nations Childrens Fund (UNICEF): HIV/AIDS Program

www.unicef.org/aids/index.html

United Nations System Standing Committee on Nutrition (SCN) Working Group on Nutrition and HIV/AIDS

www.unsystem.org/scn/Publications/AnnualMeeting/nut_&_hiv_aids.htm

United Nations World Food Programme

www.wfp.org/

U.S. Agency for International Development (USAID), Bureau for Global Health: HIV/AIDS

www.usaid.gov/our_work/global_health/aids/

**World Health Organization (WHO) HIV/
AIDS Program**
www.who.int/hiv/en/

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

MANAGING HIV DISEASE THROUGH NUTRITION INTERVENTIONS CHAPTER 2.

Managing HIV Disease through Nutrition Interventions

2.

CHAPTER

2. Managing HIV Disease through Nutrition

The purpose of this chapter is to provide dietary recommendations that may help PLWHAs manage HIV disease, achieve maximum benefit from medications, maintain body weight, and enhance quality of life by improving nutritional status. The first section of this chapter provides general

guidance on how to support a healthy body through nutrition interventions, which include both dietary approaches and micronutrient supplementation. The second section addresses the dietary management of specific AIDS-related symptoms.

General Nutritional Care and Support of PLWHAs

This section discusses guidance for the nutrition-related care and support of HIV-infected asymptomatic men and women (i.e., those who have a positive reaction to one of several tests for HIV antibodies but who show no clinical symptoms of the disease) and HIV-infected symptomatic men and women. Specific guidance for the nutrition-related care and support of HIV-infected pregnant and lactating women can be found in Chapter 4, and Chapter 5 contains guidance for the nutrition-related care and support of HIV-infected children.

Any person living with HIV will benefit from healthful eating habits to maintain a normal body weight and prevent co-infections.

Good Dietary Practices

Good dietary practices play an important role in maintaining a healthy lifestyle and healthy body. An HIV-infected person already has a weakened immune system. A nutritious diet can help maintain the proper functioning of the

immune system and provides needed energy, protein, and micronutrients during all stages of the HIV infection. Program managers can promote a number of dietary practices that HIV-infected individuals and their families can follow. The following suggestions are provided as general principles in responding to the nutritional needs of HIV-affected populations.

Maintaining adequate nutritional status means consuming a variety and adequate quantity of foods to meet energy, protein, and micronutrients needs. PLWHAs should eat a balanced and diverse diet consisting of starchy staples (e.g., rice, maize, potato, cassava, banana, yam) with cooked legumes (e.g., beans, peas), nuts and nut butters, animal foods, fat and oil, fruits, and vegetables. A balanced diet will ensure that the individual consumes sufficient nutrients to maintain energy, normalize weight, and ensure the body's proper functioning. The main types of food people need to live a healthy life include energy-providing foods (i.e., carbohydrates,

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

fats), body-building foods (i.e., proteins, minerals), and protective foods (i.e., vitamins, minerals).

Carbohydrates (i.e., sugars, starches) and fats provide the body with energy. These foods:

Provide energy to make bodies work and keep active;

Are found in various starchy staple foods such as maize, rice, sorghum, millet, and green banana and roots and tubers such as cassava, taro, potato, and sweet potato; and

Are usually more affordable and available than high-protein foods.

HIV-infected people have increased energy requirements because of HIV disease and co-infections. Consuming a variety of foods from each of the main groups of energy sources on a daily basis is important to maintaining good nutritional status to help fight illness. In addition, good nutritional status may ensure that a person is able to survive an opportunistic infection such as TB or pneumonia without further compromising health and nutritional

than vegetable protein sources. Daily consumption of a cereal with a protein source such as legumes is recommended.

Foods rich in micronutrients (e.g., vitamins A, B, C, D, E) and minerals (e.g., iodine, selenium, zinc, iron) are called protective foods. Micronutrient-rich foods:

Help the body absorb and utilize protein and carbohydrates;

Help fight infections and digest and absorb other nutrients; and

Are found in dark green, leafy vegetables (e.g., collard greens, cassava and potato leaves, spinach, callaloo, pumpkin leaves, cabbage) and yellow and orange fruits and vegetables (e.g., mango, papaya or paw paw, sweet potato, pumpkin, carrots, tomato, avocado, oranges, lemons, bananas).

Table 2.1. describes the role of various micronutrients and their importance for maintaining a healthy body and provides examples of foods that are rich sources of micronutrients. Some of the foods listed are

status.

Proteins and minerals are found in body-building foods. These foods:

- Contain proteins for cell repair and growth nutrients such as iron for blood and calcium and phosphorus for strong bones;
- Help build bones and cells important for growth and development;
- Help fight infection and repair the body during times of illness; and
- Are obtained from legumes (e.g., beans, lentils, cowpeas, pigeon peas, groundnuts, nuts), milk products (e.g., cow or goat milk, yogurt, cheese, human breastmilk), animal foods (e.g., fish, eggs, chicken, pork, beef, birds, rodents, other meat products, insects), whole grains and cereals (e.g., wheat, maize, millet, sorghum, rice). Animal products are important sources of nutrients but may not be feasible to consume every day because they are usually more expensive

available only during specific seasons.

Food Safety and Hygiene. PLWHAs are more vulnerable to infection because their immune systems have already been weakened. Properly handling food and water is especially important to avoid infections caused by bacteria and viruses in contaminated food and water. Listed below are guidelines for handling water, animal products, fruits, and vegetables and general food storage, as well as some general hygiene guidelines.

Water

- Be sure water is clean. Guidance on the length of boiling time for preparation of safe drinking/food preparation water varies from boiling water vigorously for a few seconds to 10 minutes.
- Keep boiled water stored in a clean container with a lid.
- Do not dip hands or cups into the container. Instead, pour water from the container.
- The best container is one with a tap.



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

MANAGING HIV DISEASE THROUGH NUTRITION INTERVENTIONS CHAPTER 2.

Table 2.1. The Role and Source of Selected Micronutrients

<i>Micronutrient Role</i>		<i>Food sources</i>
Vitamin A	Growth and function of T and B cells for immunity; maintenance of mucosal epithelial cells, including the lining of the respiratory, gastrointestinal and genitourinary tracts; vitamin A deficiency is associated with increased adult mortality, higher infant mortality, and child growth failure	Liver and dairy products, kidney, egg, some fishes, yellow sweet potato, pumpkin, palm oil, carrot, dark green leafy vegetables, fruits, such as papaya and mango
Thiamine Vitamin B1	Important for energy metabolism; support appetite and nervous system functions	Whole-grain cereals, beans, meat, fish, chicken, egg
Riboflavin Vitamin B2	Important for energy metabolism; support normal vision, health, and integrity of skin	Milk, egg, liver, yogurt, meat, dark green leafy vegetables, whole-grain cereals, fish, and beans
Niacin Vitamin B3	Essential for energy metabolism; support health and integrity of skin and nervous and digestive systems	Milk, egg, meat, poultry, peanuts, groundnuts, whole-grain cereals, fish
Pyridoxine Vitamin B6	Facilitates metabolism and absorption of fats and proteins; helps make red blood cells	Sweet potato, white beans, avocado, cabbage, broccoli, meat, fish, green leafy vegetables
Cobalamin Vitamin B12	Important for new cell development and maintenance of the nerve cells	Red meat, fish, chicken, shellfish, cheese, eggs, milk, fermented products
Ascorbic	Important	Citrus

Vitamin C	function and iron absorption; increases protein metabolism, resistance to infections	Fruits, tangerine, guava, baobab, such as tomato
Vitamin E	Protects cell structures and facilitates resistance against diseases	Leafy vegetables, vegetable oils, peanut, egg yolk, vegetables, nuts, seeds, and liver
Calcium	Builds strong bones and teeth; important for functioning of heart and muscle functions, blood clotting and pressure and immune defenses	Milk, dark green leafy vegetables, shrimp, dried fish, beans, lentils, peas, whole grain millet, oil seeds, okra
Iodine	Ensures the development and proper functioning of the brain and of the nervous system; important for growth development and metabolism	Fish and other seafood, salt with iodine
Iron	Transports oxygen to the blood, eliminates old red blood cells and builds new cells; required for utilization of energy and metabolism by cells	Red meat, poultry, shellfish, egg, peanut, groundnuts, leafy vegetables, lentils, beans, some cereals, dried fruits
Magnesium	Strengthens the muscles; important for nervous system function; involved in bone development, maintenance of teeth	Cereal, dark green vegetables, seafood, nuts, legumes, groundnuts
Selenium	Prevents impairment of the heart muscle; enhances the body's antibacterial and antiviral defenses	Seafood, liver, meat, nuts, unrefined grains, brown rice, wheat germ, whole-grain cereals, carrot, onion, milk, egg

Adapted from Network of African People Living with HIV/AIDS (November 1997). Program managers in each country are encouraged to develop and disseminate information on locally available food sources of micronutrients.

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Always wash hands with soap before and after touching foods and using the latrine.

Animal Products

Cook all animal products (i.e., meat, chicken, pork, fish, eggs) until thoroughly cooked and well done.

Do not eat meat that still has red juice.

Do not eat soft-boiled eggs, raw eggs, cracked eggs, or any foods containing raw eggs.

Thoroughly wash hands and all utensils and surfaces that have touched uncooked foods, particularly meats, before handling other foods.

Cover meat, poultry, and fish with a clear cover or cloth. Keep meat, poultry and fish separate from other foods to avoid contamination with bacteria and other disease-causing agents.

Fruits and Vegetables

Use boiled, clean water to thoroughly wash all fruits and vegetables that are to be eaten raw to avoid contamination.

If it is not possible to wash fruits and vegetables properly, remove the skin to

Always boil them for at least five minutes before eating leftovers.

Do not store raw food, especially meat, close to cooked food.

Store food in a cool, dry place or refrigerator.

Be very careful about eating prepared foods purchased from vendors in the marketplace.

General Hygiene

Always wash hands with clean water and soap or ashes before, during, and after preparing food, eating, or visiting the latrine.

Cover all wounds to prevent contamination of food during preparation and handling.

Use a latrine and keep it clean and free from flies.

Keep the areas surrounding food preparation and eating areas and latrines clean.

Wash clothes, bedding, and surfaces that might have been contaminated with feces in hot water and soap.

avoid contamination.

Remove the bruised parts of fruits and vegetables to remove any molds and bacteria growing there.

Boil thoroughly, but do not overcook vegetables as vitamins will get lost.

General Foods Storage and Handling

Make sure that all food preparation and consumption areas are free of flies and other insects.

Keep all food preparation surfaces clean.

Use clean dishes and utensils to store, prepare, and eat food.

Cover and store food in containers to avoid contamination.

Keep hot foods hot and cold foods cold before eating.

Throw away foods that have gone bad or are well past the sell-by or expiration date.

Avoid storing leftovers unless they can be kept in a cool place or refrigerator.

Always re-heat them at a high temperature.



Dietary Practices and Nutrition for Adult PLWHAs Living with HIV- and AIDS-related Symptoms

This section provides specific nutrition information and suggestions for improved dietary practices including menu-planning for adults coping with HIV- and AIDS-related symptoms and illnesses.

The goal of the dietary management of HIV and AIDS-related symptoms is to prevent malnutrition and improve the overall health and nutritional status of PLWHAs, thereby slowing the progression of the disease and enabling greater comfort and productive activity. Dietary management of AIDS-related symptoms refers to the strategy of using food and dietary practices to alleviate the effects of AIDS-related symptoms on food intake and nutrient absorption.

Dietary management of AIDS-related symptoms can:

- Ensure adequate food intake by adding more flavor, encouraging PLWHAs to take small but

Table 2.2, on the following page provides information on how to manage AIDS-related symptoms. The dietary advice provided has been successfully used in some countries but should be adapted to specific food habits, regional constraints, and availability.

- take small but frequent meals
- and/or by presenting foods with a texture that can be easily eaten by PLWHAs;
- Contribute to increased comfort while eating;
- Provide more nutrients to compensate for nutrient losses and/or increased nutrient requirements;
- Maintain body weight measured in kilograms or sometimes expressed as a body mass index (BMI) of at least 18.5 kg/m². BMI is used to define a persons current nutritional status and uses the following formula to determine BMI: weight in kilograms divided by height in meters², also shown as kg/m²;
- Prevent dehydration that occurs due to diarrhea and fever;
- Complement medical treatment, including the provision of ARVs;
- Reduce the severity of symptoms by providing specific nutrient needs
- Strengthen the immune system; and
- Manage specific symptoms (e.g., nausea, constipation).

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Table 2.2. Caring for Symptoms and Illnesses Associated with HIV in Adults

<i>Illness</i>	<i>Diet</i>	<i>Care Practices</i>
Anorexia (appetite loss)	<p>Try to stimulate appetite by eating favorite foods.</p> <p>Eat small amounts of food more frequently.</p> <p>Eat favorite foods.</p> <p>Select foods that are more energy dense.</p> <p>Avoid strong smelling foods.</p>	<p>If loss of appetite is due to illness, seek medical treatment.</p>
Diarrhea	<p>Drink lots of fluids to avoid dehydration (e.g., soups, diluted fruit juices, boiled water, herbal teas).</p> <p>Drink juices such as passion fruit; avoid strong citrus (e.g., orange, lemon) because it may irritate the stomach.</p> <p>Consume foods rich in soluble fiber to help to retain fluids (e.g., millet, banana, peas, lentils).</p> <p>Eat starchy foods like rice, maize, sorghum, bread, potato, cassava and blended foods like corn-soy blend (CSB).</p> <p>For protein, eat eggs, meat, chicken or fish.</p> <p>Boil or steam foods.</p> <p>Consume fermented foods like porridges and yogurt.</p> <p>Eat small amounts of food frequently and continue to eat following illness to recuperate from weight and nutrient loss.</p> <p>Eat soft fruits and vegetables like bananas, squash, banana matoke, mashed sweet potato, mashed carrots.</p> <p><i>Foods to avoid/reduce intake:</i></p> <p>Some dairy products such as milk if lactose intolerant.</p> <p>Caffeine (e.g., coffee, teas) and alcohol.</p> <p>Fatty foods including fried foods and extra oil, lard or butter.</p> <p>Gas-forming food such as cabbage, onions, and carbonated soft drinks (e.g., sodas).</p>	<p><i>Prevention</i></p> <p>Drink plenty of clean, boiled water.</p> <p>Wash hands with soap and water before handling, preparing, serving or storing foods.</p> <p>Wash hands with soap and water after using a toilet or latrine or cleaning a child after defecation.</p> <p><i>Treatment</i></p> <p>Drink more fluids to prevent dehydration.</p> <p>Prepare rehydration solutions using oral rehydration salt packets or a home-made solution of one liter of boiled water, four teaspoons sugar, and a half teaspoon of iodized salt.</p> <p>Go to a health center if symptoms such as severe dehydration persist (e.g., low or no urine output, fainting, dizziness, shortness of breath, bloody stools, high fever, vomiting, severe abdominal pain or diarrhea).</p>
Fever	<p>Eat soups that are rich in foods that give energy and nutrients, like maize, potatoes, and carrots.</p>	<p>Bathe in cool water.</p> <p>Rest.</p>

S U O

	<p>Drink plenty of liquids, more than usual beyond</p>	<p>Continue to be tolerated. Call to the health center in case of: fever that lasts several days and is not relieved with aspirin; loss of consciousness; severe body pain; as well as yellow eyes; severe diarrhea; and fits.</p>
Nausea and Vomiting	<p>Eat small and frequent meals. Eat foods like soups, unsweetened porridge and fruits like bananas. Eat lightly salty and dry foods like crackers to calm the stomach. Drink liquids, such as clean boiled water. Avoid spicy and fatty foods. Avoid caffeine (e.g., coffee, tea) and alcohol. Avoid overly sweets foods. Avoid having empty stomach; nausea is worse if nothing is in the stomach. Avoid lying down immediately after eating; wait at least 20 minutes to avoid vomiting. Rest between meals.</p>	<p>Eat small frequent meals. Nausea is worse if there is nothing in the stomach. Avoid lying down immediately after eating; wait at least 20 minutes to avoid vomiting. Rest between meals.</p>

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

MANAGING HIV DISEASE THROUGH NUTRITION INTERVENTIONS CHAPTER 2.

<i>Illness</i>	<i>Diet</i>	<i>Care Practices</i>
Thrush	<p>Eat soft mashed foods, such as carrot, scrambled eggs, mashed potatoes, bananas, soups, porridge .</p> <p>If available , use a spoon or cup to eat small amounts of foods.</p> <p>Eat cold or room temperature foods.</p> <p>Drink plenty of fluids.</p> <p>Avoid spicy, salty, or sticky foods; these may irritate mouth sores.</p> <p>Avoid sugary foods; these cause yeast to grow.</p> <p>Avoid strong citrus fruits and juices which may irritate mouth sores.</p> <p>Avoid alcohol.</p>	<p>Seek medical treatment.</p> <p>Rinse mouth with boiled warm salt water after eating to reduce irritation and keep infected areas clean so yeast cannot grow.</p> <p>Tilt head back when eating to help with swallowing.</p>
Anemia	<p>Eat more iron- and folic acid-rich foods such as animal products (e .g., eggs, fish, meat, liver), green leafy vegetables (e.g., collard greens, spinach), legumes (e .g., beans, lentils, groundnuts), and fortified cereals.</p> <p>Consume vitamin C-rich foods (e.g., citrus fruits, green leafy vegetables) at meal times to improve iron absorption.</p> <p>Do not drink tea, coffee, milk and cocoa at meal times; these inhibit iron absorption.</p> <p>Take iron folate supplements as recommended by a health worker.</p>	<p>Seek treatment for malaria and hookworm.</p>
Muscle Wasting	<p>Increase food intake by increasing quantity of food and frequency of consumption.</p>	<p>Eat small frequent meals.</p> <p>Eat soft liquid food if mouth sores present.</p>

	<p>Increase protein in diet by eating animal products, cereals, and legumes.</p> <p>Improve quality and quantity of foods by providing a variety of foods.</p> <p>Eat small frequent meals.</p>	<p>Slowly introduce fat in the diet.</p> <p>Increase intake of starchy foods in cereals and other staples.</p> <p>Use for tified foods.</p> <p>Maintain regular exercise. It is the only way to build muscles.</p>
Constipation Eat	<p>more foods that are high in fiber content, such as maize, whole-wheat bread, green vegetables, and washed fruits with the peel remaining.</p> <p>Drink plenty of liquids including boiled water.</p> <p>Avoid processed or refined foods.</p>	<p>Maintain regular exercise.</p> <p>Drink water, juices, and nectars every day.</p>
Bloatedness/ Heartburn	<p>Eat small, frequent meals.</p> <p>Avoid gas-forming foods (e.g., cabbage , soda) and spicy foods.</p> <p>Drink fluids between meals.</p>	<p>Eat small, frequent meals.</p> <p>Eat long enough before sleeping so food can digest.</p> <p>Avoid lying down immediately after eating.</p>
Tuberculosis Cor	<p>sume foods high in protein, energy, iron and vitamins.</p>	<p>Consult medical personnel about taking food with medications.</p> <p>If taking isoniazid for treatment, take a vitamin B6 supplement to avoid deficiency of this micronutrient.</p>
Loss of Taste and/or Abnormal Taste	<p>Use flavor enhancers (e.g., salt, spices, herbs, lemon). Chew food</p>	<p>well and move around mouth to stimulate receptors.</p>

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Planning Meals for PLWHAs

It is important to work with households to select foods that are easily available, acceptable, and affordable to prepare. In planning meals, the following elements should be considered:

The nutrient value and variety of the available foods (e.g., animal foods, legumes, nuts, fruits, vegetables, staples, and fats);

The nutritional needs of the person(s), including the additional energy requirements due to infections and stage in the life cycle (e.g., pregnancy, lactation, childhood, adolescence);

The personal food preferences of the PLWHAs;

The effects of taking drugs, such as ARVs, on diet or drug food interactions (see Chapter 3 for more information on nutrition and ARVs);

The time required for food preparation; and

The cost and availability of food.

Persons caring for PLWHAs need to plan

In planning a meal for an HIV-infected individual, follow three steps:

1. Begin by assessing the stage in the disease based on the presence or absence of symptoms and opportunistic infections, the medications being taken, the food preferences and dietary practices of the PLWHAs, the quantity of food consumed, the frequency of meals, and the types of foods that are regularly consumed including staple foods.
2. Identify and reinforce good dietary practices. Identify the nutrients not adequately covered through food consumption. Analyze the reasons for the inadequacy and opportunities to meet these needs.
3. Based on the assessment, plan a varied diet with the client. Work with households to select foods that are easily available, acceptable, and affordable.

meals that are adequate and satisfy their physical and emotional needs. Compared to the requirements of healthy, non-HIV-infected people of the same age, sex, and physical activity level, HIV-infected asymptomatic persons need 10 percent more energy and HIV-infected symptomatic persons need 20 to 30 percent more energy. Meals should contribute to good health, be visually appealing, and provide aromas and tastes that stimulate the appetite.



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

MANAGING HIV DISEASE THROUGH NUTRITION INTERVENTIONS CHAPTER 2.

Selected References

- Abdale, F., and V. Kraak. *Community-Based Nutrition Support for People Living with HIV/AIDS: A Technical Assistance Manual*. New York, N.Y.: Gods Love We Deliver, 1995.
- AIDSLINK. *Eating with Hope: Taking Control of Your Life through Good Nutrition*. Johannesburg, South Africa: Gauteng Department of Health, Greater Johannesburg Metropolitan Council, 1997.
- Bijlsma, M. *Living Positively: A Nutrition Guide for People with HIV/AIDS*. Mutare City, Zimbabwe: Mutare City Health Department, 1996.
- Bonnard, P. *HIV/AIDS Mitigation: Using What We Already Know (Technical Note 5)*. Washington, D.C.: Food and Nutrition Technical Assistance Project (FANTA), Academy for Educational Development (AED), 2002.
- Castleman, T., E. Seu mo -Fosso, and B. Coovill. *Food and Nu*
- Gods Love We Deliver. *Eating Tips for HIV Disease*. New York, N.Y.: Gods Love We Deliver, 1994.
- Kennedy, R.D. *The South African National Guidelines on Nutrition for People Living with HIV/AIDS*. Pretoria, South Africa: AFRICON, South Africa Department of Health, United Nations Childrens Fund (UNICEF), 2001.
- Kennedy, R.D., and U.E. MacIntyre. *Development and testing of the South African nutrition guidelines for people living with HIV/AIDS*. South African Journal of Clinical Nutrition 16 (2001): 1-6.
- Ministry of Agriculture, Animal Industry and Fisheries, Republic of Uganda and United Nations Development Programme (UNDP). *Feeding Guidelines for People Living with HIV/AIDS: A Handbook for Field Extension Agents*. Kampala, Uganda: UNDP, 1997.
- Network of African People Living with HIV/AIDS

Cognitive and Nutritional

therapy in Resource Limited Settings (Technical Note 7). 2nd ed. Washington, D.C.: Food and Nutrition Technical Assistance Project (FANTA), Academy for Educational Development (AED), 2004.

Clark, T.D., and R. D. Semba. Iron supplementation during human immunodeficiency virus infection: A double-edge sword. Medical Hypotheses 57 (2001): 476-479.

Epstein, L. Food for People Living with HIV/AIDS. Cape Town, South Africa: Network of Malawian People Living with HIV/AIDS and Network for Zambian People Living with HIV/AIDS, 1995.

Food and Agriculture Organization of the United Nations (FAO). Living Well with HIV/AIDS. Rome, Italy: FAO, 2002.

Fields-Gardner, C., S. Salomon, and M. Davis. *Living Well with HIV and AIDS: A Guide to Nutrition*. Chicago, IL: American Dietetic Association, 2003.

AIDS.

for People Living with HIV/AIDS. Nairobi, Kenya: Network of African People Living with HIV/AIDS, 1997.

Better Nutrition. G., and E.A. Preble. *HIV/AIDS and Nutrition: A Review of the Literature and Recommendations for Nutritional Care and Support in Africa*. Washington, D.C.: Food and Nutrition Technical Assistance Project (FANTA), Academy for Educational Development (AED), 2000.

Van der Maas, T., and N. Van der Maas. *Straight Talk*. Somerset West, South Africa: Helderber Printer, 1999.

Wences, M., M. Kudrati, R. Rajani, and H. Grosskurth. *Life First: A Practical Guide for People with HIV/AIDS and Their Families*. Dar es Salaam, Tanzania: American Medical Research Foundation (AMREF)/Tanzania and Kuleana, 1993.

World Health Organization (WHO). *Energy and Protein Requirements, Report of Joint FAO/WHO/UNU Expert Consultation* (Technical Report Series 724). Geneva, Switzerland: WHO, 1985.

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Websites

**Academy of Educational Development
(AED)**

www.aed.org

American Dietetic Association

www.eatright.org/Public/

**Food and Agriculture Organization of the
United Nations (FAO): HIV/AIDS and
Food Security**

www.fao.org/hivaids/

**Food and Nutrition Technical Assistance
Project (FANTA)**

www.fantaproject.org

Gods Love We Deliver

www.godslovedeliver.org

**Joint United Nations Program on HIV/
AIDS (UNAIDS)**

www.unaids.org

South Africa Department of Health

www.doh.gov.za

**United Nations Childrens Fund
(UNICEF): HIV/AIDS Program**

www.unicef.org/aids/index.html

**United Nations Development Programme
(UNDP)**

www.undp.org

S U O

**World Health Organization (WHO): HIV/
AIDS Program**
www.who.int/hiv/en/

28

Nutritional Issues Associated with Modern and Traditional Therapies

3.

CHAPTER

3. Nutritional Issues Associated with M

The purpose of this chapter is to provide information on:

The nutritional issues related to modern and traditional therapies used by PLWHAs; and

The dietary responses that can be used to manage medication side effects and medication-food interactions.

Foods and medications can interact in a number of ways to create health and nutritional positive and negative outcomes in PLWHAs. Interactions between modern medications and food and nutrition can involve:

The effect of certain foods on how drugs work in the body;

The effect of certain drugs on how food is

People infected with HIV may take various modern medications, including antibiotics to treat opportunistic infections, ARVs to treat HIV/AIDS, and anti-malarial, anti-helminth, and anti-fungal medications to treat other conditions such as malaria, intestinal parasites, and thrush. Often, these medications interact with specific nutrients or types of foods and have a positive or negative impact on health and nutritional status. The interaction can affect the efficacy of the medication by reducing its potency. Additional dietary supplements, such as mineral tonic and vitamin pills, are also often used and should be considered when evaluating possible harmful effects or interactions. Some people may stop taking the medication due to an adverse reaction. To minimize the negative effects of food-medication interactions and to maximize benefits of available medications and nutrients, it is important to develop various food-medication management strategies using locally available resources.

used in the body;

The side effects of a medication, which, in turn, can affect food intake and nutrient absorption; and

Unhealthy side effects caused by combinations of certain medications and foods.

In the first section of this chapter, the medication-food interactions and the side effects of modern medications are explained, followed by approaches to minimize the negative impact on diet and nutrition.

The second section of this chapter focuses on the nutritional implications of traditional and alternative therapies for HIV/AIDS. Traditional therapies usually include the use of foods, plants, animal or mineral substances, clays, and herbs that are believed to have preventive, healing, or curative properties. However, because many traditional therapies are not well documented or understood, the nutritional and medical effects are mostly

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

unknown. To maximize the positive benefits of these treatments and to minimize the negative effects, program managers and health workers are encouraged to collaborate with traditional healers to help identify any harmful effects of traditional therapies as well as interactions with modern medications and foods.

Antiretroviral Drugs

Antiretroviral drugs (ARVs) are medications used to treat HIV/AIDS. Although ARVs do not completely destroy HIV, they significantly reduce the replication of the virus in the blood, which slows down progression of the disease to AIDS.

The main types of ARVs include:

- Non-nucleoside reverse transcriptase inhibitors (NNRTIs);
- Nucleoside analogues or nucleoside reverse transcriptase inhibitors (NRTIs);
- and
- Protease inhibitors (PIs).

inhibitors, which are a different type of ARV not yet available in resource limited settings and, therefore, not discussed in this chapter.

Table 3.1. provides examples of medications in the major types of ARVs available in resource limited settings:

Each type of ARV is active at different stages of the virus in the replication cycle. Combining two or more ARVs enhances drug efficacy, which is referred to as combination therapy or highly active antiretroviral therapy (HAART). For example, the action of the ARV zidovudine is enhanced if used in combination with

Fusion inhibitors are a new type of ARV that prevent HIV from binding to the surface of the T-cell and infecting the T-cell. HIV-positive people who have become resistant to NNRTIs, NRTIs, and PIs will likely benefit from fusion

inhibitors. It is likely that a person receiving ART will take a combination of ARVs to best prevent replication of the HIV virus. WHO recommends four first-line HAART regimens for adults and adolescents in resource limited settings listed in the box on the following page.

Table 3.1. Classes and Types of ARVs

<i>Class</i>	<i>Type</i>	<i>Examples of Drugs</i>
Reverse Transcriptase Inhibitor	Non-nucleoside reverse transcriptase inhibitor (NNRTI)	efavirenz (EFZ) nevirapine (NVP)
	Nucleoside reverse transcriptase inhibitor (NRTI)	abacavir (ABC) didanosine (ddl) lamivudine (3TC) stavudine (d4T) zidovudine (ZDV)
	Nucleotide reverse transcriptase inhibitor (NtRTI)	tenofovir (TDF)
Protease Inhibitor	Protease Inhibitor (PI)	indinavir (IDV) lopinavir (LPV) nelfinavir (NFV) ritonavir (RTV) saquinavir (SQV)

First-Line ARV Regimens Recommended by WHO for Resource Limited Settings

1. stavudine + lamivudine + nevirapine
2. zidovudine + lamivudine + nevirapine
3. stavudine + lamivudine + efavirenz
4. zidovudine + lamivudine + efavirenz

Source: World Health Organization (WHO).
Scaling Up Antiretroviral Therapy in Resource-Limited Settings: Guidelines for a Public Health Approach. Geneva, Switzerland: WHO, 2003.

ART is not required at all stages of HIV. Generally, ART is used when the virus has begun to significantly damage the immune system. WHO recommends a person begin ART when that person meets any of the following three conditions see Table 1.1. for definitions of WHO stages of HIV:

Access to New Information

Since knowledge in the area of ARVs is recent and continues to evolve, it is important for health workers and program planners to remain up-to-date as new ARVs become available or as new information emerges about existing ARVs. An important component of this process is to identify sources of information about ARVs and other drug-food interactions and to develop communication channels to ensure that this information reaches caregivers and PLWHAs in an easily comprehensible form. Sources of information may include ministries of health, AIDS service organizations, drug product information, pharmaceutical services, and journals or other periodicals.

ARVs and Pre-existing Malnutrition

Most existing recommendations on ARVs are based on research with well nourished, relatively food secure populations. The dietary implications for individuals suffering from pre-existing protein energy malnutrition and micronutrient deficiencies may be different, such as in resource limited

WHO stage 4 of HIV regardless of CD4 count

WHO stage 3 of HIV with a CD4 count below 350/mm³

WHO stages 1 or 2 of HIV with CD4 count below 200/mm³

Or if CD4 testing is unavailable, WHO recommends a person begin ART when that person meets any of the following three conditions:

WHO stage 4 of HIV regardless of total lymphocyte count

WHO stage 3 disease regardless of total lymphocyte count

WHO Stage 2 disease with a total lymphocyte below 1200/mm³

Because many ARVs may negatively interact with certain foods and nutrients, dietary management of ARV-food interactions can help improve the efficacy of ARVs while also minimizing their negative nutritional impact and enhancing adherence to drug regimens.

settings. This relates both to drug efficacy and nutrient absorption and metabolism. For example, what is the effect of pre-existing malnutrition on the absorption or metabolism of ARVs. Given that malnutrition adversely affects medication efficacy, are there specific nutritional responses that can mitigate these effects. Conversely, what is the impact of medication on malnourished individuals. These questions, as yet, do not have answers.

ARVs and Breastfeeding

Breastfeeding is strongly encouraged and commonly practiced in resource limited settings, including by HIV positive women. WHO recommends that: When replacement feeding is acceptable, feasible, affordable, sustainable, and safe, avoidance of all breastfeeding by HIV-infected mothers is recommended. Otherwise, exclusive breastfeeding is recommended during the first months of life. To minimize HIV transmission risk, breastfeeding should be discontinued as soon as feasible, taking into account

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

local circumstances, the individual woman's situation, and the risks of replacement feeding (including infections other than HIV and malnutrition). Since some ARVs can affect fat metabolism, the effects of ARVs on breastmilk composition are not known. These effects may have implications for the health of infants as well as the health of HIV-positive mothers taking ARVs.

There is a need for further research on these issues, especially as access to ARVs increases in resource limited settings. Until further findings emerge, however, recommendations should be based on existing knowledge and basic health and nutritional principles.

For more information on breastfeeding and other infant feeding options, please see Chapter 5, Nutritional Care Recommendations for Infants and Children.

Nutritional Issues Associated with ARVs and Other Modern Medications

Modern medications can interact with food in four major ways as illustrated in Figure 3.1. Proper dietary management interventions can help manage some of these negative effects and can help PLWHAs maintain adequate food intake and compensate for affected

nutrients. Table 3.2. includes the side effects of some common modern medications as well as dietary management interventions to encourage adherence to the prescribed drug regimen and minimize the side effects that negatively affect nutritional status.

Figure

<p>3.1. Types of Food - Medication Interactions</p>	<p>➔ (Affects)</p>	<p>MEDICATION ABSORPTION, METABOLISM, DISTRIBUTION, EXCRETION</p>
<p>2. MEDICATION</p>	<p>➔ (Affects)</p>	<p>NUTRIENT ABSORPTION, METABOLISM, DISTRIBUTION, EXCRETION</p>
<p>3. MEDICATION SIDE EFFECTS</p>	<p>➔ (Affects)</p>	<p>FOOD CONSUMPTION, NUTRIENT ABSORPTION</p>
<p>4. MEDICATION + CERTAIN FOODS</p>	<p>➔ (Creates)</p>	<p>UNHEALTHY SIDE EFFECTS</p>

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

NUTRITIONAL ISSUES ASSOCIATED WITH MODERN AND TRADITIONAL THERAPIES CHAPTER 3.

Food Affects Medication Efficacy

Food can enhance or inhibit the absorption, metabolism, distribution, and excretion of medication and, therefore, affect the medications efficacy. This type of interaction varies from drug to drug and requires tailored dietary responses, which can improve the efficacy of the drug as well as encourage clients to adhere to the prescribed drug regimen.

For example:

Food reduces the absorption of isoniazid, which is used to treat TB, a common opportunistic infection. Therefore, isoniazid should be taken at least one hour before or two hours after a meal.

Rifampin is also used to treat TB and, like isoniazid, its absorption is reduced by food. Rifampin should be taken one or two hours after a meal to increase the drugs absorption.

Food enhances absorption or metabolism of some ARVs and inhibits absorption or metabolism of others. For example, a high calorie, high fat, high protein meal decreases absorption

antibiotic and anti-TB medication rifampin may increase vitamin D metabolism, resulting in weakened bones. Therefore, vitamin D supplementation may be required. Treatment of TB should be accompanied by a vitamin B6 or vitamin D supplement, depending on the type of antibiotic used.

Some ARVs can lead to lipodystrophy syndrome or fat maldistribution, which is characterized by either fat accumulation (e.g., breasts, upper back, visceral fat) or fat loss (e.g., face, extremities). Depending on the ARV drug, patients may experience changes in fat distribution in the body and levels of triglycerides and cholesterol in the blood.

It is important to maintain a healthy weight, eat a variety of foods, reduce intake of refined sugar and excessive carbohydrates, increase intake of fiber, avoid alcoholic beverages and smoking, exercise regularly, and take medications to lower harmful fats in the blood.

The effective management of lipodystrophy syndrome has not yet been established. Potential approaches include diet and exercise,

decreases absorption of the medication. In contrast, the use of a high fat meal increases the bioavailability of tenofovir and reduces the absorption of zidovudine. Zidovudine should not be taken with high fat meals (i.e., more than 40 g of fat or three tablespoons of margarine or oil).

Medication Effects on Nutrient Absorption, Metabolism, Distribution, and Excretion

Certain modern medications can affect health and nutritional outcome by inhibiting or enhancing nutrient absorption, metabolism, and excretion. Dietary management may require nutrient supplements or increased food intake, if there is a need to compensate for a depleted nutrient.

TB is an opportunistic infection that affects 30 percent of PLWHAs in resource limited settings. The TB medication isoniazid inhibits the metabolism of vitamin B6, which is important for the metabolism of fats and proteins. Therefore, vitamin B6 supplementation is recommended. The

use of medications, and change in the ARV regimen.

Some protease inhibitors, such as indinavir, may affect glucose or sugar metabolism and cause insulin resistance. Insulin resistance is associated with increased risk of diabetes. In case of diabetes, a specific carbohydrate controlled diet, reduced intake of refined sugar and saturated fat, exercise, and anti-diabetic medications are recommended.

The Side Effects of Modern Medications

Modern medications may have side effects that affect food intake and nutrient absorption. Many of these side effects may be managed by dietary responses. Proper nutritional management of these side effects will contribute to improved adherence to the regimen. When not properly managed, side effects of medications often lead to the interruption of treatment and contribute to poor adherence. Health workers and counselors should provide clients with dietary guidance that is specific to local situations.

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Side effects of medication, such as taste changes, loss of appetite (i.e., anorexia), nausea, bloating, heartburn, constipation, vomiting, and diarrhea, indirectly affect nutritional status by causing a reduction in food intake or nutrient absorption. Reduced food intake and poor nutrient absorption can lead to weight loss and continuing impairment of the immune system, which, in turn, allows HIV to more quickly progress to AIDS.

Dietary management of these side effects can help maintain food intake, compensate for nutrient losses, and prevent weight loss. Some side effects of medications can be similar to certain AIDS-related symptoms and call for similar dietary management. The following are examples:

Changes in taste. The protease inhibitors saquinavir and zidovudine cause changes in taste and can cause food to taste metallic, sweeter, sourer, or too salty, which, in turn, may cause an individual to consume less food. This can be addressed by using flavor enhancers such as salt, sugar, spices, vinegar, or lemon to stimulate the taste buds, increase taste acuity, and mask

Again, check with local medical authorities to ensure proper management of weakened bones.

Some side effects of ARVs are similar to symptoms of opportunistic infections, such as diarrhea. Therefore, the health worker must continue to be alert to recognize symptoms of infections and treat these infections appropriately.

Multiple Medications

Treatment of AIDS may require taking many pills on a daily basis, which can make it difficult to maintain food intake. If medications make it difficult to eat, a person is less likely to strictly adhere to the drug regimen, which can create drug resistance, especially in the case of ARVs. It is vital that health workers explain the necessity of healthy eating to the furthest extent possible, while also adhering to the drug regimen.

Multiple medications have multiple food-drug interactions and side effects that require setting specific timing, identifying recommended

any foods are added to soup will boost flavor and can help to improve intake.

Anorexia. Several medications, such as isoniazid and the ARVs lamivudine and stavudine, may cause anorexia and lead to reduced food intake. The dietary management of anorexia requires eating small and frequent meals and favorite foods. PLWHAs who experience anorexia should eat five to six meals a day and should include energy- and nutrient-dense foods at each small meal to ensure adequate nutrient intake. It is also important to maintain as much physical activity as possible, such as walking in fresh air, which also helps to stimulate appetite.

Some ARVs have been associated with increased risk of osteoporosis and weakening of bones that may require medical and dietary responses. For osteoporosis, a balanced diet with high calcium foods, such as milk, yogurt, cheese, and vitamin D supplement, is recommended, along with medical care.

34

foods, and health workers should spend enough time with the PLWHAs, to list all the drugs taken and counsel on the dietary management of the side effects and the interactions with food.

Drug-Drug Interactions

Drug interactions need to be managed adequately in order to ensure that the prescribed drug combination does not diminish drug efficacy, increase side effects, and affect nutritional status. For example, the ARV didanosine reacts with antacid medications containing magnesium and aluminum, leading to increased side effects of didanosine. Therefore, didanosine should not be taken at the same time with the antacid medications containing magnesium and aluminum.

Medication and Food Can Cause Unhealthy Side Effects

The combination of some medications and food can create unhealthy side effects or reduce the positive impacts of the drugs. Table 3.2. lists some of the medications used in resource



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

NUTRITIONAL ISSUES ASSOCIATED WITH MODERN AND TRADITIONAL THERAPIES CHAPTER 3.

limited settings. The table shows their purpose, potential side effects, and recommended ways of taking the medications. Program planners are encouraged to add or update the list as medications become available.

Table 3.2. Modern Medications and Recommended Food Intakes and Side Effects

<i>Medication</i>	<i>Purpose</i>	<i>Nutrition Recommendations</i>	<i>Food/ Beverages/ Herbs to Avoid</i>	<i>Potential Side Effects*</i>
Sulfonamides: Sulfamethoxazole, Cotrimoxazole (Bactrim Septra)	Antibiotic for treating pneumonia and toxoplasmosis	Take with food		Nausea, vomiting, abdominal pain
Rifampin	Treatment of TB	On an empty stomach one hour before or two hours after meals	Alcohol Nausea,	vomiting, diarrhea, loss of appetite
Isoniazid	Treatment of TB	One hour before or two hours after meals Supplement with 10	Alcohol Anorexia,	diarrhea; may cause possible reactions with foods such as bananas, beer, avocados, liver, smoked or pickled fish, yeast, yogurt;

		10 mg daily vitamin B6		may interfere with vitamin B6 metabolism, therefore will require vitamin B6 supplement to prevent peripheral neuropathy and anemia
Quinine	Treatment of malaria	With food		Abdominal or stomach pain, diarrhea, nausea, vomiting; lower blood sugar
Sulfadoxine and Pyrimethamine (Fansidar)	Treatment of malaria Pyrimethamine is also used to treat toxoplasmosis	With food and consume large quantities of water Supplement daily with folic acid (leucovorin), the active form of folate (5-10 mg/ day)		Nausea, vomiting, taste loss and diarrhea; not recommended if folate deficient; not recommended for breastfeeding women
Chloroquine	Treatment of malaria	With food		Stomach pain, loss of appetite, nausea, vomiting; not recommended for breastfeeding women

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

<i>Medication</i>	<i>Purpose</i>	<i>Nutrition Recommendations</i>	<i>Food/ Beverages/ Herbs to Avoid</i>	<i>Potential Side Effects*</i>
Fluconazole	Treatment of thrush	With food		Nausea, vomiting, diarrhea; can be used during breastfeeding
Nystatin	Treatment of thrush	With food		Infrequent occurrence of diarrhea, vomiting, nausea
Antiretroviral drugs				
Abacavir (ABC) NNRTI	Antiretroviral Can	be taken without regard to food		Nausea, vomiting, fever, allergic reaction, anorexia, abdominal pain, diarrhea, anemia, rash, hypotension, pancreatitis, dyspnea, weakness and insomnia, cough, headache
Didanosine (ddl) NNRTI	Antiretroviral Take	one hour before or two hours after eating with water only	Alcohol, juice	Anorexia, diarrhea, nausea, vomiting, pain, headache, weakness, insomnia, rash, dry mouth, loss of taste, constipation, stomatitis, anemia, fever, dizziness, pancreatitis; do not take with antacid containing aluminum or magnesium
Lamivudine (3TC) NNRTI	Antiretroviral Can	be taken without regard to food	Alcohol Nausea,	vomiting, headache, dizziness, diarrhea, abdominal pain, nasal symptoms, cough, fatigue, pancreatitis, anemia, insomnia, muscle pain, and rash
Stavudine (d4T) NNRTI	Antiretroviral Can	be taken without regard to food	Limit alcohol	Nausea, vomiting, diarrhea, peripheral neuropathy, chills and fever, anorexia, stomatitis, diarrhea, anemia, headaches, rash, bone marrow, and pancreatitis
Tenofovir	Antiretroviral		Alcohol	

NNRTI	With food		Abdominal pain, headache,	fatigue, and dizziness.
Zidovudine (AZT) NNRTI	Antiretroviral Can	be taken with food, but do not take with a high fat meal	Alcohol, Anorexia,	anemia, nausea, vomiting, bone marrow suppression, headache, fatigue, constipation, fever dizziness, dyspnea, insomnia, muscle pain, rash
Efavirenz NRTI	Antiretroviral Can	be taken with food, but do not take with a high fat meal	Alcohol Elevated	blood cholesterol levels, elevated triglycerides levels, rash, dizziness, anorexia, nausea, vomiting, diarrhea, dyspepsia, abdominal pain, flatulence
Nevirapine (NVP) NRTI	Antiretroviral Can	be taken without regard to food	St Johns wort	Nausea, vomiting rash, fever, headache, skin reactions, fatigue, stomatitis, abdominal pain, drowsiness, paresthesia; high hepatotoxicity

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

NUTRITIONAL ISSUES ASSOCIATED WITH MODERN AND TRADITIONAL THERAPIES CHAPTER 3.

<i>Medication</i>	<i>Purpose</i>	<i>Nutrition Recommendations</i>	<i>Food/ Beverages/ Herbs to Avoid</i>	<i>Potential Side Effects*</i>
Indinavir (IDV) PI	Antiretroviral	Take the drug one hour before or two hours after meal; drink at least 1,500 mL of fluid daily	St Johns wort	Nausea, abdominal pain, headache , kidney stones, taste changes, vomiting, vomiting, diarrhea, insomnia, ascites, weakness, dizziness; may increase the risk of lipodystrophy; do not consume grapefruit as it may lower the level of medicine in the blood
Lopinavir PI	Antiretroviral	Can be taken without regard to food	St Johns wort	Abdominal pain, diarrhea, headaches, headache, weakness, nausea; may increase the risk of lipodystrophy and or diabetes
Nelfinavir PI	Antiretroviral	Take with meal or light snack	St Johns wort	Diarrhea, flatulence, nausea, abdominal pain, rash; may increase the risk of lipodystrophy
Ritonavir PI	Antiretroviral	Take with meal if possible	St Johns wort	Nausea, vomiting, diarrhea, hepatitis, jaundice , weakness, anorexia, abdominal pain, fever, diabetes, headache , dizziness; may increase the risk of lipodystrophy

Saquinavir PI	Antiretroviral	Take with meal or light snack; take within two hours of a high fat meal and high calcium meal	Garlic supplements St Johns wort	Mouth ulceration, taste changes, nausea, vomiting, abdominal pain, diarrhea, constipation, flatulence, weakness rash, headache; may increase the risk of lipodystrophy
------------------	----------------	---	-------------------------------------	--

This list is not comprehensive .

*For nutritional management of side effects, refer to Table 2.2. in Chapter 2.

- Sources: a) Pronsky, Meyer, and Fields-Gardner. HIV Medications Food Interactions. 2001.
 b) Nerad, Romeyn, Silverman, Allen-Reid, Dietrich, Merchant, Pelletier, Tinnerello, Fenton, General Nutrition Management in Patients Infected with Human Immunodeficiency Virus. Clinical Infectious Disease 36 (2003).
 c) World Health Organization (WHO). Scaling Up Antiretroviral Therapy in Resource-Limited Settings: *Guidelines for a Public Health Approach*. Geneva, Switzerland: WHO, 2003.



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Table 3.3. Food Interactions and Side Effects of Isoniazid

<i>Medication Dietary</i>	<i>Interactions and the Medication Side Effects</i>	<i>Dietary Responses/Instructions for PLWHAs</i>
Isoniazid TB treatment	Food reduces absorption of isoniazid	Do not take isoniazid during meals. Take one hour before or two hours after meals.
	May affect vitamin B6 metabolism	Daily consumption of food sources of vitamin B6 such as white beans, maize avocado, meat, and fish, or vitamin B6 (25 to 50 mg daily) supplementation is recommended.
	Increased risk of hepatitis when combined with alcohol	Avoid alcohol.
	Anorexia (i.e., loss of appetite) and Diarrhea	Eat small and frequent meals. Eat favorite foods.
		Drink plenty of fluids and eat energy- and nutrient-rich food. Avoid fried foods.

Multiple Food Interactions of a Drug

The various drug-food interactions require specifically tailored dietary responses according to medication and nutrition needs. Table 3.3., for example, shows the various food interactions and side effects associated with the TB treatment drug isoniazid.

Traditional Therapies

Many traditional approaches are not well documented and their nutritional effects are mostly unknown. Most of these therapies have not been subjected to clinical research and, thus, their effect on the course of HIV disease is unknown. People widely use traditional medicines and trust them. However, it is

It is very important for program managers and traditional healers to work together to ensure that all the treatment options available to PLWHAs.

There are often locally available remedies for treating illnesses common to PLWHAs, such

important to recognize that traditional therapies may be beneficial or detrimental to a person's health; They may need to manage interactions between traditional therapies and food and nutrition; There is a cost associated with traditional therapies, which people are willing to pay; Dietary management of side effects still apply when using traditional medications; and It is important to be knowledgeable about the common traditional therapies that are used in the program area.

as well as sore throats, and thrush. A number of dietary approaches as well as some alternative or traditional ways of dealing with common illnesses are described in the Table 3.4. The remedies listed are sometimes used in East and Southern Africa. Program managers are encouraged to compile an expanded list of treatments used to alleviate symptoms associated with AIDS. However, scientific evidence of their efficacy is limited and some may have side effects.

As the effects of food on the efficacy of the medication are drug-specific, the nutritional assessment by the health worker should include an assessment of all the medications

the client is taking, including ARVs, and the food commonly eaten. The health worker should work with PLWHAs to identify the most appropriate dietary interventions with regards to timing of meals and what types of foods to consume or avoid to ensure the efficacy of the medication and optimize the metabolism of nutrients.

Nutritional Issues Associated with Traditional Therapies

Traditional therapies and modern therapies can interact and affect both drugs efficacy. For example, studies have shown that the blood concentration of the PI saquinavir decreases by 50 percent in the presence of garlic supplement, which is taken as a traditional therapy to strengthen the immune system. Saquinavir should not be taken with a garlic supplement. To promote consistent dietary guidance, program planners should encourage dialogue and consultation between modern and traditional practitioners.

Traditional therapies vary widely and are specific to local circumstances and

Properties of Some Traditional Remedies

Garlic: Used to build a healthy heart; helps soothe symptoms of thrush, mild diarrhea and headaches

Tea made from lemon leaves, guava leaves, or gum or Neem tree leaves: Used to treat sore throats and coughs

Gum tree leaves with vegetable oil: Used to treat minor skin problems

Lavender or geranium, crushed and boiled with water: Used to treat skin rashes associated with shingles

practitioners. Therefore, health workers and program planners should learn about local remedies by asking traditional healers and their clients about commonly treated illnesses. Program planners, in consultation with modern and traditional therapists, should assess the benefits and disadvantages of available treatments, and ensure that approaches are consistent with the nutritional guidelines presented in this guide. In situations where treatment is in conflict with sound nutritional or medical approaches, it is necessary to review the recommendations with the traditional healer and health authorities. For example, a traditional healers recommendation to avoid fluids during bouts of diarrhea is cause for concern. However, if the recommendation is for a tea made with boiling water and a local herb, the benefit is likely to be positive.

Program planners may also consider involving modern and traditional providers in the design of guidelines for nutritional management of modern and traditional therapies and food interactions in a specific setting.

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Table 3.4. Examples of Traditional Ways of Dealing with Common Illnesses and Symptoms in AIDS

<i>Illness/ Symptom</i>	<i>Traditional Ways of Dealing with the Illness or Symptom</i>	<i>When to Seek Assistance from Modern Health Services</i>
Diarrhea	<p>Eat fruits such as ripe bananas.</p> <p>Drink the water from boiled white rice and light porridges made of maize and cassava.</p> <p>Prepare rice soup. Boil one cup of rice in five to six cups of water and a bit of salt for 1 hour. Drink the soup while it is warm.</p> <p>Drink fermented milk three to four times a day. Fermented milk does not contain lactose, a sugar that can be associated with abdominal pain during diarrhea.</p> <p>Drink garlic tea. Chop three or four cloves of garlic and add to one cup of boiling water. Simmer for 10 minutes and then cool slightly before drinking. Drink the tea three to four times per day.</p>	<p>If there is blood in the stool</p> <p>If diarrhea is accompanied by fever that cannot be relieved by aspirin or home treatment</p> <p>If the patient is too weak to eat or very dehydrated and efforts to rehydrate are not working</p> <p>If diarrhea does not go away after two to three days</p>
Fever	<p>Drink citrus (e.g., lemon, orange) juice several times throughout the day.</p> <p>Pound lemon or orange peel with a small amount of water. Rub on the patients back or add to bathwater before bathing.</p> <p>Pound gum/eucalyptus leaves in a mortar with a small amount of cooking oil. Rub the oil onto the patients chest. Or place a large number of gum leaves in a pot of boiling water. Leave the pot in the patients room so the vapors can be inhaled.</p> <p>Cut a fresh twig from a neem tree (i.e., <i>Azadirachta indica</i>). Remove the leaves, and have the patient chew the bark; or boil some water with the bark and have the patient drink the tea.</p>	<p>If fever lasts more than three days</p> <p>If the patient is very hot or delirious</p> <p>If fever is accompanied by other signs of serious illness</p>
Cough	<p>Crush some fresh gum tree leaves and place them in boiling water.</p> <p>When the water is boiling, remove the pot from the fire. Place a cloth over the persons head and lean over the pot to breathe the vapors.</p> <p>Place three to four dried gum tree leaves in a cup of hot water and boil for ten minutes. Let the tea cool slightly before drinking. The tea should be consumed two to three times a day.</p> <p>Tea can also be made with lemon or guava leaves.</p>	<p>If the person is coughing blood or thick, bad-smelling sputum or mucous</p> <p>If the cough lasts more than two weeks</p>
Headaches	<p>Crush some lavender leaves with a little cooking oil until a paste is formed. Rub it into the temples and forehead. Also rub some dried lavender</p>	<p>If the patients neck is stiff</p> <p>If the patient also has a high fever</p> <p>If</p>

	<p>leaves in your hands and smell them frequently.</p> <p>Make garlic and onion tea. Chop two to three cloves of garlic and one half bulb of onion. Put the chopped garlic and onion into a cup of hot water. Allow the water to simmer for 10 minutes. After 10 minutes, let the tea cool slightly before drinking.</p>	<p>the after two to three days</p> <p>headache</p> <p>does</p> <p>not</p> <p>go</p> <p>away</p>
Sore Throats	<p>Squeeze a whole lemon and mix with honey. Take a large spoonful as necessary.</p> <p>Mix a strong solution of salt and warm water. Gargle with this solution several times a day.</p> <p>Eat raw garlic or make garlic tea. Chop three to four cloves of garlic. Add chopped cloves to one cup of boiling water. Allow water to simmer for 10 minutes. Let it cool before drinking. Add honey or sugar to sweeten if available .</p>	<p>If the patient cannot swallow or breathe properly</p> <p>If the patient has a fever that cannot be relieved by aspirin or home treatment</p> <p>If the patient develops a rash</p> <p>If the sore throat lasts more than two weeks</p>

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

NUTRITIONAL ISSUES ASSOCIATED WITH MODERN AND TRADITIONAL THERAPIES CHAPTER 3.

<p>Thrush Eat one</p>	<p>to two cloves of raw garlic every three to four hours if available . If the raw garlic is too strong, crush the cloves and mix with a small amount of clean boiled water. Rinse the mouth with this mixture and then swallow the rest. Repeat every three to four hours.</p> <p>Drink sour/fermented milk. This will help to prevent yeast from growing.</p> <p>Eat green papaya or paw paw as a relish or side dish.</p> <p>Gargle with slightly salty, warm, clean water.</p> <p>Avoid sweet foods and sweet drinks (e .g., carbonated soft drinks), which will increase the soreness and help the yeast to grow.</p> <p>Avoid sugar and honey.</p>	<p>When a fever is present and cannot be relieved by aspirin or home treatment</p> <p>If no improvement occurs after a few days</p> <p>If pain causes a complete loss of appetite</p>
-----------------------	--	---

Source: Malawi National AIDS Control Programme. Handbook of Herbal Remedies for Some AIDS-Related Illnesses. Lilongwe, Malawi: Malawi National AIDS Control Programme, 1996.

**Guidance on Effective Nutrition/
Medication Management for
Antiretroviral Therapy (ART)**

The following are guidelines for health workers that can help promote effective nutrition-medication management for ART.

1.

and whether there have been positive or negative changes in symptoms, side effects, or drug adherence. Consult with PLWHAs and suggest other options when recommended foods are not available.

Assessments help identify the most effective communications channels for disseminating the updated recommendations on dietary

- Counsel understanding that ARVs are not a cure.
- Food effects on the medications efficacy, medication effects on nutrient absorption and metabolism, and the side effects of the medications.
- The timing for taking medications and food/meals. Explain the necessity of accurate timing for meals and drugs. Involve PLWHAs and family members in constructing a meal and drug-taking timetable and in selecting the foods available to address the negative effects of medications and food interactions.
- The dietary management of the medications negative effects on nutrient absorption, metabolism, distribution, and excretion and the side effects of the medications. Highlight the foods that should not be taken while taking the medications and provide appropriate guidance.
2. Provide psychosocial support at the onset of treatment.
 3. Assess any difficulties that PLWHAs may be having in following the planned diet and timetable due to food access or availability, taste, or other reasons

management of food and medication interactions to program planners, health workers, caregivers, and PLWHAs. Below are a series of questions that can guide health workers in carrying out an assessment:

- What ARVs and other medications are used.
- What are the specific ARV and medication-food interactions in the local context.
- What are the common side effects of these ARVs and medications. What known foods aggravate or alleviate the symptoms. What are the dietary responses.
- What medications, including modern and traditional, are taken for the treatment of opportunistic infections and the diseases common to the area. What are the drug-drug interactions. What are the drug-food interactions.
- What are the nutritional implications and the food recommendations to manage the side effects (e.g., nausea, loss of taste, changes in nutrient absorption). What is the effect of the medication on nutrient

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

absorption and metabolism.
 What suggestions for specialized diets will be difficult to implement because of food insecurity, food habits, or other reasons.
 How can these constraints be addressed.

What are the most effective communication channels to keep PLWHAs, caregivers, counselors, and program managers informed about ARVs and other medications and their implications for nutrition.

Other Issues to Consider

Limited Access to Sufficient Food for PLWHAs

Due to the scarcity of food in many resource limited settings, people with HIV/AIDS may be unable to follow recommendations to manage the effects of food-medication interactions. Health workers should involve PLWHAs in identifying feasible options for the nutritional management of food and drug interactions, which may also contribute to maintaining drug adherence by generating ownership and interest in the continuation of the treatment.

Food insecurity is aggravated by the economic consequences of HIV/AIDS, such as loss of earnings of a sick household member, depletion of assets and savings in order to pay for healthcare, or reduced availability of household labor to produce food. Program implementers should work with communities to identify ways for food insecure PLWHAs to access the sufficient quantity and quality of food needed. For more information, please refer to Chapter 6.

Stigma and Discrimination Faced by PLWHAs

The stigma directed at PLWHAs can cause anxiety and depression in affected individuals, which may cause a reduction in appetite and food intake. Stigma can also create additional obstacles and challenges for HIV-infected people trying to follow recommended feeding practices. Involving HIV-positive people in the program design and implementation has been shown to reduce stigma and engage communities.

ditional Therapies

42

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

NUTRITIONAL ISSUES ASSOCIATED WITH MODERN AND TRADITIONAL THERAPIES CHAPTER 3.

Selected References

- Abbott Laboratories. My Medication Schedule. Abbot Park, Illinois: Ab bott Laboratories, 2002.
- Bartlett, J., J. Gallant. Medical Management of HIV 2004. Baltimore, MD: Johns Hopkins University Press, 2004.
- Bijlsma, M. Living Positively: A Nutrition Guide for People with HIV/AIDS. 2nd ed. Mutare City, Zimbabwe: Mutare City Health Department, 1997.
- Bonnard, P. HIV/AIDS Mitigation: Using What We Already Know (Technical Note 5). Washington, D.C.: Food and Nutrition Technical Assistance Project (FANTA), Academy for Educational Development (AED), 2002.
- Castleman, T., E. Seumo-Fosso, and B. Cogill. Food and Nutrition Implications of Antiretroviral Therapy in Resource Limited Settings (Technical Note 7). 2nd ed. Washington. D.C.:
- National Institutes of Health (NIH). Structured intermittent therapy may prove feasible, garlic can impede HIV medication. AIDS Read 12 (2002): 60.
- Nerad, J., M. Romeyn, E. Silverman, J. Allen-Reid, D. Dietrich, J. Merchant, V.A. Pelletier, D. Tinnerello, and M. Fenton. General nutrition management in patients infected with human immunodeficiency virus. Clinical Infectious Disease 36, no. 2 (2003): S52-62.
- Pilot Procurement Quality and Sourcing Project. Access to HIV/AIDS Drugs and Diagnostics of Acceptable Quality. Geneva, Switzerland: World Health Organization (WHO), 2002.
- Pronsky, Z., S. Meyer, and C. Fields-Gardner. HIV Medications: Food Interactions. 2nd ed. Birchrun ville, PA: Food-Medications Interactions, 2001.
- United Nations Childrens Fund (UNICEF), Joint

Technical Assistance Project (FANTA), Academy for Educational Development (AED), 2004.

Fan, H., R.F. Conner, and L.P. Villarreal. *The Biology of AIDS. 4th ed. Sudbury, MA: Jones and Bartlett Publishers, 2000.*

Malawi National AIDS Control Programme. *Handbook of Herbal Remedies for Some AIDS-Related Illnesses. Lilongwe, Malawi: Malawi National AIDS Control Programme, 1996.*

Mondy, K., S. Lassa-Claxton, M. Hoffman, K. Yarasheski, W. Powderly, and P. Tebas. *Longitudinal Evolution of Bone Mineral Density (BMD) and Bone Markets in HIV-infected Individuals. St. Louis, MO: Divisions of Infectious Diseases, Endocrinology, and Bone and Mineral Metabolism, Department of Internal Medicine, Washington University School of Medicine, 2003.*

Moyle, G. The once-a-day era is upon us. *AIDS Read* 12 (2002): 56-58.

United Nations Programme on HIV/AIDS (UNAIDS), World Health Organization (WHO), and Mdecins Sans Frontieres (MSF). *Sources and Prices of Selected Drugs and Diagnostics for People Living with HIV/AIDS. Geneva, Switzerland: WHO, 2002.*

U.S. Food and Drug Administration. *Food and Drug Interactions. Washington, D.C.: National Consumers League, 1998.*

World Health Organization (WHO) and Joint United Nations Program on HIV/AIDS (UNAIDS). *Safe and effective use of antiretrovirals (Module 4). Guidance Modules on Antiretroviral Treatments. Geneva, Switzerland: WHO, 1998.*

World Health Organization (WHO). *New Data on the Prevention of Mother-to-Child Transmission of HIV and their Policy Implications: Conclusions and Recommendations. Report No. WHO/RHR/01.28. Geneva, Switzerland: WHO, 2001.*

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

World Health Organization (WHO). *Scaling up Antiretroviral Therapy in Resource-Limited Settings: Treatment Guidelines for a Public Health Approach (2003 Revision)*. Geneva, Switzerland: WHO, 2004.

Websites

Academy of Educational Development (AED)

www.aed.org

AIDSinfo

www.aidsinfo.nih.gov

AIDSMeds

www.aidsmeds.com

AIDS Nutrition Services Alliance (ANSA)

www.aidsnutrition.org

AIDS Read

www.medscape.com/viewpublication/93

American Council on Science and Health (ACSH)

www.acsh.org

American Dietetic Association

www.eatright.org

Food and Drug Administration (FDA)

www.fda.gov

Joint United Nations Program on HIV/AIDS (UNAIDS)

www.unaids.org

Journal of American Medical Association: HIV/AIDS Information Center

www.ama-assn.org

National Institutes of Health: Medline Plus Information System

www.nlm.nih.gov/medlineplus

World Health Organization (WHO): HIV/AIDS Program

www.who.int/hiv/en/

Food-Medications Interactions

www.foodmedinteractions.com

**Food and Nutrition Technical Assistance
Project (FANTA)**

www.fantaproject.org

**Immunodeficiency Clinic University Health
Network**

www.tthivclinic.com

John Hopkins University

www.hopkins-aids.edu

Nutritional Care and Support for Pregnant and Lactating Women and Adolescent Girls

4

CHAPTER

The purpose of this chapter is to provide nutritional care and support guidelines to help ensure adequate nutrition for pregnant and lactating women in the context of HIV/AIDS.

At the end of 2003, 58 percent of those living with HIV in Sub-Saharan Africa were women. Young women 15 to 24 years old are two-and-a-half times more likely to be infected than

nutritional requirements compared to their healthy HIV-negative counterparts due to a combination of the virus replication process and disease symptoms that limit dietary intake and reduce nutrient absorption. Medications used to treat HIV and associated infections can also create side effects that cause an individual to reduce food intake, while opportunistic infections associated with HIV contribute to

young men of the same age. HIV-infected pregnant and lactating women have increased

additional nutrient losses.

Nutritional Care and Support for Pregnant Women and Adolescents Regardless of HIV Status

Good nutrition is important for all pregnant women and contributes to maternal health and optimal birth outcomes. Inadequate food intake, poor dietary quality, and untreated infections before and during pregnancy increase the risk of maternal mortality and morbidity and are risk factors for negative birth outcomes such as infants with low birth weight (LBW) or intrauterine growth restriction (IUGR). Because the nutritional requirements of women are greater during pregnancy, they need to consume adequate quantities of nutritionally dense foods to meet their own nutritional requirements and the requirements of the growing fetus and prepare for lactation. This section presents a brief review of the nutritional requirements of all pregnant women in the context of HIV/

AIDS and provides dietary recommendations to ensure women's health and improve birth outcomes.

A healthy and normally active pregnant woman requires approximately 285 additional kcal each day. She also needs to eat increased amounts of protein and take a daily supplement containing 60 mg of iron and 400 mg of folate, according to national protocols. A diverse, micronutrient-rich diet should be consumed, including fortified foods if available. A daily multimicronutrient supplement containing up to 1 recommended dietary allowance (RDA) of all essential nutrients may be recommended when an adequate and balanced diet is not available. A pregnant woman should gain approximately 12.5 kg during the pregnancy.

2 Recommended Dietary

Allowance (RDA): The amounts of specific micronutrients needed to meet the nutrient requirements of approximately 98 percent of the healthy individuals in a specific age and gender group. RDAs guide individuals to achieve adequate nutrient intake aimed at decreasing the risk of chronic disease. They are based on estimating an average requirement plus an increase to account for the variation within a particular group.

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Ensuring Good Nutrition for all Pregnant Women and Adolescent Girls

Benefits for the mothers

Decreases the risk of complications during pregnancy and delivery;
Prevents or controls anemia in the mother; lowers the risk of mortality/morbidity during delivery and in the early postpartum period; and
Ensures energy storage for lactation.

Benefits for the infant

Prevents intrauterine growth restriction (IUGR), micronutrient deficiencies, and LBW and contributes to healthy growth and development.

Benefits for the household

Well-nourished, healthy mothers are more available for child care and contribute more fully to the functioning of the family; and
Improved work productivity is associated with improved nutritional status.

Benefits for the community and the nation

Increases productivity; and
Decreases maternal and infant morbidity and mortality.

Birth weight is one of the most important determinants of a child's survival and is highly

in kilograms by height squared in meters (kg/m^2). For example, a 48.4 kg woman with a

...)

status before and during pregnancy. A low pre-pregnancy weight and inadequate weight gain during pregnancy are the most significant risk factors for IUGR and/or LBW. Short stature is also a risk factor for delivery of an infant with IUGR and/or LBW. An average weight gain of 12.5 kg during pregnancy is a common international recommendation. According to the Institute of Medicine in 1990, women who begin their pregnancy with a body mass index (BMI) of less than 19.8 must increase their daily energy intake to gain more than 12.5 kg. To calculate the BMI, divide weight

by height of 20.14 (BMI=(48.4/(1.55*1.55))). If highly overweight (i.e., BMI is greater than 29 at the beginning of the pregnancy), the woman should not gain more than 7 kg. Table 4.1 provides recommended total weight gain during pregnancy and the recommended weekly weight gain during the second and third trimesters, depending on a woman's BMI at the beginning of the pregnancy. The minimum pregnancy weight gain recommended by for all women in developing countries is 6 kg (i.e., 1 kg per month during the second and third trimesters of pregnancy).

Table 4.1. Recommended Weight Gain during Pregnancy

<i>Pre-pregnancy category BMI</i>	<i>Recommended total gain (kg)</i>	<i>Recommended weekly weight gain, second and third trimesters</i>
BMI less than 19.8	12.5 to 18.0	slightly more than 0.5 kg
BMI 19.8 to 25.9	11.5 to 16.0	0.5 kg
BMI 26.0 to 29.0	7.0 to 11.5	0.3 kg
BMI more than 29.0	less than 7	0.3 kg

Source: Institute of Medicine (1990)



|

Energy Requirements. Healthy pregnant women need an extra 285 kcal per day if the pre-pregnancy activity level is maintained. The additional 285 kcal per day translates approximately into one additional serving of the staple food each day. The extra daily energy requirement is reduced to 200 kcal per day if the activity level is reduced.

Protein Requirements. A pregnant woman requires more protein for the development of fetal and maternal tissue, including the placenta, and an increased red blood cell mass. Non-pregnant women need 0.8 g protein/kg per day, while pregnant women require 1.1 g/kg per day, or approximately 71 g each day³.

In addition to the consumption of staple foods, pregnant women should eat foods that provide protein, such as pulses (e.g., chickpeas, lentils, cowpeas, beans), oil seeds (e.g., pumpkin, sunflower, melon), and foods of animal origin (e.g., meat, eggs, milk). Foods of animal origin provide protein, zinc, selenium, and iron that is more bio-available than the same nutrients derived from plant sources. Pregnant women need to eat a variety of foods

Micronutrient Requirements. Many micronutrient requirements increase with pregnancy. Pregnant women have higher iron requirements because of the mother's increased red blood cell mass and the iron needed by the developing fetus. They are therefore at higher risk of developing iron deficiency anemia than non-pregnant women. In order to meet both fetal and maternal iron requirements, an adequate dietary intake of iron plus supplementation with iron/folate is necessary for pregnant women.

Anemia and Iron. Anemia in pregnant women is associated with pre-term delivery, LBW, and increased perinatal mortality. The risk of maternal mortality is increased in pregnant women with decreasing hemoglobin levels. In resource limited settings, anemia affects half or more of all pregnant women. WHO recommends that pregnant women consume a supplement containing 60 mg of iron and 400 micrograms of folic acid on a daily basis for six months during pregnancy where the prevalence of anemia is less than 40 percent and for an additional three months postpartum where anemia prevalence is equal to or greater

³ The National Academies.

Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids. Washington D.C.: The National Academies, 2002.

to meet their macronutrient and micronutrient requirements. than 40 percent to prevent anemia.

Take an Integrated Approach to Anemia Prevention and Control Services for Pregnant Women

Provide iron or iron/folate supplements to pregnant women according to international or national protocols.

Promote animal sources of iron, iron-fortified foods, and enhanced bioavailability of iron in the diet.

Deliver malaria prevention and treatment services to pregnant women, especially in first and second pregnancies.

Provide helminth control once in the second trimester with hookworm prevalence 20 to 30 percent; repeat once in third trimester with prevalence greater than 50 percent in areas with endemic helminth infections:

- Albendazole 400 mg single dose;

- Mebendazole 500 mg single dose or 100 mg twice daily for three days;

- Levamisole 2.5 mg/kg single dose; best if dose repeated on next two consecutive days; and

- Praziquantel 10 mg/kg single dose, best if dose repeated on next two consecutive days.

Treat other infectious diseases.

Provide birth spacing information and access to modern family planning methods.

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Vitamin A. Pregnant women are particularly vulnerable to vitamin A deficiency, making them more susceptible to infection and, in one study in Nepal, increasing the risk of maternal death. In addition, low maternal stores of vitamin A compromise breastmilk quality and negatively affect the vitamin A stores of their infants. Improving vitamin A status may also contribute to a reduction of anemia. See Chapter 2 for more information.

Iodine. In areas where iodine deficiency is a problem, women are more likely to miscarry or give birth to stillborn children. Both the mental and physical growth and development of children may be impaired and children born to iodine deficient women may suffer irreversible mental retardation. Universal consumption of iodized salt by all household members should be encouraged.

Additional micro nutrients of particular importance to pregnant women are zinc, folate, calcium, and vitamin D. Eating a varied diet including locally available fruits and vegetables will help pregnant women meet their micronutrient requirements and add fiber

Tips for Pregnant Women Suffering from Frequent Nausea and Vomiting

- Eat small and frequent meals. Nausea is worse if nothing is in the stomach.
- Eat dry food such as dry bread, roasted or boiled groundnut, plantain, yam, potato, or any other available tuber before getting out of bed.
- Drink fluids between meals rather than with meals.
- Avoid drinking beverages containing alcohol and caffeine.
- Avoid lying down for at least twenty minutes after eating.
- Rest between meals.

missing from their diets and suggest healthful alternatives to the unusual substances being consumed to correct the deficiency.

to their diet. Micronutrient-fortified staple foods such as wheat also help to increase the dietary sources of micronutrients for women. Table 2.1. in Chapter 2 provides information on sources of selected micronutrients.

Pregnancy Discomforts

Pregnancy may be accompanied by changes in eating habits. Some pregnant women have cravings for or aversions to specific foods. Additionally, many women suffer from nausea, vomiting, and constipation at different points in pregnancy. Though normal, the body's reaction to pregnancy can be of special concern in HIV-infected women since the virus places an added stress on their bodies.

Cravings and Aversions. Craving and eating only specific foods and avoiding others because of the flavor, odor, or color may lead to nutrient deficiencies. Some pregnant women eat unusual items such as clay, chalk, and cola nut leaves that can be harmful for the mother and the infant. Health workers can help women identify nutrients that may be

Nausea. Some women suffer from nausea and vomiting during the first trimester of the pregnancy, which may lead to reduced food intake and limited gestational weight gain. Health workers can counsel women on how to manage nausea and vomiting during pregnancy so that they are able to maintain or increase food intake and meet their nutritional requirements.

Constipation. Constipation may result from a reduction in activity level, a change in eating habits or as a side effect of iron/folate supplements. Health workers should encourage women to drink plenty of fluids, eat a variety of locally available fruits and vegetables every day, and maintain physical activity as much as possible.

Special Considerations for Adolescent Pregnancy

A pregnancy during adolescence often increases the risk for malnutrition, complications during pregnancy and delivery, and poor birth outcomes, including death of the mother and child. This section will address nutritional considerations for pregnancy during adolescence.

The nutritional requirements of pregnant adolescent girls are greater than the requirements of pregnant adult women because an adolescent is usually still growing. Her daily intake must satisfy both the requirements of the developing girl and those of the developing fetus. Completion of linear growth may take up to seven years after menarche, and pelvic bone growth continues even after full height is achieved. This places pregnant adolescents at increased risk for prolonged and/or obstructed labor leading to increased maternal and

Pregnant adolescent girls are at a very high risk for mortality. For adolescent girls less than 18 years, the risk of dying in childbirth is 2 to 5 times greater than for women between the ages of 18 and 25.

infant mortality as well as the potential for crippling injuries such as vaginal fistulae. Adolescent mothers are also more likely to have LBW babies because of the competition for nutrients between mother and fetus, as well as poorer placental function. This perpetuates the intergenerational cycle of malnutrition. By addressing the special requirements of adolescents before they become pregnant as well as during pregnancy there is a potential opportunity to break the cycle.

This section presents nutritional care practices recommended for HIV-infected pregnant women and adolescent girls.

HIV-infected pregnant women may develop AIDS-related symptoms. The dietary management of these symptoms in pregnant women is similar to that of other adults and is described in Chapter 2.

HIV-infected pregnant women and adolescent girls, like other PLWHAs, have increased energy requirements due to infection with HIV. Attention to nutrition for HIV-infected pregnant women and adolescent girls is doubly important in order to maintain weight, prevent weight loss, and continue adequate weight gain during pregnancy. Improved nutritional status will help to maintain a strong immune system, decrease susceptibility to infections, and slow the progression to AIDS.

It is important that health workers are able to provide guidance to HIV-infected pregnant

women and adolescent girls on the range of locally available nutrient dense foods that they can eat to meet their daily increased energy and overall nutrient requirements. This means being familiar with the energy and micronutrient content of local foods. Health workers may need to work with agencies in the community to find ways to meet the nutritional requirements of HIV-affected women and their families to improve or maintain their health and nutritional status. Options include the direct provision of food rations, either on-site or take-home, distributed through maternal and child health programs, food-for-work and food-for-training programs. Income generation activities may be funded through limited cash resources from food-assistance programs to improve household food security and the means to acquire food.

Energy Requirements. Energy requirements of HIV-infected pregnant adolescents and adult women vary according to the stage of the disease.

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

4 By six weeks after delivery if a woman is not breastfeeding to avoid any risk of harm to a new fetus; by eight weeks after delivery if she is breastfeeding.

HIV-infected asymptomatic pregnant adolescents and adults (WHO stage 1) should increase energy intake over the level recommended for healthy non HIV-infected pregnant adolescents and adult women by an amount equaling 10 percent of the intake level recommended for non-pregnant adolescents or women of the same age and activity level plus the additional energy (i.e., approximately 285 kcal per day) needed to support pregnancy.

HIV-infected symptomatic pregnant adolescents and adults (WHO stage 2 and above) should increase energy intake over the level recommended for healthy non HIV-infected pregnant adolescents and adult women by an amount equaling 20 to 30 percent of the intake level recommended for non-pregnant adolescents or women of the same age and activity level plus the additional energy needed to support pregnancy.

The amount of increased energy is the same for HIV-infected persons taking ARVs. The level of additional energy intake for the HIV-infected pregnant woman depends on the presence and severity of symptoms.

Table 4.2 illustrates the changes in recommended energy intake of pregnant women based on the stage of the disease.

Protein Requirements. At this time, there is not enough evidence to suggest that HIV-infected pregnant women require more protein than

pregnant adolescents and adult women to consume varied diets to ensure that they meet the RDAs for micronutrients.

The results of vitamin A supplementation trials for HIV-infected women are mixed. The current WHO guidelines advise that vitamin A intake by HIV-infected pregnant and lactating women not exceed the existing RDAs. No additional vitamin A should be provided. In areas of endemic vitamin A deficiency, WHO continues to recommend administration of a single high dose (i.e., 200,000 IU) vitamin A supplement within the first six to eight weeks of delivery to the new mother. The iron/folate supplementation schedule also remains the same as for non-HIV-infected women, described in Section 4.1.

Although a varied, nutritionally adequate diet is the best source for micronutrients, there will be women for whom a multiple micronutrient supplement is recommended. Some studies have shown improvements from specific multivitamin and mineral supplements to HIV-infected women for a range of outcomes, including increased maternal weight gain during pregnancy, increased hemoglobin concentration, HIV progression to AIDS and improved CD4 cell counts. For children, improved birth weight, reduced postnatal transmission of HIV, and decreased mortality have been shown, particularly among nutritionally vulnerable women with advanced HIV disease. The optimal composition of multiple

HIV-infected pregnant woman. Meeting the level protein requirements of HIV-infected pregnant women will help prevent muscle wasting and support the additional protein demands of pregnancy including the growth of the placenta and increased red blood cell mass.

Micronutrient Requirements. Micronutrients play important roles in the healthy functioning of the immune system and therefore are particularly important for PLWHAs. At the same time, in populations with high AIDS prevalence, micronutrient deficiencies are often common. Current recommendations from the expert consultation to the World Health Organization advise HIV-infected

infected women has yet to be determined and is currently being studied.

ART and Other Medications

Some HIV-infected pregnant women may take ARV medications to prevent MTCT and reduce their viral loads. There are different types of ARV regimens that may be administered.

Single and medium course regimens over a period of three to six weeks are used to prevent MTCT, whereas long-course regimens are used to reduce the viral load in the mother and prevent MTCT.

Table 4.2. Estimated Changes in the Daily Energy Intake (kcal) of a 28 Year Old, Moderately Active HIV-infected Woman, According to the Stage in the Disease

<i>Stage in the disease</i>	<i>Average daily energy intake for moderately active* adult women (kcal)</i>	<i>Additional energy due to HIV** (kcal)</i>	<i>Additional daily energy required by the pregnancy (kcal)</i>	<i>Total (kcal)</i>
Asymptomatic	+ 2140	+ 214	+ 285	2639
Early symptomatic	+ 2140	+ 428	+ 285	2853
Symptomatic	+ 2140	+ 642	+ 285	3067

* Daily energy intake for a 28 year old moderately active woman Multiply Basal Metabolic Rate (BMR) by adjustment factor for the activity level = $1305 \times 1.64 = 2140$ kcal

** 10 percent daily energy intake increase during the asymptomatic phase = 10 percent (2140); 20 percent daily energy intake increase at the early symptomatic phase = 20 percent (2140); and 30 percent daily energy intake increase during the symptomatic phase = 30 percent (2140).

Single-course regimens such as nevirapine may have minimal food and drug interactions. Food and drug interactions may occur more often with medium- and long-course regimens and the side effects of these interactions can negatively impact the nutritional status of HIV-infected pregnant women. Appropriate dietary management can help to

thus affecting nutritional status and the efficacy of the medication or medications. For example, pregnant and/or HIV-infected women are more susceptible to the side effects of the TB drug, isoniazid. HIV-infected pregnant women who are also being treated for TB may be advised to take vitamin B6 (i.e., pyridoxine) supplements to

management can help to maintain food intake.

HIV-infected pregnant women may also take other medications in combination with ARVs to treat opportunistic infections. These medications may interact with food and the side effects may cause decreased food intake,

to neuropathies (e.g., numbness or burning in the feet). The recommended preventive dose is 10 mg B6/day; 100 mg B6/day is prescribed for treatment. Chapter 3 describes guidelines for the dietary management of other medication side effects and food interactions.

Additional Recommended Care Practices

Food Safety and Handling. Proper food handling and safety practices for HIV-infected pregnant women are the same for all PLWHAs and are described in Chapter 2. Remind HIV-infected women and adolescent girls that they are more susceptible to harmful bacteria and viruses in contaminated food and water as a result of their infection with HIV. Food poisoning can cause weight loss and further lower their resistance to future infections. Hygienic food handling should be accompanied by sanitary disposal of feces, good personal hygiene, including hand washing and covering of wounds, and the use of clean water for drinking and food preparation. Guidance on

Types of Regimens Used to Help Prevent MTCT of HIV

Nevirapine (NVP), single dose to the mother at the onset of labor and a single dose to the infant within 72 hours.

Zidovudine (AZT), starting at 36 weeks of the pregnancy and during labor.

For greater efficacy, new combinations include nevirapine+zidovudine, and nevirapine+zidovudine+lamivudine is also being introduced and used.

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

the length of boiling time for preparation of safe drinking/food preparation water varies from boiling water vigorously for a few seconds to 10 minutes.

Psychosocial Support. HIV-infected

pregnant women and adolescent girls need special care and attention. In addition to dealing with a life-threatening disease, they must also deal with the usual discomforts that accompany pregnancy. They may also have to confront discrimination and stigmatization by their family and community. Psychosocial support from caregivers and health workers is important. Mental health interventions may be needed to address depression. Program staff should work with communities to raise awareness about the need to support HIV-infected pregnant women to improve pregnancy outcomes and the survival of the mother.

Safer Sex Practices. Unprotected sex may expose HIV-infected pregnant adolescents and adult women to sexually transmitted diseases and/or re-exposure (i.e., surinfection) to HIV, resulting in an increased viral load. This, in turn, results in an increased risk of MTCT and can speed up the diseases progression to AIDS by further weakening the immune system. Unprotected sex can also expose women partners to infection. Health workers should advise HIV-infected mothers on safer sex practices, such as abstinence, involvement with one committed partner who has tested negative

analysis of women's health and nutrition and identify and address problems that affect their nutritional status, especially during pregnancy and lactation.

Food Insecurity in the Context of HIV/AIDS. In many resource limited settings that have been hit hard by the HIV/AIDS epidemic, access to sufficient food may be limited, especially for families affected directly by HIV/AIDS. Strengthen linkages and refer women to programs that provide nutritional care and support and support food security and coping strategies of HIV/AIDS-affected households and individuals.

Inequity in Intra-household Food Distribution. In many cultures, women frequently serve themselves last at meals. Husbands and male children are often the first to get food and mothers and girls eat what remains. For HIV-infected pregnant women and adolescent girls, problematic intra-household food distribution patterns may compound already existing inadequate nutritional intake due to increased energy needs of HIV infection and pregnancy.

Food Taboos. Pregnant women may observe culturally dictated dietary guidelines that prohibit certain foods. These food taboos may restrict nutrient dense foods, such as eggs or a specific type of meat. Avoiding such foods deprives pregnant women of an important source of protein and micronutrients and

Use condoms during every sexual contact.
 HIV
 and

Other Issues to Consider

remains
 faithful

The Low Social Status of Women. Poor

health and nutritional status of girls and women, especially in limited resource settings, may be due in part to gender inequality and the low status of women in certain societies. Women may need the approval of husbands or mothers-in-law to obtain nutrition and health services. Differential access to education and income generation opportunities for adolescent girls and women may be a barrier to their ability to improve dietary intake and/or treat and control infections. Community-level program staff should carry out a situation

culturally sensitive, programs should work
 contribute
 with communities to address taboos that may
 to deprive women of foods they need to ensure
 malnutrition.
 good nutritional status and birth outcomes.
 Although

Cultural Beliefs: Fear of Having a Big Baby. In some cultures, women restrict food intake during the final months of the pregnancy. This limits weight gain to reduce the size of the baby and, thus, decrease the risk of obstructed labor. In addition to LBW, inadequate diets can contribute to a weakened immune status of the mother with resulting increased risk of morbidity and possibly mortality of both mother and baby.

High Physical Activity Workloads. Women in resource limited settings routinely have heavy workloads that do not diminish with pregnancy. To compensate for the high amounts of energy expended on household and agricultural work, in addition to the energy used by the virus and by the growing baby, HIV-infected pregnant women must increase their energy intake. Alternatively, their workloads can be reduced and periods of rest can be added to reduce their energy expenditure. However, continued physical activity at usual/moderate levels remains important for HIV-infected women to preserve lean body mass.

The Perception of the Pregnancy. Pregnancy may be viewed in some settings as a condition that does not require special attention. The need for increased energy intake and/or decreased energy expenditure may go unrecognized, as could the need for improved dietary quality or the importance of accessing antenatal care

services. Raising the awareness of household and community members about the nutritional requirements of pregnancy and lactation and the importance of health care during these periods may help women gain access to the food and health/nutrition services that they need to remain healthy and improve birth outcomes.

Stigma and Discrimination. Family members or other community members may stigmatize HIV-infected pregnant women and adolescent girls. Stigmatization may result in neglect by or estrangement from the family, which can cause the health of these women to decline rapidly. Communities and family members may be particularly intolerant of pregnancy or HIV in adolescent girls leading to the need for programs to target HIV-infected pregnant adolescents for specialized services that may include supplementary food.

Nutritional Care and Support for Lactating Women and Adolescents whose HIV Status is Unknown or who are HIV-negative

Energy Requirements. Lactating women need extra energy to support the production of breastmilk. The extra energy required for lactating women is about 500 kcal per day for the first six months, assuming that their nutritional requirements were met during pregnancy. This translates approximately into eating an extra meal each day. A woman who has been able to consume the recommended quantities of energy and nutrients during pregnancy will have stored adequate amounts of fat, which is used for lactation. The same recommendation, an extra 500 kcal per day, applies to the second six months of breastfeeding when children have begun to consume complementary foods in addition to breastmilk.

If energy requirements were not met during pregnancy, which is often the case with women who were undernourished prior to pregnancy, a lactating woman may need up to an additional 700 kcal per day to produce the necessary quantity of milk without affecting her own nutritional status. The energy requirements

for lactating adolescent girls are greater than for adult women of the same size and activity level because of their continuing growth.

Protein Requirements. Protein requirements are the same for lactation and pregnancy: approximately 71 g per day or 1.1 g/kg of maternal weight per day, according to the U.S. National Academies of Science in 2002.

Micronutrient Requirements. Micronutrient requirements are also increased during lactation because of the transfer of micronutrients to breastmilk. Lactating women should eat a variety of fruits and vegetables, and foods from animal origin daily to meet their micronutrient requirements.

In areas of endemic vitamin A deficiency, lactating women should be provided with a high dose vitamin A supplement within the first eight weeks postpartum to increase the vitamin A content of their breastmilk. Current WHO recommendations are to provide 200,000 IU vitamin A in a single dose.⁵ The safe infertile

⁵ In 2002, the International Vitamin A Consultative Group (IVACG) recommended an increased dosage for postpartum vitamin A supplementation: 400,000 IU as two doses of 200,000 IU at least one day apart and/or 10,000 IU daily or 25,000 weekly as soon after delivery as possible and not more than six weeks later and/or during the first six months after delivery. WHO has not yet adopted these recommendations.



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

period for breastfeeding mothers to receive a high-dose vitamin A supplement is within eight weeks of delivery; within six weeks of delivery for non-breastfeeding women.

Although the recommended intake of most micronutrients is increased over the intakes for pregnancy to cover the additional amounts secreted in breastmilk, iron is needed in lower amounts except for women who have lost large amounts of blood during delivery. However, in areas of high anemia prevalence (i.e., equal to or greater than 40 percent), it is recommended that women continue to take

supplements containing 60 mg of iron and 400 micrograms of folate for an additional three months post partum.

The micronutrient deficiencies of greatest concern for quality of breastmilk include: vitamin A, thiamin, riboflavin, vitamins B6 and B12, iodine, and selenium. Low maternal intakes of these micronutrients reduce the level in breastmilk and adversely affect the infant. Of lower priority are vitamin D, folic acid, calcium, iron, copper, and zinc. Maternal intakes and stores of these nutrients have little effect on human milk concentrations.

Nutritional Care and Support for HIV-infected Lactating Women and Adolescents

Like all adults living with HIV/AIDS, HIV-infected lactating women and adolescents have additional energy requirements. They also need special care to prevent food and water contamination, and proper dietary management to alleviate the side effects of medications and address negative effects of food and medication interactions, in order to maintain good nutritional status and prevent weight loss and wasting.

Energy Requirements. The energy requirements of HIV-infected lactating mothers vary according to the stage of the disease.

HIV-infected asymptomatic (WHO stage 1) lactating adolescents and adults should

The necessary energy intake increase is the same whether or not the HIV-infected person takes ARVs. The level of additional energy intake for the HIV-infected pregnant woman depends on the presence and severity of symptoms.

Table 4.3. shows the amounts of energy needed, depending on the stage of HIV/AIDS.

Protein Requirements. HIV-infected lactating women and adolescents need the same level of daily protein intake as healthy HIV-negative lactating women, which is estimated to be 1.1 g/kg body weight per day or approximately 71 g of protein per day, according to the U.S. National Academies of Science in 2002.

increase energy intake over the level

recommended for healthy non-HIV-infected lactating adolescents and adult women by an amount equaling 10 percent of the intake level recommended for non-lactating adolescents or women of the same age and activity level plus the additional 500 kcal to support lactation.

HIV-infected symptomatic (WHO stage 2 and above) lactating adolescents and adults should increase energy intake over the level

recommended for healthy non HIV-infected lactating adolescents and adult women by an amount equaling 20 to 30 percent of the intake level recommended for non-lactating adolescents or women of the same age and activity level plus the additional 500 kcal to support lactation.

Micronutrient Requirements. HIV-infected lactating women and adolescents need the same amounts of micronutrients as healthy HIV-negative lactating women. See Section 4.2. HIV-infected lactating women should be encouraged to eat a variety of foods, including animal products, fruits, and vegetables, to help ensure adequate micronutrient intake.

Table 4.3. Recommended Energy Intake of 28 Year Old HIV-infected Moderately Active Lactating Women, According to the Stage in the Disease

Stage in the disease	Average daily energy intake (kcal)*	Additional energy due to HIV** (kcal)	Additional energy for Lactation (kcal)	Total (kcal)
Asymptomatic	+ 2140	+ 214	+ 500	= 2854
Early symptomatic	+ 2140	+ 428	+ 500	= 3068
Mid symptomatic	+ 2140	+ 642	+ 500	= 3282

* Daily energy intake for a 28-year-old moderately active woman: multiply Basal Metabolic Rate (BMR) by adjustment factor for the activity level = $1305 \times 1.64 = 2140$ kcal

** 10 percent daily energy intake increase during the asymptomatic phase = 10 percent (2140)
 20 percent daily energy intake increase at the early symptomatic phase = 20 percent (2140)
 30 percent daily energy intake increase in the mid symptomatic phase = 30 percent (2140)

Additional Recommended Care Practices

Breast Health Management. Cracked

nipples, mastitis, and breast abscesses increase the risk of HIV transmission through breastmilk. Health workers should demonstrate proper latching-on techniques to prevent the development of cracked

Building the capacity of health workers and promoters to provide nutrition counseling to pregnant and/or lactating adolescent girls and women;
 Promoting good nutrition for girls and adolescents for better pregnancy outcomes;
 Promoting better collaboration between modern

development of cracked nipples to prevent and manage other types of breast problems such as mastitis.

Safer Infant Feeding Practices. Refer to Chapter 5, Nutritional Care Recommendations for Infants and Children.

Other Issues to Consider

Integration of components addressing the nutritional requirements of HIV-infected pregnant and lactating women can strengthen the effectiveness of maternal and child health programs operating in areas with high prevalence of HIV.

Programs aimed at improving maternal nutrition in the context of HIV may consider including the following components:

Advocacy, community mobilization, and male involvement to improve the health and nutrition of adolescent girls and women;

modern health providers and traditional birth attendants, traditional practitioners, and grandmothers;

Formative research and behavior change communication for improving the nutrition of adolescent girls and women;

Improving food access, including food distribution to food insecure households with HIV-infected pregnant or lactating women on ART;

Promoting home gardening and income generating activities to improve food access; and

Designing and implementing water and sanitation interventions.

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Selected References

- Anderson, J.R. HIV and reproduction. In *A Guide to the Clinical Care of Women with HIV*, edited by J.R. Anderson. Washington, D.C.: U.S. Department of Health and Human Services, Health Resources and Services Administration, HIV/AIDS Bureau, 2002.
- Baker J., L. Martin, and E. Piwoz. Time to Act: *Womens Nutrition and its Consequences for Child Survival and Reproductive Health in Africa*. Washington, D.C.: Support and Analysis for Research in Africa Project (SARA), Academy for Educational Development (AED), 1996.
- Bonnard, P. HIV/AIDS Mitigation: Using *What We Already Know* (Technical Note 5). Washington, D.C.: Food and Nutrition Technical Assistance Project (FANTA), Academy for Educational Development (AED), 2002.
- Castleman, T., E. Seumo-Fosso, and B. Cogill. Food and Nutrition Implications of *An tirectroviral Therapy in Resource Limited Settings* (Technical Note 7). 2nd ed. Washington, D.C.: Food and Nutrition Technical Assistance Project (FANTA), Academy for Educational Development (AED), 2004.
- Christian P., K.P. West, Jr., S.K. Khatri, et al. Vitamin A and beta carotene supplementation ...
- Federal Emergency Management Agency (FEMA). Locating Safe Drinking Water. As viewed August 2004 at <http://www.fema.gov/rrr/waterf.shtm>.
- Food and Agriculture Organization of the United Nations (FAO) and Centers for Disease Control and Prevention (CDC). *Food Composition Table for Use in Africa*. Rome, Italy: FAO, 1968.
- Winkvist, A., K.M. Rasmussen, and J.P. Habicht. A new definition of maternal depletion syndrome. American Journal of Public Health 82 (1992): 691-694.
- Food and Agriculture Organization of the United Nations (FAO). *Living Well with HIV/AIDS*. Rome, Italy: FAO, 2002.
- Futterman, D. Adolescents. In *A Guide to the Clinical Care of Women with HIV*, edited by J.R. Anderson. Washington, D.C.: U.S. Department of Health and Human Services, Health Resources and Services Administration, HIV/AIDS Bureau, 2002.
- Healy, T., S. Cte, J.F. Helliwell, and S. Held. *The Well Being of the Nations: The Role of Human and Social Capital*. Paris, France: Organization for Economic Cooperation and Development, 2001.

reduces
 feeding Nepali women. Journal of Nutrition
 130 (2000): 2675-2682.

Dreyfuss, M.L., R.J. Stoltzfus, J.B. Shresta,
 and S. Ghoshal. Hookworms, malaria, and vitamin
 A deficiency contribute to anemia and iron
 deficiency among pregnant women in the
 plains of Nepal. Journal of Nutrition 130, no.
 10 (2000): 2527-2536.

Dreyfuss, M.L., and W.W. Fawzie.
 Micronutrients and vertical transmission
 of HIV-1. American Journal of Clinical
 Nutrition 75 (2002): 959-970.

Horizons
 Programs and Care into Maternal and Child
 Nutrition Program
*From Care Settings: Lessons Learned from
 Horizons Studies. Nairobi, Kenya: Horizons
 Programs, 2002.*

Institute of Medicine of the National Academies
 (IOM). Nutrition during Pregnancy: Report
*of the Committee on Nutritional Status during
 Pregnancy and Lactation. Washington, D.C.:*
 National Academy Press, 1990.

Joint United Nations Program on HIV/AIDS
 (UNAIDS) Global Coalition on Women and
 AIDS. HIV prevention and protection efforts
 are failing women and girls. Press release: 2
 February 2004.

NUTRITIONAL CARE AND SUPPORT FOR PREGNANT AND LACTATING WOMEN AND ADOLESCENT GIRLS CHAPTER 4
home.cd3wd.ar.ch.de.en.es.fr.id.it.ph.po.ru.sw

Joint United Nations Program on HIV/AIDS (UNAIDS) and World Health Organization (WHO). AIDS Epidemic Update: December 2002. Geneva, Switzerland: WHO, 2002.

Kumwenda, N., G. Paolo, et al. Antenatal vitamin A supplementation increases birth weight and decreases anemia among infants born to human immunodeficiency virus-infected women in Malawi. *Clinical Infectious Diseases* 35 (2002): 618-624.

Latham, M. Human Nutrition in the Developing World (*Food and Nutrition Series* No. 29). Rome, Italy: Food and Agriculture Organization of the United Nations (FAO), 1997.

LINKAGES Project. Infant Feeding Options in the Context of HIV. Washington, D.C.: LINKAGES Project, Academy for Educational Development (AED), 2004.

LINKAGES Project. Recommended Feeding and Dietary Practices to Improve Infant and Maternal Nutrition. Washington, D.C.: LINKAGES Project, Academy for Educational

Rush, D. Nutrition and maternal mortality in the developing world. *American Journal of Clinical Nutrition* 72 (1): 212S-240S.

Ross, J., and E.L. Thomas. Iron Deficiency, Anemia and Maternal Mortality (Working Notes Series No. 3). Washington, D.C.: Academy for Educational Development (AED), 1996.

Stoltzfus, R.J. and M.L. Dreyfuss. Guidelines for the Use of Iron Supplements to Prevent and Treat Iron Deficiency Anemia. Washington, D.C.: International Nutritional Anemia Consultative Group (INACG), 1998.

Stoltzfus, R.J. Iron Deficiency: Global Prevalence and Consequences. *Food and Nutrition Bulletin* 24, no. 4 Supplement (2003).

UNAIDS Global Coalition on Women and AIDS. HIV Prevention and Protection Efforts are Failing Women and Girls. Press release: 2 February 2004.

United Nations Children's Fund (UNICEF)

Development (AED), 1999.

March of Dimes. Nutrition Today Matters Tomorrow: A Report from the March of Dimes Task Force on Nutrition and Optional Human Development. Washington D.C.: March of Dimes, 2002.

Nimmagada, A., W.A. O'Brien, and M.B. Goetz. The significance of vitamin A and carotenoid status in persons infected by the human immunodeficiency virus. Clinical Infectious Diseases 26 (1998): 711-718.

Pan American Health Organization (PAHO): Food and Nutrition Program & Special Program for Vaccines and Immunization. *Providing Vitamin A Supplements through Immunization and Other Health Contacts for Children 6-59 Months and Mothers up to Six Weeks Postpartum: A Guide for Health Workers, 2nd ed.* Washington, D.C.: PAHO, 2001.

and World Health Organization (WHO) Joint Committee on Health Policy (JCHP). *Strategic Approach to Operationalizing Selected End-Decade Goals: Reduction of Iron Deficiency Anemia (JCHP 30/95/4.5)*. Geneva, Switzerland: UNICEF, WHO Joint Committee on Health Policy, 1995.

West, K.P., J. Katz, S.K. Khattry, et al. Double blind, cluster randomized trial of low dose supplementation with vitamin A or beta carotene on mortality related to pregnancy in Nepal. British Medical Journal 318 (1999): 570-575.

Win kvist, A., K.M. Rasmussen, and J.P. Habicht. A New Definition of Maternal Depletion Syndrome. American Journal of Public Health 82 (1992): 691-694.

World Health Organization (WHO). *Energy and Protein Requirements, Report of Joint FAO/WHO/UNU Expert Consultation* (Technical Report Series 724). Geneva, Switzerland: WHO, 1985.

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

World Health Organization (WHO). *The Prevalence of Anemia in Women. 2nd ed.* Geneva, Switzerland: WHO, 1992.

World Health Organization (WHO). Maternal anthropometry and pregnancy outcomes: A WHO collaborative study. In Bulletin of the World Health Organization, Supplement to Volume 73. Geneva, Switzerland: WHO, 1995.

World Health Organization (WHO). *Nutrient requirements for people living with HIV/AIDS: Report of a technical consultation 13-15 May 2003. Geneva, Switzerland: WHO, 2003.*

World Health Organization Regional Office for South East Asia (WHO/SEARO). *Adolescence: The critical phase.* Geneva, Switzerland: World Health Organization Regional Office for South East Asia, 1997. As viewed August 2004 at <http://w3.whosea.org/adolescence/>.

Websites

Academy of Educational Development (AED)

www.aed.org

Food and Nutrition Technical Assistance Project (FANTA)

www.fantaproject.org

Food and Agriculture Organization of the United Nations (FAO): HIV/AIDS and Food Security

www.fao.org/hivaids/

Institute of Medicine of the National Academies (IOM)

www.iom.edu

Joint United Nations Program on HIV/AIDS (UNAIDS)

www.unaids.org

LINKAGES Project

www.linkagesproject.org

March of Dimes

www.modimes.org

Organization for Economic Cooperation

and
~~Development~~

**Pan American Health Organization
(PAHO)**

www.paho.org

**Support and Analysis for Research in Africa
Project (SARA)**

<http://sara.aed.org>

**United Nations Childrens Fund (UNICEF):
HIV/AIDS Program**

www.unicef.org/aids/index.html

United Nations University (UNU)

www.unu.edu

**U.S. Department of Health and Human
Services, Health Resources and Services
Administration, HIV/AIDS Bureau**

<http://hab.hrsa.gov>

**World Health Organization
(WHO): HIV/AIDS Program**

www.who.int/hiv/en/

Nutritional Care Recommendations for Infants and Children

5.

CHAPTER

This chapter provides guidance on feeding for infants and young children in the context of HIV/AIDS to ensure their optimal growth and development, boost immune system functioning, and reduce transmission of HIV. The recent LINKAGES/AED publication, *Infant Feeding Options in the Context of HIV*, published in 2004, and the most recent WHO

WHO, the United Nations Children's Fund (UNICEF) and other United Nations agencies currently recommend that HIV-positive *mothers avoid breastfeeding if replacement feeding from birth is acceptable, feasible, affordable, sustainable, and safe (AFASS). If these conditions are not met, then it is recommended that HIV-positive mothers*

guidelines, HIV and Infant Feeding: A Guide for Health Care Managers and Supervisors, published in 2003 are the primary sources for the recommendations. The chapter addresses nutritional care for:

- 1.1. Infants and young children of HIV-negative women or women whose status is unknown;
- 1.2. Infants and young children of HIV-positive women; and
- 1.3. Young children with HIV disease.

Breastmilk is widely recognized as the best source of nutrition for infants, and exclusive breastfeeding is recommended for the first six months of an infants life. In addition to essential nutrients, breastmilk contains antibodies and enzymes that protect against infections and strengthens the infants immune system. However, HIV may also be transmitted to an infant during breastfeeding. On average, approximately one out of seven infants born to an HIV-infected mother will become infected through breastfeeding up to 24 months.

practice exclusive of life. If circumstances change and the criteria can be met, shortening the period of exclusive breastfeeding and transitioning as quickly as possible to another breastmilk option or replacement feeding will reduce the risk of exposure to HIV.

The caregivers choice of feeding method: HIV-positive mothers should be made aware of the risks and benefits of different infant feeding options, including the risk of transmission of HIV through breastfeeding. Mothers who can provide replacement feeding that is acceptable, feasible, affordable, sustainable, and safe are advised to do so. When these criteria cannot be met through family or community resources, particularly in resource-limited settings, women are advised to exclusively breastfeed.

Position of the American Dietetic Association and Dietitians of Canada: Nutrition intervention in the care of persons with human immunodeficiency virus infection. *Journal of the American Dietetic Association* 104 (2004): 1145-1441.

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

AFASS: Acceptable, Feasible, Affordable, Sustainable, and Safe

These terms should be adapted in the light of local conditions and formative research. The following may serve as a starting point:

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, or she will be able to cope with pressure from family and friends to breastfeed, and she can deal with possible stigma attached to being seen with replacement food.*

Feasible: *The mother or family has adequate time, knowledge, skills, and other resources to prepare the replacement food and feed the infant up to 12 times in 24 hours. According to this concept, the mother can understand and follow the instructions for preparing infant formula and, with support from the family, can prepare enough replacement feeds correctly every day and at night, despite disruptions to preparation of family food or other work.*

Affordable: *The mother and family, with community or health-system support if necessary, can pay the cost of purchasing/producing, preparing, and using replacement feeding, including all ingredients, fuel, clean water, soap, and equipment, without compromising the health and nutrition of the family. This concept also includes access to medical care if necessary for diarrhea and the cost of such care.*

Sustainable: *Availability of a continuous and uninterrupted supply and a 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 formula will ever be unavailable or inaccessible, and another person is available to feed the child in the mothers absence and can prepare and give replacement foods.*

Safe: *Replacement foods are correctly and hygienically prepared and stored and fed in nutritionally adequate quantities, with clean hands, and using clean utensils, preferably by cup. This concept means that the mother or caregiver:*

Has access to a reliable supply of safe water (e.g., from a piped or protected-well source);

Prepares replacement feeds that are nutritionally sound and free of pathogens;

Is able to wash hands and utensils thoroughly with soap and regularly boil the utensils

to
Can store water for preparing each of the baby's feeds; and
Can store unprepared feeds in clean, covered containers and protect them from rodents, insects, and other animals.

Source: WHO, What are the Options. Using formative research to adapt global recommendations on HIV and infant feeding to the local context, 2004.

When to Counsel on Infant Feeding Options

After an HIV-positive test, but prior to delivery, to assist the mother to select the best option for her infant

Within 10 days of delivery to assess the ability of the mother to successfully implement her infant feeding choice

At routine postpartum visits, well-child checks, and sick-child service delivery points

When mothers plan to change her current feeding practice

Source: WHO, HIV and Infant Feeding: A guide for healthcare managers and supervisors, 2003.

Nutritional Care Recommendations for Infants and Children Born to HIV-negative Women or Women whose Status is Unknown

For All Children

Ensure that the infant has received all vaccinations by one year of age, according to national protocols.

If the prevalence of anemia in children six to 24 months in the community is less than 40 percent, give 2 mg iron/kg body weight +50 g folic acid each day from six through 11 months of age. If anemia prevalence is equal to or higher than 40 percent, give 2 mg iron/kg body weight +50 g folic acid daily from six through 23 months of age.

In vitamin A-deficiency risk areas, encourage the intake of vitamin A-rich foods. Supplement children, including HIV-infected children, according to the chart on the following page.

Encourage the intake of iron- and vitamin C-rich foods.

During diarrhea, continue breastfeeding and give children extra fluids and oral

Mother should offer the second breast after the child releases the first breast.

Breastfeed exclusively for the first six months with no other liquids or solid foods introduced.

Participate in monthly growth monitoring and promotion sessions to check on adequacy of the infants weight gain/growth.

Breastfeed more frequently during and after the illness to ensure catch-up growth.

Practice safer sex to avoid sexually transmitted infections, including HIV.

Infants Six through Eight Months Born to HIV-negative Women or Women whose Status is Unknown

According to the recent Pan-American Health Organization (PAHO)/WHO Guiding Principles for Complementary Feeding of the Breastfed Child, published in 2003, when an

rehydration salts
(ORS) in boiled water.

Seek appropriate healthcare for fever, diarrhea, chronic cough, malaria, hookworm, and other parasitic infections.

**Infants from Birth through Five Months
Born to HIV-negative Women or
Women whose Status is Unknown**

Exclusive breastfeeding, with its nutritional, health, and psychosocial benefits for the child, is recommended for the first six months of life. Infants should be breastfed exclusively up to the age of six months. Listed below are some suggestions for the mother to successfully practice exclusive breastfeeding:

Initiate skin contact immediately and breastfeed within one hour after birth.

Establish good breastfeeding positioning and attachment.

Breastfeed frequently (i.e., eight to 12 or more times daily) and on demand during the day and night.

Infant reaches six months, breastmilk alone is generally not enough to provide all the energy, protein, and micronutrients to meet a growing child's nutritional needs. At six months of age, children should begin to receive increasing amounts of semi-solid and solid complementary foods in addition to frequent breastfeeding.

Guiding Principles for Complementary Feeding of the Breastfed Child recommend that mothers and caregivers:

Continue to breastfeed on demand while introducing complementary foods at six months;

Practice responsive feeding by feeding younger infants directly and encouraging them to feed themselves as they grow; feed slowly and encourage but do not force eating; experiment with different textures and tastes; talk to children and make eye contact to encourage learning; minimize distractions;

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Practice good hygiene and safe food handling/preparation (e.g., washing caregivers and childrens hands, store foods safely and serve prepared food immediately, use clean utensils for preparation and feeding, avoid use of bottles);

Use of complementary foods should increase over time to provide an additional 200 kcal per day. Complementary food can be mixtures of cereals or starches, fruits, vegetables, and a protein source such as beans, groundnut paste, eggs, or meat, when possible;

Feed complementary foods two to three times per day, plus one or two snacks as desired;

Feed mashed and semi-solid foods such as porridge enriched with energy-dense and protein-rich foods such as groundnut paste, cooked egg, or ground meat;

Introduce foods that children can eat by themselves at eight months, such as pieces of mango, paw paw, and banana;

Meat, fish, poultry, or eggs should be eaten daily or as often as possible. Vegetarian diets must be supplemented with fortified

Infants Nine through 11 Months Born to HIV-negative Women or Women whose Status is Unknown

Follow the guidance for six through eight month old infants with increased amounts of complementary foods and greater frequency of meals.

Provide an additional 300 kcal per day from complementary foods.

Feed solid foods three to four times daily with one to two snacks offered as desired.

Continue to encourage increasing independence in self-feeding.

Children 12 through 23 Months Born to HIV-negative Women or Women whose Status is Unknown

Continue to follow the guidance for younger infants with increased amounts of complementary foods. By 12 months, most children can independently consume the same foods as the family unless they are highly

products or nutrient supplements. Feed vitamin A-rich foods daily. Limit juice intake and avoid drinks such as tea, coffee, and sugary drinks such as soda; and

During illness, breastfeed more frequently and encourage the sick child to eat soft, varied, appetizing, favorite foods. After the illness, offer food more often and encourage the child to eat more in order to promote catch up growth.

Depending on availability of services, encourage mothers to participate in monthly growth monitoring and promotion sessions to check on the adequacy of the infants weight gain and growth for the first two years.

spicy.

Provide an additional 550 kcal daily from complementary foods.

Feed three to four times per day from a separate plate, plus one to two snacks as desired.

Avoid family foods that might pose a choking risk.

Children 24 Months through Five Years Born to HIV-negative Women or Women whose Status is Unknown

Feed a variety of fruits, vegetables, legumes, animal products, and fortified foods.

Feed a variety of foods at least five to six times per day (i.e., three meals plus snacks such as mangos, bananas, bread with nut spread, chappatti).

After illness, feed more frequently to ensure catch-up growth.



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

NUTRITIONAL CARE RECOMMENDATIONS FOR INFANTS AND CHILDREN CHAPTER 5.

WHO (2003) Schedule of Vitamin A supplementation

<i>Time</i>	<i>Infant</i>
Six to 12 months	100,000 IU every four to six months
>12 to 59 months	200,000 IU every six months

Note: IVACG added a recommendation for infants in 2002: 150,000 IU as three doses of 50,000 IU with at least a one month interval between doses for infants at birth through five months; the single dose of 100,000 IU should begin at six months, not nine. However, WHO has not yet endorsed IVACGs recommendations.

Nutritional Care Recommendations for Infants and Children of HIV-positive Women

5. Nutritional Care Recommendations

As noted above, for infants of HIV-positive mothers, WHO (2003) advises that:

When replacement feeding is acceptable, feasible, affordable, sustainable and safe, avoidance of all breastfeeding by HIV-positive mothers is recommended. Otherwise, exclusive breastfeeding is recommended during the first months of life. To minimize HIV transmission risk, breastfeeding should be discontinued as soon as feasible, taking into account local conditions, the individual woman's situation and the issues of replacement feeding including infections other than HIV and malnutrition.

When HIV-positive mothers choose not to breastfeed from birth or stop breastfeeding later, they should be provided with specific guidance for at least the first two years of the child's life to ensure adequate replacement feeding.

**WHO Recommendations Result
in the Need for the Following
Actions:**

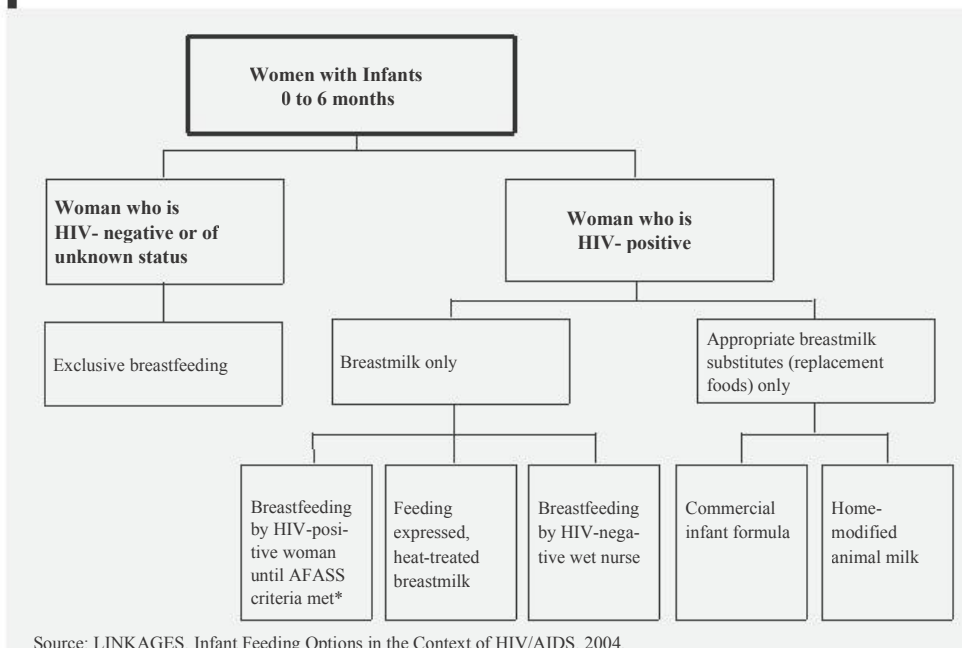
- Provide HIV-positive mothers with information on different infant feeding options to enable them to make an informed choice for their infants.
- Inform HIV-positive mothers of the advantages and the risks associated with the infant feeding option they have chosen.
- Provide HIV-positive mothers with the support required to implement their choice.
- Where possible, involve the mothers partner or other members of the family in the counseling and decision-making process.

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Figure 5.1. Infant Feeding Options during the First Six Months



**Infants at Birth through Five Months
Born to HIV-positive Women: Exclusive
Breastfeeding Followed by Replacement
Feeding**

If the mother decides to breastfeed, she should:

Breastfeed exclusively for not longer than six months and prevent and manage breast problems and sores in the infants mouth to prevent HIV transmission from mother to child during breastfeeding; and

Transition to replacement feeding when it is AFASS. This means feeding infants who are not receiving breastmilk with a nutritious diet that meets their nutrient requirements until they are old enough to consume a diet of family foods. From birth to six months, replacement feeding is a suitable breastmilk substitute. After

six months, this means giving a breastmilk substitute plus appropriate complementary foods to support optimal growth and development.

Exclusive breastfeeding practices for children of HIV-positive mothers are the same as for children born to HIV-negative mothers or mothers of unknown HIV status. Infants are fed only breastmilk for up to six months. No other foods, teas, water, juices, milks, or infant formula should be given to the infant.

Keeping Breasts Healthy. Mastitis, nipple lesions, and breast abscesses may increase the risk of HIV transmission through breast milk. Health workers should counsel HIV-positive mothers on how to prevent, manage, and seek treatment for breast problems to reduce the risk of HIV transmission to the infant.

Prevention and Treatment of Sores in the Infants Mouth. Sores in an infants mouth

may increase the risk of HIV transmission from breastmilk. Health workers should show HIV-positive lactating mothers how to check for sores and, if found, advise them to promptly seek medical care. Where possible, refer mothers to a breastfeeding counselor or a breastfeeding support group.

Challenges Posed by Exclusive Breastfeeding in the Context of HIV. Programs must address

several challenges to ensure the successful implementation of exclusive breastfeeding by HIV-positive mothers of infants less than six months of age. These challenges include the cultural practice of early mixed feeding, lack of breastfeeding support for mothers, the common perception that malnourished mothers do not have sufficient milk to breastfeed exclusively, and limited access to food for the lactating mothers.

Compliance with Exclusive Breastfeeding.

Exclusive breastfeeding for six months is rarely practiced even when programs actively promote and support it. In the context of HIV,

within an hour. The mother or caregiver feeds the heat-treated breastmilk to the infant with a cup in order to avoid the risk of contamination from bottles. This method of feeding infants of HIV-infected mothers requires resources for heating and storing the milk, time to prepare the feeds, and a supportive environment to successfully feed children in this manner.

Breastfeeding by an HIV-negative Wet Nurse. This infant feeding option requires

that the mother and family of the child consider wet nursing only if the wet nurse is offered HIV testing and counseling, takes the test voluntarily, and is found to be HIV-negative. She must then practice optimal exclusive breastfeeding and safer sex practices to ensure that she is not infected with HIV while breastfeeding the infant. She will need to be available to feed the infant frequently and on demand throughout the day and night and she must receive services to prevent and treat any problems such as cracked or bleeding nipples, mastitis, or abscesses that may occur.

the practice of mixed feeding may increase the risk of HIV transmission. The exact mechanisms fostering this increased risk are not known but several have been suggested: the gut may become inflamed as a reaction to new food allergens, or germs from the food and water may damage the gut, increasing susceptibility to infection by HIV carried in breastmilk. Exclusive breastfeeding helps to maintain a healthy gut epithelium that acts as a protective barrier against infectious agents. Through awareness-raising activities, counseling, and community mobilization, programs need to create a supportive environment in which mothers can successfully practice exclusive breastfeeding.

Feeding Expressed, Heat-treated Breastmilk.

An alternative to exclusive breastfeeding is collecting expressed breastmilk and heat-treating it. This is accomplished by bringing it to a boil and cooling the milk immediately by standing the clean container in cold water. Untreated expressed breastmilk may be stored for up to eight hours at room temperature in a cool place and 72 hours in a refrigerator. Once the milk is heat treated, it must be used

Factors that Increase Risk of MTCT of HIV

- Mixed feeding in the first 6 months (i.e., combining breastfeeding with breastmilk substitutes)
- Breastfeeding duration (i.e., long term breastfeeding increases the risk of HIV transmission)
- Improper latching and positioning during breastfeeding
- Breast conditions (i.e., fissured and bloody nipples, mastitis, and breast abscess)
- Sores in infants mouth
- High maternal viral load
- Maternal immune deficiency
- Maternal malnutrition
- New HIV infection

Adapted from World Health Organization (WHO). *HIV and Infant Feeding: A guide for healthcare managers and supervisors*, 2003.



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

**Infants at Birth through Five Months
Born to HIV-positive Women:
Replacement Feeding with Appropriate
Breastmilk Substitutes**

HIV-positive mothers who do not breastfeed are advised to exclusively feed their infants with appropriate breastmilk substitutes (i.e., replacement feeding). These can be either commercial infant formula, the most nutritionally complete substitute for breastmilk, or home-modified animal milk.

Early Cessation of Breastfeeding. The risk of HIV transmission during breastfeeding continues for as long as breastfeeding is practiced. Because this risk is cumulative, early breastfeeding cessation is recommended for HIV positive mothers. A transition from exclusive breastfeeding to exclusive replacement feeding will decrease the risk of HIV transmission.

The best time to stop exclusive breastfeeding varies from one situation to another and is dependent on such factors as the mother's health

Begin by expressing breastmilk to familiarize the baby with cup feeding by offering the expressed breastmilk by cup between regular breastfeeds;

When the infant has accepted cup feeding, eliminate one breastfeed at a time and replace with expressed breastmilk fed by cup;

Express and discard breastmilk if breasts become engorged during the transition process. Apply cold compresses to reduce swelling;

Once all feeds are accepted by cup, feed only breastmilk substitutes;

Health care workers can advise mothers on comforting infants with alternative methods to breastfeeding such as massaging, swaddling, carrying, rocking, singing, sleeping with, and talking to the baby; and

Counsel women on adequate protection against pregnancy in the absence of the contraceptive protection of breastfeeding.

When using breastmilk substitutes, mothers need to be assisted in the prevention of breast engorgement, plugged milk ducts, or mastitis

economic status, the economic status of the household, and risk factors for disease and death due to alternative feeding practices. Health workers and mothers should discuss and decide the most appropriate time for transition to replacement feeding based on case-specific circumstances. Health workers should then provide the necessary guidance to make the transition to exclusive replacement feeding as safe as possible.

Transitioning from Breastfeeding to Replacement Feeding. Mothers usually

transition gradually from exclusive breastfeeding to breastfeeding plus complementary foods after an infant is six months old. However, in cases where a mother is HIV-positive, it is recommended that the transition from breastfeeding to replacement feeding occur as quickly as possible. While some mixed feeding is usually necessary during the transition, it should be strictly avoided once the baby has switched to replacement feeding.

Healthcare workers can provide guidance and support to mothers when they have decided to make the transition to replacement feeding:

as lactation is suppressed in the early days following delivery. The infant should not be allowed to suckle; breasts should be well supported but not tightly bound, and mothers can express small amounts of breastmilk to relieve discomfort.

Commercial Infant Formula. Commercial infant formula is usually available as powder and needs to be reconstituted with clean water according to the instructions on the tin before being fed to the infant. Over-concentration can cause health problems such as diarrhea, and over-dilution can lead to malnutrition due to insufficient nutrient intake.

Safe feeding of commercial infant formula includes:

- Utensils for measuring/preparing the formula;
- Clean water to prepare the formula and clean all utensils;
- Fuel in adequate amounts to boil water for reconstituting the formula and cleaning utensils;



|

Resources for hand washing and food preparation hygiene;

Ability to read or follow directions for correct reconstitution of infant formula;

Caregiver time to prepare at least eight feedings per day if refrigeration is not available; and

Correct use of cup for feeding prepared infant formula.

Mothers need to have access to consistent and affordable supplies of commercial formula for at least six months. WHO estimates that 20 kg of commercial infant formula are required per infant during the first six months of life for replacement feeding. Programs should assess the types and costs of replacement feeding options that are available in the area as well as the reliability of supply. Many households in resource limited settings may not be able to afford replacement foods. In such cases, programs should work to identify mechanisms to help households access the required foods.

Both commercial and home-prepared formulas require time and knowledge to prepare safe replacement feeds, and equipment and fuel to clean utensils and the preparation environment.

Home-modified Animal Milks. When commercial infant formula is not readily available, too expensive, or otherwise not acceptable, home-prepared modified animal milk can be used as a replacement feeding option. Families need to have access to at least one half liter or the equivalent of animal milk or milk product per day. Home-modified animal milk is used exclusively, and the infant does not receive breastmilk.

Modified animal milks can be made from fresh animal milk, evaporated milk, dried full-cream milk powder, or ultra high-temperature (UHT) milk. All of these milks need to be modified to become suitable for the infant by diluting with water and adding sugar so

Table 5.1. Preparation Guide for Mother/Caregiver

Commercial

Home

Commercial formula	Modified breast milk
<p>Wash hands with soap and water.</p> <p>Clean all utensils, containers, and cups with soap and water.</p> <p>Read or have someone read instructions on the formula tin.</p> <p>Boil water vigorously for a few seconds and let it cool. Boil as much water as needed for the whole day and store in a clean covered container.</p> <p>Measure the amount of milk powder needed for one feed and mix it with the correct amount of boiled water.</p> <p>Prepare fresh commercial formula before each feed if refrigeration is not available.</p> <p>Feed the infant by cup about 150 ml of correctly prepared formula per kg per day, divided into six to eight feeds. The infant will have to learn to drink from a cup.</p>	<p>Wash hands with soap and water.</p> <p>Clean all utensils, containers, and cups with soap and water.</p> <p>Boil water vigorously for a few seconds and let it cool. Boil as much water as needed for the whole day and store in a clean, covered container.</p> <p>Measure the amount of water and milk needed see Table 5.2.</p> <p>Measure the exact amount of sugar and mix it with the liquid see Table 5.2.</p> <p>Prepare formula before each feed if refrigeration is not available.</p> <p>Feed the infant by cup the appropriate amount based on the infants weight. The infant will have to learn to drink from a cup.</p> <p>Give the infant multivitamins specially formulated for the non-breastfed child. The multivitamin can be in the form of liquid syrup (i.e., 5 ml per day) or powder. The multivitamin can be mixed with the formula or given separately.</p>

Source: LINKAGES, Infant Feeding Options in the Context of HIV/AIDS, 2004.

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Table 5.2. Recommended Amounts of Ingredients for Replacement Feeds, First Six Months

<i>Age (months)</i>	<i>Number of Feedings and Daily Milk Requirements</i>	<i>Cow (fresh or UHT), goat, or camel (per feeding)</i>	<i>Sheep and buffalo milk (per feeding)</i>	<i>Evaporated milk (per feeding)</i>	<i>Powdered full cream milk (per feeding)</i>	<i>Commercial formula (per month)</i>
0<1 8 feeds	day x 60 ml/ feed Total: 480 ml/day	40 ml milk +20 ml water + 4 grams (g) sugar (slightly less than 1 teaspoon)	30 ml milk +30 ml water + 3 g sugar (slightly less than 1/2 teaspoon)	16 ml milk + 44 ml water + 4 g (level teaspoon) sugar	5 g milk + 60 ml water + 4 g (level teaspoon) sugar	4 x 500-g tins
1<2 7 feeds	day x 90 ml/ feed Total: 630 ml/day	60 ml milk +30 ml water + 6 g sugar (11/4 teaspoons)	45 ml milk + 45 ml water + 5 g sugar (1 teaspoon)	24 ml milk +66 ml water +6 g (11/4 teaspoons) sugar	7.5 g milk + 90 ml water + 6 g (11/4 teaspoons) sugar	6 x 500-g tins
2<3 6 feeds	day x 120 ml/ feed Total: 720 ml/day	80 ml milk +40 ml water +8 g sugar (slightly more than 1 1/2 teaspoons)	60 ml milk + 60 ml water + 6 g (11/4 teaspoons)	32 ml milk +88 ml water + 8 g (2 level teaspoons)	10 g milk +120 ml water + 8 g (2 level teaspoons) sugar	7 x 500-g tins
3<4 6 feeds	day x 120 ml/ feed Total: 720ml/ day	80 ml milk +40 ml water + 8 g sugar (slightly more than 1 1/2 teaspoons)	60 ml milk + 60 ml water + 6 g (11/4 teaspoons)	32 ml milk +88 ml water +8 g (2 level teaspoons) sugar	10 g milk +120 ml water + 8 g (2 level teaspoons) sugar	7 x 500-g tins
4<5 6 feeds	day x 150 ml/ feed Total:	100 ml milk +50 ml water + 10 g sugar (2 full teaspoons)	75 ml milk + 75 ml water +8 g sugar (slightly	40 ml milk +110 ml water + 10	12.5 g milk +150 ml water + 10 g	8 x 500-g tins

	900ml/ day		(sugary milk) 1 1/2 teaspoons)	2 teaspoons) 2 sugar full	2 full teaspoons) sugar	
5<6 6 feeds	day x 150 ml/ feed Total: 900ml/ day	100 ml milk +50 ml water + 10 g sugar (2 full teaspoons)	75 ml milk +75 ml water + 8 g sugar (slightly more than 1 1/2 teaspoons)	40 ml milk +110 ml water + 10 g (2 full teaspoons) sugar	12.5 g milk +150 ml water + 10 g (2 full teaspoons) sugar	8 x 500-g tins

Source: LINKAGES, Infant Feeding Options in the Context of HIV/AIDS, 2004.

Micronutrients for Home-modified Animal Milk

The minerals and vitamins needed in a micronutrient supplement to fortify 100 kcal of home-modified animal milk (i.e., 100 mL of milk + 10 g sugar = 50 mL water) are listed below.

Minerals:

Manganese 7.5 g
Iron 1.5 mg
Copper 100 g
Zinc 205 g
Iodine 5.6 g

Vitamins:

Vitamin A 300 IU
Vitamin D 50 IU
Vitamin E 1 IU
Vitamin C 10 mg
Vitamin B1 50 g
Vitamin B2 80 g
Niacin 300 g
Vitamin B6 40 g
Folic acid 5 g
Pantothenic acid 400 g

energy and micronutrient content: sweetened condensed milk, skimmed milk, coffee creamers, soy milk, fruit juices, sugar water, or diluted porridges.

Infants and Young Children from Six through 23 Months Born to HIV-positive Mothers: Complementary and Replacement Feeding Foods

Appropriate complementary feeding for children of HIV-positive mothers ages six through 23 months consists of feeding breastmilk or breastmilk substitutes (e.g., milk, milk products) with complementary or additional semi-solid and solid food/liquids. All infants require foods in addition to milk by six months in order to meet their nutritional requirements for energy, protein, and micronutrients. By about six months of age, infants are able to digest undiluted animal milk as well as semi-solid foods, making replacement feeding less difficult and less expensive for mothers than during their child's first six months.

HIV

Vitamin B12 0.2 g

Vitamin K 5 g

Biotin 2 g

Source: WHO, HIV and Infant Feeding: *A guide for healthcare managers and supervisors, 2003.*

that they have protein, fat, and sugar content somewhat similar to breastmilk. The quantity of water and sugar varies from one type of milk to another. Modified animal milks do not provide enough micronutrients to meet the infant/child needs, therefore micronutrient supplementation is essential. Full cream dried milk powder and evaporated milk should be reconstituted using brand-specific instructions before being fed to the infant. See Table 5.2. on the following page for guidance on recommended amounts of ingredients for home-modified replacement feeds.

Unacceptable Options for Replacement Feeding. The following fluids are not acceptable options for use in replacement feeding of infants because of their inadequate

options for feeding their children from six months of age:

- Positive mothers have continued breastfeeding until transition to other options are safe and feasible (e.g., cessation of breastfeeding and transition to breastmilk substitutes), plus appropriate complementary foods;
- Expressing and heat-treating breastmilk plus appropriate complementary foods;
- Wet nursing by an HIV-negative woman plus appropriate complementary foods;
- Breastmilk substitutes (e.g., commercial infant formula, fresh animal milk, powdered full-cream or evaporated milk, UHT milk) plus appropriate semi-solid and solid foods; and
- Appropriate semi-solid and solid foods plus clean drinking water in circumstances where milk is not available.

As discussed earlier in this chapter, complementary foods include a variety of locally available foods and liquids that are fed on a daily basis to children from six months as a complement to breastmilk. Complementary

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

6 Adapted from the United Nations Agencies Guiding Principles for Feeding the Non-breastfed Child 6-24 Months of Age.

foods can be mixtures of a staple such as cereals (e.g., rice, wheat, maize, millet) or starch foods (e.g., plantain, banana, cassava, potato) with beans, groundnut paste, meat, chicken, fish, eggs, fats and oils, fruits, and vegetables.

Current draft guidance for the non-breastfed *child*,⁶ recommends that children should receive four to five meals of nutritious foods each day from six months of age, with additional nutrient-rich snacks one to two times a day as desired. Meals may be a combination of milk-only feeds, other foods, or a mix of milk and food. It is optimal to include milk in the diets of children through at least the first year of life.

Mother and Child Relationship.

Psychosocial stimulation through skin-to-skin contact may be lacking when a child is fed by replacement feeding. Programs and health workers should discuss with caregivers the importance of psychosocial contact and encourage them to hold, talk, and play with infants to help ensure adequate psychosocial stimulation. Health workers should also discuss with mothers how to avoid breast engorgement following the end of breastfeeding.

Stigma Associated with Replacement Feeding. In many communities, mothers who do not breastfeed or stop breastfeeding early

may be suspected of being HIV-positive and, subsequently, may be discriminated against because of the stigma often associated with HIV. Program managers should assess the socio-cultural acceptability of replacement feeding and work with the community and partners to support mothers who choose replacement feeding. Because of the stigma associated with replacement feeding, mothers who choose replacement feeding may feel compelled to breastfeed in public. This type of mixed feeding may increase the risk of HIV transmission or other infections to the child. Program managers and health workers should work with community support groups to raise awareness about the risks of mixed feeding. Health workers should also provide support and guidance to mothers on how to deal with situations where she may be asked why she stopped breastfeeding her infant.

Replacement Feeding and Child Spacing.

Women who do not breastfeed are at a higher risk of becoming pregnant. For an HIV-positive mother, an early pregnancy can put the new baby at risk of malnutrition and increase the energy and other nutrient requirements of the mother. Mothers who decide not to breastfeed should be provided with family planning services to ensure adequate child spacing and all women in the context of HIV need information and support to practice safer sex to avoid sexually transmitted infections including HIV.

Nutritional Care Recommendations for

Children with HIV

HIV infection is often difficult to diagnose in very young children. Infants born to HIV-infected mothers have HIV antibodies made by the mothers immune system that cross the placenta to the baby's bloodstream before birth and may persist for up to 18 months. Because these maternal antibodies reflect the mother's but not the infant's infection status, an HIV antibody test is not reliable for children under 15 to 18 months. More definitive tests can determine whether a younger infant is actually infected with HIV but these tests are still expensive and are not typically available in resource-limited settings.

Nutritional Needs for HIV-infected Children

Increased Energy Needs. HIV-infected children have greater energy needs compared to healthy non-HIV-infected children. HIV infection causes increased resting energy expenditure, may reduce food intake, and causes poor nutrient absorption, loss, and metabolic alterations that result in weight loss and wasting. The energy needs of HIV-infected children will vary according to the presence and severity of symptoms.

The energy requirements of HIV-infected children with no symptoms are increased by 10 percent. During the symptomatic phase without weight loss, energy requirements increase by 20 to 30 percent over the level of energy intake recommended for healthy non-HIV-infected children of the same age. When the child is both symptomatic and losing weight, energy requirements increase by 50 to 100 percent.

Protein and Micronutrient Needs. Protein and micronutrient requirements remain the same for children of the same age, sex, and physical activity, regardless of HIV status. However, if children have pre-existing micronutrient deficiencies or inadequate protein intake, these need to be addressed and may require micronutrient supplementation and/or increased protein intake.

Pre-existing Malnutrition. Many children in resource limited settings are already underweight and malnourished. Healthcare workers will need to help families correct underlying malnutrition as well as address the additional nutritional requirements caused by

Other Issues to Consider

The medications HIV-positive children take to treat opportunistic infections may produce side effects such as taste changes, loss of appetite, vomiting, nausea, and diarrhea, which can negatively affect food intake and nutrient absorption and metabolism. Therefore it is crucial to be aware of potential interactions and negative effects, and to manage such symptoms and side effects to minimize the negative impacts on the child's health and nutritional status.

Medications may also affect nutrient absorption, and food may affect medication efficacy. The dietary management of both medication side effects and food-drug interactions in HIV-positive children is similar to the methods used with adults and described in Chapter 3.

infection with HIV. It is especially difficult for children to consume 50 to 100 percent more energy when they are fighting opportunistic infections and experiencing weight loss. Help caregivers to encourage children to eat additional energy-dense, micronutrient-rich food when periods of illness subside. According to WHO in 2003 breastfed children who are found to be HIV-infected may benefit from continued breastfeeding as well as complementary feeding, according to the recommendations for the general population.

Management of AIDS-related Symptoms.

HIV-positive children often suffer from symptoms such as thrush, fever, nausea, or vomiting, which may affect food intake and nutritional status. The dietary management of HIV/AIDS-related symptoms in children is similar to that of adults and is described in Chapter 2.

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Selected References

- American Dietetic Association. Position of the American Dietetic Association and Dietitians of Canada: Nutrition intervention in the care of persons with human immunodeficiency virus infection. *Journal of the American Dietetic Association* 104 (2004): 1145-1441.
- BASICS Project, World Health Organization (WHO), and United Nations Children's Fund (UNICEF). Nutrition Essentials: A Guide for Health Managers. Geneva, Switzerland: WHO, 1999. Reprinted by the BASICS II Project, Washington, D.C.: Academy for Educational Development (AED), 2004.
- Castleman, T., E. Seumo-Fosso, and B. Cogill. Food and Nutrition Implications of Antiretroviral Therapy in Resource Limited Settings (Technical Note 7). 2nd ed. Washington, D.C.: Food and Nutrition Technical Assistance Project (FANTA), Academy for Educational Development (AED), 2004.
- Coutsoudis, A., K. Pillay, L. Kuhn, et al. Method of feeding and transmission of HIV-1 from mothers to children by 15 months of age: Prospective cohort study from Durban, South Africa. *AIDS* 15 (2001): 379-387.
- Food and Agriculture Organization of the United Nations (FAO) and Centers for Disease Control and Prevention (CDC). *Food Composition*
- LINKAGES Project. Breastfeeding and HIV/AIDS Frequently Asked Questions Sheet 1. 2nd ed. Washington, D.C.: LINKAGES Project, Academy for Educational Development (AED), 2004.
- LINKAGES Project. Facts for Feeding: *Guidelines for Appropriate Complementary Feeding of Breastfed Children 6-24 Months of Age*. 2nd ed. Washington, D.C.: LINKAGES and Support for Analysis and Research in Africa (SARA) Projects, Academy for Educational Development (AED), 2004.
- LINKAGES Project. Facts for Feeding: *Recommended Practices to Improve Infant Nutrition During the First Six Months*. 2nd ed. Washington, D.C.: LINKAGES and Support for Analysis and Research in Africa (SARA) Projects, Academy for Educational Development (AED), 2004.
- LINKAGES Project. *Infant Feeding Options in the Context of HIV*. Washington, D.C.: LINKAGES Project, Academy for Educational Development (AED), 2004.
- Macallan, D.C. Dietary intake and weight loss patterns in HIV infection. In Miller, T.L., and S.L. Gorbach (Editors), *Nutritional Aspects of HIV Infection*. New York, N.Y.: Oxford University Press, 1999.
- Macallan

Composition

Feeding for FAO, 1968.

Use

Humphrey, J., and P. Iliff. Is breast not best. *in* *Feeding babies born to HIV-positive mothers: Finding balance to a complex issue.* *Nutrition Reviews* 59, no. 4 (2001): 119-127.

King, F.S., and A. Burgess. *Nutrition for Developing Countries. 2nd ed. Oxford, UK:* Oxford University Press, 1993.

Latham, M.C., and E.A. Preble. Appropriate feeding methods for infants of HIV infected mothers in sub-Saharan Africa: Education and Debate. *British Medical Journal* 320 (2000): 1656-1660.

References

WHO. *Journal of Nutrition* 129, no. 1 (1999): 28-32.

in

in HIV. *in* *Medicine, C.A., and J.W. Glimour. Breastfeeding and viral transmissions: Risks, benefits and treatments. Journal of Tropical Pediatrics* 46, no. 5 (2000): 256-257.

Millard, A.V., and M.A. Graham. Abrupt weaning reconsidered: Evidence from central Mexico. *Journal of Tropical Pediatrics* 31, no. 4 (1985): 229-234.

Nevin-Folino, N. *Pediatric Manual of Clinical Dietetics. 2nd ed. Chicago, IL: American Dietetic Association, 2003.*

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

NUTRITIONAL CARE RECOMMENDATIONS FOR INFANTS AND CHILDREN CHAPTER 5.

Newell, M.L. Prevention of mother-to-child transmission of HIV: Challenges for the current decade. Bulletin of the World Health Organization 79, no. 12 (2001): 1138-1144.

Piwoz, E., S.L. Huffman, D. Lu sk, et al. Issues, Risks and Challenges of Early Breastfeeding Cessation to Reduce Postnatal Transmission of HIV in Africa. Washington, D.C.: SARA Project, Academy for Educational Development (AED), 2001.

Preble, E.A., and E.G. Piwoz. HIV and Infant Feeding: A Chronology of Research and Policy Advances and their Implications for Programs. Washington, D.C.: SARA Project, Academy for Educational Development (AED), 1998.

Scott, G.B. Supportive care for HIV-infected children and their families. In J. Beal, J.J. Orrick, and K. Simpson (Editors), *HIV/AIDS Primary Care Guide*. Gainesville, FL: University of Florida, Florida AIDS Education and Training Center, 2002.

Shevitz, A.H., and T.A. Knox. Nutrition in

World Health Organization (WHO). *Complementary Feeding: Family Foods for Breastfed Children*. Geneva, Switzerland: WHO, 2000.

World Health Organization (WHO). *Complementary Feeding: Report of the Global Consultation and Summary of Guiding Principles*. Geneva, Switzerland: WHO, 2002.

World Health Organization (WHO). *Effect of Breastfeeding on Mortality Among HIV-Infected Women*. Geneva, Switzerland: WHO, 2001.

World Health Organization (WHO). *Energy and Protein Requirements, Report of Joint FAO/WHO/UNU Expert Consultation* (Technical Report Series 724). Geneva, Switzerland: WHO, 1985.

World Health Organization (WHO). *Fact Sheet 5: Care of HIV Infected and Affected Children*. Geneva, Switzerland: WHO, 1998. As viewed August 2004 at http://www.who.int/health-services-delivery/hiv_aids/English/fact-

the era of highly active antiretroviral therapy. *Clinical Infectious Diseases* 32, no. 12 (2001): 1769-1775.

Stoltzfus, R.J., and M.L. Dreyfuss. *Guidelines for the Use of Iron Supplements to Prevent and Treat Iron Deficiency Anemia*. Washington, D.C.: International Nutritional Anemia Consultative Group (INACG), 1998.

U.S. Department of Health and Human Services, HIV/AIDS Bureau. *Health Care and HIV, Nutritional Guide for Providers and Clients*. 2nd ed. Washington, D.C.: U.S. Department of Health and Human Services, HIV/AIDS Bureau, 2002.

Vitamin A Global Initiative. *A Strategy for Acceleration of Progress in Combating Vitamin A Deficiency (Consensus of a n Informal Technical Consultation)*. New York, N.Y.: Vitamin A Global Initiative, 1997.

World Health Organization (WHO). *Breastfeeding and Replacement Feeding Practices in the Context of Mother-to-Child Transmission of HIV: An Assessment Tool for Research*. Geneva, Switzerland: WHO, 2001.

sheet-5/

World Health Organization (WHO). *New Data on the Prevention of Mother-to-child Transmission of HIV and Their Policy Recommendations: Conclusions and Recommendations*. Report No. WHO/RHR/01.28. Geneva, Switzerland: WHO, 2001.

World Health Organization (WHO) and the Micro nutrient Initiative. *Safe Vitamin A Dosage during Pregnancy and Lactation. Recommendations and Report of a Consultation*. Geneva, Switzerland: WHO, 1998.

World Health Organization (WHO) and the United Nations Children's Fund (UNICEF). *Complementary Feeding of Young Children in Developing Countries: A Review of Current Scientific Knowledge*. Davis, CA: University of California at Davis and WHO, 1998.

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

World Health Organization (WHO), United Nations Children's Fund (UNICEF), United Nations Population Fund (UNFPA), and the Joint United Nations Program on HIV/AIDS (UNAIDS). *HIV and Infant Feeding: A Guide for Health-care Managers and Supervisors*. 2nd ed. Geneva, Switzerland: WHO, 2003.

World Health Organization (WHO), United Nations Children's Fund (UNICEF), and International Vitamin A Consultative Group (IVACG). *Vitamin A Supplements: A Guide to Their Use in the Prevention of Vitamin A Deficiency and Xerophthalmia*. Geneva, Switzerland: WHO, 1997.

World Health Organization (WHO), United Nations Children's Fund (UNICEF), and Joint United Nations Program on HIV/AIDS (UNAIDS). *HIV and Infant Feeding and Counseling: A Training Course*. Geneva, Switzerland: WHO, 2000.

World Health Organization (WHO), United Nations Children's Fund (UNICEF), United Nations Population Fund (UNFPA), and Joint United Nations Program on HIV/AIDS (UNAIDS). *HIV and Infant Feeding: Guidelines for Decision-Makers*. 2nd ed. Geneva, Switzerland: WHO, 2003.

Woods, M.N. Dietary recommendations for the HIV/AIDS patient. In Miller, T.I., and S.L. Gorbach (Editors), *Nutritional Aspects of HIV Infection*. New York, N.Y.: Oxford University

Websites

Academy of Educational Development (AED)

www.aed.org

Basic Support for Institutionalizing Child Survival Project (BASICS)

www.basics.org

Bureau of Primary Health Care, U.S. Department of Health and Human Services

<http://bphe.hrsa.gov>

Food and Nutrition Technical Assistance Project (FANTA)

www.fantaproject.org

Food and Agriculture Organization of the United Nations (FAO): HIV/AIDS and Food Security

www.fao.org/hivaids/

Joint United Nations Program on HIV/AIDS (UNAIDS)

www.unaids.org

LINKAGES Project

www.linkagesproject.org

MOST Project

www.mostproject.org

Support and Analysis for Research in Africa Project (SARA)

<http://sara.aed.org>

Press,
1999.

<http://www.unicef.org>

**United Nations Childrens Fund
(UNICEF): HIV/AIDS Program**
www.unicef.org/aids/index.html

**World Health Organization (WHO): HIV/
AIDS Program**
www.who.int/hiv/en/

A Food-based Approach to Support HIV/AIDS- affected Households and Communities

6.

CHAPTER

Food insecure households frequently struggle to meet ordinary basic needs without the added stress of HIV. Shocks, such as drought, poor harvests and conflict, strain the ability of fragile households to function, and HIV/AIDS further reduces their capacity to cope with these traditional stresses. When PLWHAs are questioned about their priority

energy needs for household members that are HIV-infected. While the focus is on external food donations for short- and medium-term strategies, this approach is applicable to other community-based care and support.

This guide stresses the importance of consuming a varied diet of sufficient amount for a healthy

needs, food not drugs, health services, or other non-foods is often the predominant response. The call for food may reflect the physical lack of food in the household, but it often echoes a lack of means or income to acquire food, despite the availability of food in the community or markets. Food aid can play an important role in bridging short-term food gaps, protecting the income and livelihood capacity of households affected by HIV/AIDS and, consequently, supporting both short- and long-term food security.

This chapter provides guidance to program managers on the use of food and donated food to address HIV/AIDS-affected communities. It explains the steps for doing a community needs assessment. The result of the needs assessment will help define the objectives and specific actions that will determine the type of food ration, the size of the food ration, and who is eligible to receive it. The chapter includes questions to consider when designing a program to address malnutrition and household food insecurity. Suggestions for determining a ration for a household are provided with special attention to the increased

and people face substantial challenges to acquiring and consuming a good diet. These challenges may be due to livelihoods threatened by environmental, social, cultural, and economic factors that affect the production, purchase, and storage of food. An analysis of food insecurity in a household and community will highlight the barriers and constraints for a varied and quality diet. In many parts of the world, food insecurity translates into challenges for families to meet even their basic needs. HIV/AIDS worsens this already precarious situation.

The HIV/AIDS epidemic accelerates the decline towards food insecurity and destitution in a number of ways. The resilience of families to various shocks is undermined. Money once used to purchase food may be diverted to buy medicines for an ill family member. As the family member's illness worsens, his or her ability to work diminishes. This can lead to reduced income and food production. Children who lose family members to AIDS may drop out of school due to a lack of money for school fees. The HIV/AIDS epidemic increased

1



home.cd3wddvd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

vulnerability and presents not only short-term impacts through reduced food production and consumption, but also longer-term impacts, as future generations are less likely to develop skills, leading to lost opportunities for income.

The impact of HIV/AIDS on food security in resource limited settings requires short-, medium-, and long-term strategies to help households and communities deal with the epidemic and maintain their nutritional status and health.

Food can be obtained from external donations or locally. While it is recognized that external food aid is not a sustainable resource, the intent is to make the best use of food to ensure that no harm is done and, eventually, communities will be able to respond to food security shocks. In the long term, sustainable strategies should include local ownership, skills development, infrastructure development, income-generating activities, and sustainable agricultural and natural resource development particularly focused on locally available resources and foods.

analysis should include documentation of all major factors that are contributing to food insecurity, including drought and climatic factors, economic factors, conflict and displacement, and acute or chronic disease, including HIV/AIDS. Livelihood and coping mechanisms and local capacities should also be assessed. Such analyses should be done for programs distributing a general ration, as well as for those targeting PLWHAs and affected individuals, households, and communities. It is important to focus on what communities can do to address the food insecurity impacts of HIV/AIDS and other care issues.

The goals and objectives of nutrition and food interventions for PLWHAs vary according to the disease stage of the individual, and whether or not they are receiving ART and other treatments for secondary infections. Goals and objectives will also vary according to the group being targeted for interventions.

Interventions for which an adequate evidence base currently exists and that should be immediately included in program are listed below. Other interventions, including food

In designing programs using food aid, it is important to do a thorough analysis of vulnerability to food insecurity in the specific communities affected by HIV/AIDS. An

aid and food security programs, are likely to be effective in certain situations and may be supported on a pilot basis while further evidence is gathered.

Community-based Care and Support

To use food effectively as a means of providing care and support to HIV-affected households and mitigate the impact of HIV/AIDS, program managers should pursue a four-step process:

1. Facilitate a community-led assessment of local food sources and care practices to determine effective uses of all food;
2. Work with the community stakeholders to design and implement a food strategy based on decisions about the purpose of the food, how food will be delivered and stored, and who is eligible to participate, including an exit or transition strategy phasing down the reliance on food aid;
3. Decide and calculate ration composition and size and frequency of schedule for distribution; and

4. Link communities to other services, including health, hygiene, water, sanitation, growth promotion, and other food security interventions.

Facilitating a Community-led Situation Assessment

In designing a program to address a particular dimension of food insecurity, especially the additional burden of HIV/AIDS, it is necessary to work backwards from the immediate manifestations of food insecurity to the root causes of the problem. Understanding the causes of food insecurity requires a significant amount of information gathering. Normally, quantitative information will be available to begin this analysis from data collected routinely



by the host government agriculture, health, or planning ministries, national survey data sets such as those developed under the USAID-sponsored Demographic and Health Surveys (DHS), and information in existing studies and reports. In addition, it is also typically necessary to conduct field studies using a combination of qualitative and quantitative methods to ensure an understanding of local conditions in the intended program area.

It is advisable to work with the community to ensure that the community conducts its own assessment of the situation and then devises an appropriate action plan based on the findings. In most cases, a series of simple and related questions can provide a very general structure to guide the information-gathering process. While the questions themselves are simple, obtaining their answers may be quite complex, requiring expertise from a variety of relevant technical disciplines. The questions to begin the information gathering process include:

Where do households get their food.
 What factors limit the ability of
 households to obtain food from each of

- What traditional feeding and care practices exist for special needs groups such as PLWHAs, pregnant and lactating women, and orphans and vulnerable children.
- What locally available foods are used for household consumption or sold or traded, and what is their availability throughout the seasons. This should include all items consumed by the family, including insects, herbs, fruits, vegetables, legumes, nuts, and other plant and animal products that are purchased, bartered, grown, or gathered by households.
- What food preparation and storage techniques are commonly used.
- What are the market services, including where people buy food and medicines, micronutrients, or herbal supplements for promoting good health, including traditional medicines.
- What are the links to health services and other government and nongovernmental assistance.
- What are the available sources and types of food aid provided in safety net and other programs.

these sources.
How do households obtain their cash income, and what factors limit the ability of households to obtain income from each of these sources.

What factors limit how well households use their food to meet the dietary needs of the individuals within them.

Who are the most food insecure or vulnerable population groups.

Involving community leaders, health workers, educators, household members and PLWHAS in both the gathering and analysis of the information is useful for obtaining accurate information and designing an intervention that will be beneficial to all members of the community. Issues that may need to be included are:

What traditional community feeding and care practices promote good health and nutrition for adults and adolescents and which practices promote appropriate breastfeeding and complementary feeding practices for infants and young children.

Program managers may be able to obtain existing information from governmental and nongovernmental reports, household surveys, and food consumption surveys. Rapid food security assessments and qualitative data-using techniques such as key informant interviews, focus group discussions, and observational studies are some of the methods that can be used to gather and complement this information. This phase is also important for identifying the beneficial and harmful practices that support or undermine good health; knowing these is useful for designing programs and developing messages for good nutrition. The reference section at the end of this chapter contains a list of publications that are useful to program managers to work with communities in assessing the food situation and feeding practices at the household level.

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Designing and Implementing a Food Program

The initial assessment should provide an understanding of food security conditions and constraints in a given area. Program managers should continue to work with the community to develop a set of program goals and objectives where the probability of a successful intervention is highest while addressing constraints. A clear and measurable set of goals and objectives is the first step towards developing performance indicators and establishing an effective monitoring and evaluation system.

Once the goals and objectives have been established, it is necessary to agree on how the objectives will be met, including developing a strategy for delivering food and other services. In many instances, it is preferable to work with existing organizations and committees in a community rather than creating entirely new structures. Experience has shown that mobilizing groups for the sole purpose of receiving and distributing external aid often results in weak short-lived structures that are

- Prevent malnutrition and mortality among the general population due to deteriorating food security where HIV is one of a number of critical determinants of vulnerability through provision of a general food ration integrated with complementary inputs;
- Prevent nutritional deterioration among *individual PLWHAs* by providing general food rations and specialized foods with specific nutrient profiles and acceptability to improve treatment adherence by helping patients manage gastrointestinal side effects of ARVs;
- Provide incentives as a form of income-in-kind to increase participation in the prevention of mother-to-child transmission (pMTCT), pMTCT+, and other prevention, treatment, or palliative care programs, as well as partial payment for care and increasing enrollment in schools for orphans and vulnerable children; and
- Protect livelihoods through supporting safety net programs, asset protection and food-for-work or training programs such as skill enhancement targeting *communities and households affected by*

less
 available resources in the long term.

and
 willing
 Three basic questions should be considered
 to, when using food as an input for a program:
 mobilize
 their

What is the Purpose of Introducing a Food Program to the Community. Food aid can

have multiple uses and USAID encourages partners to integrate food-based programs with HIV/AIDS activities where appropriate and that the objectives of food-based programs must be clearly stated. Food aid resources are used to meet the following broad program objectives in both development and relief settings to assist food insecure populations affected by HIV/AIDS:

Nutritional care and support;
 Incentive for participation in HIV/AIDS-related activities; and
 Income transfers to people infected with or affected by HIV/AIDS.

The broad objectives of food aid programming in the context of HIV/AIDS include:

HIV/AIDS.

In some programs, food serves multiple purposes. For example, in maternal and child health programs, food plays a preventative nutritional role and is an incentive for mothers to participate in key health services such as immunization and counseling. The use of the food will determine its type and quantity, who is eligible, and the likely result. It is important to understand and agree on the use of the food. The use can change over time and in response to a community emergency such as a flood or drought.

In programs to assist HIV-affected households, food is sometimes focused on helping household members maintain their nutritional status. Although this guide provides information on nutritional issues related to HIV/AIDS, the food rations described below are based on the nutritional needs of all household members. This is because most households seriously affected by HIV/AIDS experience chronic food shortages that affect all members. There are examples of specialized foods being promoted to be used by PLWHAs. The

number of specialized foods is growing with claims about their nutritional benefits needing careful review. This guide focuses only on the use of specific food aid commodities to meet nutritional needs; discussions of food choices as an income transfer or incentive can be obtained from other resources listed at the end of this chapter.

The following box describes some potential use of food aid in support of the 2003 U.S. Presidential Emergency Plan for AIDS Relief (PEPFAR) with examples for prevention, treatment, and care and support activities:

Examples of the Uses of Food Aid to Support HIV/AIDS-affected Populations

<i>Target Group</i>	<i>Uses of Food</i>
Treatment	
PLWHAs, including children	Food to improve adherence to ART Food to improve treatment efficacy Food to help manage drug side effects
Prevention	
PLWHAs and household members	Food as an income transfer and asset protection Food to prevent or reduce high-risk behaviors or reliance on negative coping strategies Food as an incentive for voluntary testing and counseling Food as an incentive for participation in pMTCT and pMTCT+
Communities in high prevalence or high risk areas	Food as incentive to participate in HIV/AIDS awareness and behavior change programs Food as an incentive for voluntary testing and counseling Food as an income transfer and asset protection and to prevent or reduce high-risk behaviors or reliance on negative coping strategies
Care and Support	

PLWHAs Food to	<p>supplement daily nutritional requirements and special dietary needs, such as increased energy requirements</p> <p>Food to support nutritional management of symptoms of opportunistic infections (e.g., anorexia, diarrhea, nausea)</p> <p>Food for use in hospitals and hospices as a part of palliative care</p> <p>Food to provide safety net and income transfer</p> <p>Food as an income transfer and asset protection</p> <p>Food for training in life skills, life planning, alternative livelihood strategies</p>
Affected households and OVCs	<p>Food to supplement daily nutritional requirements of OVCs and other affected household members</p> <p>Food to provide safety net and income transfer for affected households and guardians</p> <p>Food for education as a nutritional supplement, income transfer and guardianship incentive</p> <p>Food as an income transfer and asset protection</p> <p>Food as an income transfer to encourage school attendance</p> <p>Food for training in life skills, life planning, alternative livelihood strategies</p> <p>Food as a bridge for adopting new technologies and practices or establishing new livelihood strategies</p>
OVCs in institutions	<p>Food to supplement daily nutritional requirements</p> <p>Food as an income transfer to assist with costs of care , free up cash resources for provision of other critical services, and facilitate school and training program attendance</p>
Street children Food to	<p>supplement daily nutritional requirements</p> <p>Food to encourage attendance at skills training or counseling sessions</p>
Communities in high prevalence or high risk areas	<p>Food as an income transfer or to cover opportunity costs to voluntary care providers</p> <p>Food for training voluntary care providers</p> <p>Food as a bridge for establishing community-based social safety nets (e.g., food banks) and care and support services</p> <p>Food as an income transfer and asset protection and to prevent or reduce high risk behaviors or reliance on negative coping strategies</p>

HIV/AIDS-affected Households and Communities



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

What is the Appropriate Way to Deliver Food Aid in a Community. A program manager should work with the community to determine the most effective and efficient means of distributing the food based on the human, financial, and other resources the community can provide. If food is available, two approaches to distribute food are take-home rations and on-site feeding. The decision is between a more flexible and administratively simpler take-home option and the more controlled on-site feeding option. Other approaches, including cash transfers and food stamp programs, are not discussed here.

Take-home Rations. This is the most common method of food distribution, in which food rations are provided to households to be taken home for storage, preparation, and consumption. Take-home rations are targeted to households with the greatest need or provided generally to a community, as in the case of emergencies or natural disasters.

On-site Feeding. Food is prepared at a center, and participants consume the meal or snack, such as biscuits, on site. Snacks provided at

distances to obtain food every day. However, in cases where only certain groups are targeted for food distribution and the program seeks to prevent dilution to other family members, on-site feeding may be more advantageous. It may also be more effective where firewood and cooking utensils are in short supply and households are unable to prepare meals or where the security situation is poor and beneficiaries are at risk when carrying food home.

It is recommended that in each community, an existing group be identified to help manage the food program. This group should already be actively engaged in assisting vulnerable persons in the community, preferably drawing mostly or entirely on locally available resources. If no such group exists, a committee can be organized by the external agency or a partner. If a program wants to provide take-home rations to households with PLWHAs or orphans, a team should be employed to be responsible for the logistics. This includes advance planning and ordering of food, receiving and storing the food from the donor, delivering food to the recipient households,

schools can help increase school attendance as well as address childrens nutritional needs. Providing a meal to all studentsnot just to orphanscan forestall the stigma and resentment that can arise in community-based feeding programs.

Communities affected by HIV/AIDS have created a variety of institutions to care for and provide services to affected children. Some examples include community schools established especially for OVCs, community day care centers that free caretakers for other tasks and also provide a meal and activities for the children, and orphanages or other residential facilities for children. Food aid has been used to help support such self-help efforts, but programs should be monitored carefully to ensure that they do not undermine community integration or development.

Each method has advantages and disadvantages. Take-home rations generally require fewer resources to manage and take less time to establish a distribution system. In addition, this approach is less time-consuming for recipients, who do not have to travel long

and establishing a simple monitoring system to keep track of the food provided to each household.

In an on-site feeding program, the committee selects community members to be responsible for preparing and serving the meals. An exit strategy that defines more sustainable food interventions should be developed, since food donations will not continue indefinitely. As part of the exit strategy, the committee should also define criteria for deciding when a household should stop receiving donated foods and become involved in other interventions that promote livelihood security.

Who are the Beneficiaries and What are their Energy Needs. Once the approach for food distribution is decided, it is important to determine who the beneficiaries will be and the appropriate eligibility criteria. A program working with community leaders may want to review whether it will be providing food for all households in a community or targeting specific groups such as households with PLWHAs or orphans or, more specifically, orphans under the age of five. These decisions

Examples of Linking Title II Resources with HIV/AIDS-affected Households

Malawi:

Catholic Relief Services (CRS) implements a Title II Development Assistance Program (DAP) from 2000 to 2005 in Malawi with the aim to improve the food security of households affected by HIV/AIDS. Guardians or families caring for AIDS OVCs receive food rations in order to decrease the financial burden of care, promote retention of OVCs in their own communities, and improve the nutritional status of at-risk children. These households participate in complementary livelihood training programs, which include improved soil fertility, crop diversification, and improved seed. In 2003, 95 percent of direct food distribution beneficiaries also participated in activities aimed at improving productive assets, such as building fish ponds.

CRS established 43 community-based child centers (CBCC) as a way of enhancing child care practices and providing guardians with the opportunity to participate in general development activities. The CBCCs are staffed by community volunteers and provide OVCs with food donated by the communities. Growth monitoring is also conducted at the CBCC to ensure that children who are growth faltering are identified for interventions and, if necessary, referral to a health facility. Title II food commodities are used to encourage OVC school attendance. The DAP also supports community artisan apprenticeship programs to support skills development.

Kenya:

CRS, the Archdiocese of Mombassa, and Pathfinder International distribute monthly rations of Title II CSB and vegetable oil to more than 4,500 households with OVCs. The purpose of the food ration is to meet the short-term food needs of households

impacted by HIV and AIDS. Combined with food distribution, providing information on HIV and AIDS and the role of nutrition, guidelines on palliative care for PLWHAs, and safe food storage and use. Households reported decreased incidence of childhood illnesses, increased school attendance and improved school performance, and increased spending on items such as fuel and school supplies.

While progress has been made, there are continuing program challenges, including the high number of households requiring support, the severe food insecurity of many households leading to dependence on the ration as their only source of food, and the need for therapeutic in addition to supplementary feeding rations for cases of severe malnutrition in the program target communities.

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

7 The planning figure for food aid programs of 2,100 kcal per day or 8,778 kilojoules per day is used by agencies such as the WFP. The Institute of Medicine in 1995 and WHO in 2000 recommended 2,100 kcal per day for a typical developing country population, but the amount should be adjusted for moderate to heavy physical activity of around 100 to 400 kcal per day and for changes in age and sex structure.

will depend on the prevalence of HIV in the community, awareness about the disease, and whether families or individuals will be stigmatized if they participate in a program.

The first step in determining potential beneficiaries and their energy and protein requirements is to examine the composition of the household and estimate their intake and the gap in meeting their nutritional needs. Table 6.1 shows the energy and protein requirements for healthy adults and children, as well as the added energy increments needed for persons who are HIV-infected or sick with AIDS and pregnant and lactating women. This information can be used to estimate daily household energy and protein requirements in Table 6.5.

A family of nine people is represented in the example in Table 6.5. Each adult is moderately active and an adult male is HIV-infected and symptomatic. The woman is breastfeeding her one year old infant, and two active adolescent orphans are part of the household. The calculation of requirements indicates that the household needs an energy intake of 20,244 kcal and 414 g of protein each day. Note the total consists of the sum of each persons requirements and not the average multiplied by the number of people in the household. In situations where individual age and sex information is not easily available, an average minimum requirement for energy of 2,100 kcal per person per day⁷ and protein of 52.5 g per person per day can be used, irrespective of the age and sex composition of the family. While it is preferred that calculations are based on individual requirements founded in age and sex, it is often not possible to do this in field situations. Make sure whichever method selected is explained.

Table 6.1. Daily Energy and Protein Requirements for Adolescents, Adults, and Children ⁸

Age	Energy (kcal per day) ^{9, 10}	Protein ¹¹ (g per day)
	Sexes Combined	Sexes Combined
0 to 2.9 months	404	12
3 to 5.9 months	550	14
6 to 8.9 months	615	14.5
9 to 11.9 months	686	14
12 to 23.9 months	894	14

24 to 35.9 months	1,250		22	
36 to 59.9 months	1,500		26	
60 to 69 years	1,710		30	
7 to 9.9 years	1,880		34	
	Males	Females	Males	Females
10 to 11.9 years	2,172	1,894	48	49
12 to 13.9 years	2,437	2,063	59	59
14 to 15.9 years	2,795	2,214	70	64
16 to 17.9 years	3,071	2,275	81	63
18 to 29.9 years	2,925	2,140	55	49
30 to 59.9 years	2,866	2,145	55	49
60+ years	2,382	1,925	55	49
Pregnancy		Add 285		Add 7
Lactation		Add 500		Add 20

Note: The above energy requirements for adults are average across a range of body weights.

82

Table 6.2. Average Energy and Protein Requirements for a Typical Population for Food Aid Programming when Not Using Individual Age- and Sex-specific Requirements

	<i>Energy (kcal per day)</i>	<i>Protein (g per day)</i>
<i>All ages and sexes</i>	2,100	52.5

Table 6.3. Adults, Adolescents, and Children: Adjustments for HIV Status

	<i>HIV Positive Phase</i>	<i>Energy</i>	<i>Protein</i>
<i>Adults and Adolescents</i>	Asymptomatic	10 percent increase	No change
	Symptomatic	20 to 30 percent increase	No change
<i>Children Asymptomatic</i>		10 percent increase	No change
	Symptomatic with no weight loss	20 to 30 percent increase	No change
	Symptomatic with weight loss	50 to 100 percent increase	No change

Table 6.4. The Energy Requirement of a 25 Year Old HIV-infected Asymptomatic Pregnant Woman with Moderate Activity Level

Energy requirement + HIV status* + Pregnancy =				TOTAL		
2,140	+	214	+	285	=	2,639 kcal
* The addition for the woman's HIV infection was estimated to be 10 percent of 2,140 kcal or 214 kcal.						
Her daily protein requirements would be 56 g per day (i.e., 49 g base plus 7 g for pregnancy).						

8 Latham, Michael C. Human

Nutrition in the Developing World (Food and Nutrition Series No. 29). Rome, Italy: Food and Agriculture Organization of the United Nations (FAO), 1997.

9 Minimum energy

requirements are based on moderate activity levels. For light activity levels reduce requirements for adolescent and adult males by approximately 25 percent and for females by 8 percent. For heavy activity levels increase requirements for adolescent and adult males by approximately 33 percent and for females by 20 percent.

An HIV-infected asymptomatic 12 year old moderately active boy should get 2,681 kcal per day (i.e., 2,437 + 244) or 10 percent for HIV infection and 59 g of protein.

Table 6.5. Illustrative Calculation of Daily Household Requirements

		Energy (Kcal/day)	Protein (g/day)
Adults:			
1. Male (33 years)		2,866	55
2. Female lactating (28 years)	(2140+500)	2,640 (49+20) 69	
3. Male HIV-positive symptomatic (40 years)	(2866+ 860*)	3,726	55
Children:			
4. Male (one year)		894	14
5. Female (four years)		1,500	26
6. Female (seven years)		1,880	34
7. Male (nine years)		1,880	34
8. Female (13 years)		2,063	59
9. Male (15 years)		2,795	70
Total household daily requirements:		20,244	416

*HIV infection results in a need for 20 to 30 percent more energy during the symptomatic phase . In this case, 30 percent (i.e., 860 kcal) is used.

¹⁰ Energy usually quoted in kilocalories (kcal). The SI unit of energy is the joule. The relationship between the two units is 1 kcal = 4.18 kilojoules. Thus, the estimated daily per capita energy requirement of 2100 kcal = 8,778 kilojoules.

¹¹ Protein values are adjusted for digestibility factor of 85 percent, representing a diet containing mostly cereals, starchy roots, and pulses, and little complete protein as found in animal products.

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Selecting Ration Size and Composition

Decisions about both the ration size and the composition of the foods included in a food basket should be made based on objectives such as addressing nutritional needs and serving as an incentive to participate in a program.

Before determining ration size, a brief assessment should be conducted to determine the community definition of a household. The definition will vary, particularly in heavily HIV-prevalent areas where household composition changes as relatives and friends care for children and others.

The selection of foods for inclusion in a food aid program should be influenced by four considerations as to whether it: 1) is nutritionally appropriate; 2) is culturally acceptable; 3) can be properly processed, stored, and prepared; and 4) complements rather than replaces local food production. Other factors, such as which commodities are

available, sometimes restrict choice. Table 6.6. shows the nutritional value of foods available through the U.S. Title II Food Program. A more complete list of commodities and their composition can be found in Fact Sheets in Part 1 of the Commodity Reference Guide, available online at the USAID website: www.usaid.gov/our_work/humanitarian_assistance/ffp/crg/.

Nutritional Value. Does the food to be included meet the nutritional needs of adults and children. Is it well-tolerated and easily digestible by a child or adult who is sick with AIDS. For many young children and infants, there are limits in the volume and bulk that can be digested. For a person sick with AIDS, poor absorption of foods is common. For young children and HIV-infected persons, foods that are high in protein and micronutrient content, such as fortified CSB, are more beneficial and easily digestible see Chapter 3 on managing symptoms for more information.

Table 6.6. Selection of Foods Provided through the U.S. Title II Food Program

<i>Food</i>	<i>Energy (kcal/100 g)</i>	<i>Protein (per 100 g)</i>	<i>Iron (mg/100 g)</i>	<i>Vitamin A* (IU/100 g)</i>
Cereals				
Bulgur	342	12.3	2.9	2,205
Cornmeal	366	8.5	2.9	2,205
Rice	365	7.1	0.8	0
Sorghum	339	11.3	3.0	2,205
...

Wheat flour fortified	333	11.7	4.4	2,205
Higham				
beans	338	28.1	9.02	39
Peas	341	24.6	4.40	149
Fortified blended foods				
CSB	374.3	17.1	17.49	2,612
Wheat soy blend	354.5	21.5	17.85	2,323
Fats				
Vegetable oil	884	0.0	.02	6,000

*Note that vitamin A composition is often presented as micrograms of retinol equivalents (i.e., micrograms RE) IU conversions: 1,000 IU = 333 micrograms RE

Cultural Acceptability. A community or household may have food preferences or taboos, particularly during times of pregnancy, lactation, or illness. It is important to select foods that promote practices that enhance nutritional status and discourage potential harmful practices. As noted, this is an important component of the assessment phase. Program planners should make suggestions of available food choices to community members and get their input before determining the ration.

Availability of Processing , Storage and Preparation Techniques. The availability of milling facilities and fuel should be considered when selecting food aid commodities. In areas where fuel shortages are common, selecting foods that require less preparation and cooking time may be advisable. Flours and pre-mixes do not require milling. It is also important to consider the shelf-life and type of storage facility and packaging, particularly in tropical climates where pests, heat, and humidity can result in food losses.

Compatibility with Local Production.

good protein source (e.g., beans, lentils), and a widely acceptable high-energy source (e.g., refined vegetable oil). It is common to have the cereal and bean or lentil combination or weight ratio of three-to-one or two-to-one. In the example in Table 6.7., the ratio of weight of CSB to lentils is one-to-one. Other combinations are possible and the program manager is encouraged to go through the calculation and adapt it to other scenarios using a spreadsheet-type tool.

In the example in Table 6.7., the monthly ration was determined based on total family daily needs. The calculations captured the additional needs of the HIV-infected family member as well as a condition that approximately 25 to 30 percent of energy needs should come from oil. Note that the ration provided approximately half of the family needs for energy and protein.

Whole grain cereals, such as wheat and corn, are not fortified. All processed food cereals under Title II programs, however, with the exception of rice, are fortified with B vitamins (e.g., thiamin, riboflavin, folic acid, niacin),

Donated food should not impede local production or reduce the demand for local foods. Finding commodities that can complement local foods or replace them during seasonal shortages is an important consideration when selecting the commodity for inclusion in a food basket.

Calculating a Ration. Two approaches are taken in this guide. The first uses precise knowledge of the age and sex composition of the recipients and the second uses average energy and protein requirements.

An example for calculating the ration size based on energy and protein for the household including the person a PLWHA who is symptomatic is presented in Table 6.7. The overall ration size is based on the estimated nutritional needs for all household members for energy and protein and taking into account the food already available for household consumption.

The ration consists of three commodities common in Title II programs: a micronutrient-fortified cereal (e.g., CSB), combined with a

vitamin A, calcium, and iron. Blended cereals (e.g., CSB, wheat soy blend) are further fortified with zinc, B12, pantothenic acid, iodine, magnesium, vitamin C, vitamin D, and vitamin E.

The micronutrient content of blended cereals is estimated. Because some of these vitamins are lost during storage and cooking, they do not accurately reflect the level of nutrient available to the body after consumption. For example, up to 40 percent of vitamin A can be lost from fortified cereals that are exposed for several months to heat, light, and air. Minerals are not subject to deterioration by environmental factors; however, their bioavailability in cereal can be greatly reduced by absorption inhibitors present in food aid commodities and other foods commonly consumed, such as tea and coffee.

All refined vegetable oil provided through Title II is fortified with vitamin A, a nutrient essential for the protection of the health of any population, but particularly young children. One tablespoon or about 14 g of fortified vegetable oil potentially satisfies over 70

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Table 6.7. Illustrative Calculation of a Food Basket for a Household
Calculation for household food ration requirements: (Based on 9 people already consuming 10,000 kcal and 100 grams of protein per day)

A) HOUSEHOLD REQUIREMENT Energy Protein

Adults: Kcal/day g/day

Male HIV- 2,866 55
 Female HIV- lactating (2,140 + 500) 2,640 (49+20) 69
 Male HIV-positive (2,866 + 860) 3,726 55
 Children (age in years): _____
 Male (1) 894 14
 Female (4) 1,500 26
 Female (7) 1,880 34
 Male (9) 1,880 34
 Female (13) 2,063 59
 Male (15) 2,795 70
 Total household daily requirements: 20,244 416

B) DEFICIT: To calculate subtract family intake from requirement

(Daily requirement - Estimated current intake) = Deficit

Energy 20,244 kcal - 10,000 kcal = 10,244
 Protein 416 g - 100 g = 316

C) CONSTRUCTING A FOOD BASKET

Select three commodities for the food basket. Choose a high energy source (e.g., vegetable oil), a milled cereal fortified with micronutrients (e.g., CSB), and a high protein source (e.g., lentils) as in Table 6.4. Base the ration on at least 25 to 30 percent of the energy coming from fats and oils: $0.30 \times 10,973 = 3,292$ kcal from vegetable oil.

c1. Calculate household daily ration size

Oil: Need 3,073 kcal from vegetable oil in ration or 348 g, based on 1 g oil = 8.84 kcal; then 348 g = 3,076 kcal
 Cereals/Pulses: Need to supply remainder energy, based on total energy deficit (i.e., energy from oil)
 Total deficit is 10,244; oil supply of 3,076; cereal/pulses supply of 7,168 kcal
 Remaining energy supplied by equal amounts of CSB (i.e., 1 kg) and lentils (i.e., 1 kg)
 Where 1 kg of CSB = 3,743 kcal; 1 kg of lentils = 3,380 kcal
 Total energy provided by 1 kg each of CSB and lentils = 7,123 kcal

c2. Calculate monthly ration size

- 1) Oil: 348 g x 30 days = 10.44 kg or 11.35 liters (since 920 g = 1 liter, round up to 11.5 liters)
- 2) CSB: 1 kg x 30 days = 30 kg
- 3) Lentils: 1 kg x 30 days = 30 kg

-2-

c2
Oil: 1 L per month = 10.58 kg per month = 353 g per day x 8.84 kcal/g provides 3,121 kcal per day
Rice: 1 kg per day provides 3,743 kcal per day
Beans: 1 kg per day provides 3,380 kcal per day
Oil, and lentils provide 10,244 kcal per day
meets
energy
requirements

percent of a five to 10 year old child's daily requirement and about 50 percent of an adult's requirement of vitamin A. The calculation for the family ration in Table 6.7. was not based on meeting the requirements for key micronutrients such as vitamin A or iron. But the CSB, lentil, and oil ration for the family of nine provides 43,070 IU per day of vitamin A, excluding the contribution from other foods in the family diet. This is in excess of three times the requirement for this size of family but losses due to storage and cooking would be expected, especially in the CSB, which provided over 60 percent of the vitamin A in the ration.

In situations where a ration has to be estimated for a population and not done based on individual requirements, as was done in Table 6.7., an estimate of the average minimum requirement for energy can be used. Average daily energy needs for a population is estimated to be 2,100 kcal per person per day, irrespective of age, sex, and physical activity. In high HIV-prevalent populations, some agencies increase the requirement by 100 kcal per person per day or more. In Table 6.8., a ration is estimated for a population of 1,000

protein being provided with CSB and lentils. This option is preferred as it enables increased food provisioning that is more reflective of the overall diet and avoids overloading with oil.

Calculations of a ration based on specific nutrients can be done with the information provided in the Commodity Reference Guide based on the nutrient composition of the commodities in Part 1 and the nutrient needs in Part 2. Due to the inhibiting and enhancing effects of different food components on micronutrient utilization, any calculation on specific micronutrients should be carried out by someone familiar with micronutrient malnutrition. Given the difficulty of planning diets based on specific micronutrients, it is recommended that ration calculations be based on energy and protein needs instead.

The WFP, in partnership with UNHCR, has developed a spreadsheet-based program called NutVal¹² to plan rations based on commonly available commodities, including those available through the Title II program. The calculator includes a range of nutrient composition for 147 foods and applies minimum nutrient

¹² For more information on NutVal, contact the Nutrition Section of the World Food Programme: nutrition@wfp.org

for a population of 1,000 children, 204 of who are HIV-positive. In the example, 25 percent of adults are HIV-positive and asymptomatic, 5 percent of adults are HIV-positive and symptomatic, 10 percent of children are HIV-positive and asymptomatic, and 5 percent of children are HIV-positive and symptomatic. In this example, individuals over 15 years old are considered to be adults.

The process for determining a ration for the community involves estimating the energy and protein requirements for everyone and then adding the extra commodities needed to meet the additional energy requirements due to HIV infection. The calculation in Table 6.8. suggests an additional 78,120 kcal per day is needed for the 204 symptomatic and asymptomatic adults and children. The increase in energy amounts to an average increase of 383 kcal per HIV-positive person per day. In the example used, half of the diet was provided from their own resources and, as a result of the infection, food needs for the 204 HIV-positive individuals increased per person per month for vegetable oil was 0.4 L, CSB was 2.2 kg, and nothing for lentils. Increasing the energy requirements for the HIV-positive resulted in an increase in

nutrient requirements for protein, vitamin A, and other nutrients provided by the ration. The calculation yields the percentage of requirements provided by the ration and the percentage of energy provided by fat or protein.

NutVal is a very useful as a simple-to-use spreadsheet application for the calculation, planning, and monitoring of the nutritional value of food aid rations and has four parts. The database and calculation sheets help to plan and calculate the nutrient content of a food ration. The selected ration can then be viewed as a graph. The fourth part helps in collecting and analyzing data from on-site distribution monitoring, also called food basket monitoring. There are also Help pages to provide additional information. For more information on NutVal, contact the Nutrition Section of WFP at nutrition@wfp.org.

For complete specifications, go to the Fact Sheets in Part 1 of the Commodity Reference Guide at www.usaid.gov/our_work/humanitarian_assistance/ffp/crg/ or the FANTA website at www.fantaproject.org.

nutrition@wfp.org.



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Table 6.8. Calculating a Ration for a Community Program Using Average Energy Requirements

Total Population: 1,000
 Percent below 15 years: 65 percent
 Percent below 5 years: 20 percent
 Percent adults HIV-positive asymptomatic: 25 percent
 Percent adults HIV-positive symptomatic: 5 percent
 Percent children HIV-positive asymptomatic: 10 percent
 Percent children HIV-positive symptomatic with weight loss: 5 percent

Calculation for food ration requirements, based on the assumption that people are already consuming half of their energy requirements from other sources:

A) MINIMUM REQUIREMENT Energy (kcal per day) Protein (g per day)

1. Base requirement 2,100,000 52,500
 (1,000 people: energy = 2,100 kcal and protein = 52.5 g)
2. HIV-positive adult asymptomatic (88 people: 10 percent increase) 18,480
3. HIV-positive adult symptomatic (18 people: 30 percent increase) 11,340
4. HIV-positive child asymptomatic (65 people: 10 percent increase) 13,650
5. HIV-positive child symptomatic with weight loss (33 people: 50 percent increase) 34,650

Total community daily requirements: 2,178,120 52,500

In this case, HIV/AIDS represents an overall increase in energy in the community's total ration of 3.7 percent (i.e., 78,120 kcal per day or 383 kcal per HIV-positive person per day) over minimum requirements.

B) DEFICIT:

To calculate community deficit, subtract minimum requirements from locally available sources (e.g., 50 percent of 2,100,000). All additional energy needs for HIV-positive need to be provided by food ration.

Deficit in energy from local sources is 1,050,000 kcal per day, and protein is 26,250 g per day.

C) CONSTRUCTING A FOOD BASKET

The food basket will be based on meeting 50 percent or minimum requirements of all beneficiaries (i.e., 1,000 people), plus additional rations based on recommendations for HIV-positive individuals, assuming half of the food needs will be met from local sources. Select three commodities for the food basket. In this example, choose an energy dense source (e.g., vegetable oil), a blended cereal fortified with micronutrients (e.g., CSR), and a high protein source.

micronutrients (e.g., CSB), and a high protein source (e.g., lentils) as in Table 6. Base the ration on at least 25 to 30 percent of the energy coming from fats and oils (e.g., $0.30 \times 1,050,000 \text{ kcal} = 315,000 \text{ kcal}$ from vegetable oil).

c1. Calculate Community daily ration size for General Population

Oil: Need 315,000 kcal from vegetable oil in ration = 38.7 L

Based on 1 g oil = 8.84 kcal; then $35,634 \text{ g} = 315,000 \text{ kcal}$

Note that 920 g of oil = 1 L or $35,634 \text{ g} = 38.7 \text{ L}$

Cereals/Pulses: needed to supply remainder energy, based on total energy deficit (i.e., energy from oil and a weight ratio of CSB to lentils of two-to-one, due to greater energy needs of the HIV-positive

Total energy deficit of 1,050,000 - energy from oil of 315,000 kcal = 735,000 kcal

Remaining energy supplied by amounts of CSB and lentils in two-to-one ratio by weight

Where 1 kg of CSB = 3,743 kcal; 1 kg of lentils = 3,380 kcal

CSB: Need 490,000 kcal from CSB in ration = 130.9 kg

Lentils: Need 245,000 kcal from lentils in ration = 72.5 kg

c.2 Check proposed ration meets protein requirements

Since CSB and lentils are the major source of protein and the deficit is 26,250 g per day

CSB: Protein per kg = 171 g or Ration = 22,384 g per day

Lentils: Protein per kg = 281 g or Ration = 20,373 g per day

CSB and lentils provide protein of 42,757 g per day in excess of requirements by 16,678 g per day.

Protein provided by the ration for the community exceeds minimum requirement by 11.7 kg per day.

Increasing the oil or using cereals will reduce the protein level in the ration but at the expense of micronutrients. The decision is to increase the CSB amounts and accept higher protein intakes for the HIV-positive beneficiaries.

c3. Calculate basic monthly ration size for the general population of 1,000 people

Vegetable Oil: 38.7 L per day x 30 days = 1,161 L

CSB: 130.9 kg per day x 30 days = 3,927 kg

Lentils: 72.5 kg per day x 30 days = 2,175 kg

General Ration (rounded per person per month):

Vegetable Oil = 1.2 L

CSB = 4 kg

Lentils = 2.2 kg

c4. Calculate additional daily ration for HIV-positive population

Additional energy needs for the HIV-positive requires an increase in energy of 78,120 kcal per day for the 204 symptomatic and asymptomatic adults and children see above. No additional protein needs are recommended. To maintain approximately 30 percent of the dietary energy to be from oil, an increase of oil and CSB is recommended.

Oil: need 23,436 kcal from vegetable oil in ration = 2.9 L, based on 1 g oil = 8.84 kcal; then 2,651 g = 23,436 kcal

Where 920 g oil = 1 L or 2,651 g = 2.9 L

Cereals/Pulses: needed to supply remainder energy, based on total energy
deficit energy from oil = 54,684 kcal - energy from oil of 23,436 kcal = 31,248 kcal
Total energy deficit of 31,248 kcal
Remaining energy supplied by CSB, where 1 kg of CSB = 3,743 kcal
CSB: need 31,248 kcal from CSB in ration = 8.37 kg

Calculate additional monthly ration size for HIV-positive
Oil: 2.9 x 30 days = 87 L
CSB: 14.6 kg x 30 days = 438 kg

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Linking Communities with Other Services

Providing food can play an important role in providing nutritional support to HIV-infected individuals, including management of drug related side effects of ARV therapies; assisting HIV-affected households to cope with a member who is living with AIDS; providing extra food to overburdened households caring for children orphaned by the disease; and assisting households that have suffered the recent loss of a member to allocate resources to cover other expenses associated with an illness or loss. If food aid is provided, it should be part of an overall intervention strategy that builds the capacity of AIDS-affected households and communities to sustain them over the long term.

Programs that use food to provide nutritional support to households are most efficient when combined or linked to other services such as:

- Prevention of HIV transmission, including the prevention of MTCT during pregnancy, delivery, and infant care;
- Treatment of HIV infection with HAART;
- Nutrition education and counseling to ensure proper utilization, preparation, and storage of foods;
- Growth promotion, breastfeeding, and basic child health services to promote the health of young children;
- Health

The actual increases in consumption required by individual HIV-positive beneficiaries will depend on their age, sex, and symptoms (see Table 6.1). The above calculation uses average minimum requirements for a population for planning purposes.

Institution-based Feeding Programs

Institutions, such as orphanages, community groups, hospitals, hospices, and health clinics provide on-site and take-home rations for specific groups, including HIV/AIDS-affected people. These programs are usually targeted to people who are living with AIDS who come for medical treatment and care, children who have lost a parent to HIV/AIDS, or street children.

Designing a complete diet for participants fed at institutions requires careful consideration of how to meet nutritional needs and ensure that food is appealing, culturally acceptable, and easy to prepare, serve and consume and that resources are available to ensure needs can be met over time. The role of food aid should be to complement locally available foods, especially fruits and vegetables. Earlier suggestions for estimating a food basket can be used, but consideration must be given to additional foods and flavorings such as spices, salt, sugar, fruits, and vegetables, which are not usually part of a Title II ration.

Institutional and Home-based Care for Severely

serv infections, especially diarrhea, TB, and
ices malaria, which can worsen malnutrition;
to reproductive health services, particularly
manag pre- and post-natal care to assist pregnant
e and lactating women;

the psychosocial support for PLWHAs and
family members to cope with the illness
and plan for the future; and

Other types of economic and social support,
including microfinance, agricultural
training, vocational training, and school
feeding programs, and programs that help
HIV-affected households maintain their
income, savings, and overall livelihood
security.

Malnourished Individuals

In some cases, people suffering from AIDS
or children orphaned by the death of a parent
may become severely malnourished and need
therapeutic foods and medical care to reduce
the risk of death or excessive morbidity.
Severe acute malnutrition occurs once AIDS
has developed, but these children are often
underweight and stunted even before AIDS
symptoms are evident. More significant,
however, is that the indirect impact of HIV on
nutrition by the underlying poverty, which also
results in acute malnutrition events.

HIV-positive children do respond to treatment
for severe acute malnutrition using special
foods such as F100 therapeutic milk and

special pastes such as Plumpynut produced by Nutriset. The nature of the HIV results in bouts of infection and weight loss and is therefore difficult to treat. The approach to using specialized foods for HIV positive people should combine both supplementary feeding approaches with therapeutic feeding.

In therapeutic feeding, a person receives both medical and nutritional care until he/she gains sufficient weight. The timeframe for rehabilitating a severely malnourished child without HIV infection is generally four to six weeks and can be longer. For HIV-infected adults and children, however, weight gain may not be sufficient or relapse, and programs will need to assess with households whether nutritional care or more intensive medical treatment is needed.

In addition to center-based therapeutic care, home-based or Community Therapeutic Care (CTC) can be used to deal with rehabilitation of severely malnourished adults and children. Often, critical to home based or CTC is the availability of ready-to-use therapeutic food (RUTF) such as PlumpyNut. RUTF can

Interventions for which an adequate evidence base currently exists and which should be immediately included in program are listed below. Other interventions, including food aid and food security programs, are likely to be effective in certain situations and may be supported on a pilot basis while further evidence is gathered.

Types of Food and Nutrition Supplements

Nutrition and food-based interventions often include the term supplement, which refers to any food or nutritional product that is provided to supplement or add to the daily diet. Three types of supplements should be considered:

1. Food to manage HIV-related symptoms **and secondary infections; maintain weight and treat mild weight loss; manage the nutrition-related side effects of ART; and address nutritional needs in food insecure areas. For PLWHAs, foods that are enriched, easy to prepare and digest, and palatable during illness are preferred. These**

be imported or locally produced and includes vitamins and minerals, and consists of locally produced foods like peanut, butter, oil, full cream milk, and sugar. RUTF pastes have been successfully used for treating outpatients suffering from uncomplicated severe malnutrition and moderate uncomplicated malnutrition in resource limited settings. RUTF is a high-energy, nutrient-dense food that meets strict formulations and all safety requirements and is administered by trained providers, including caregivers. For more information, consult guidelines from UNICEF, WHO, international NGOs, and national authorities. For CTC information, go to www.fantaproject.org/ctc/ctc.shtml.

Priority Nutrition and Food-based Actions

The goals and objectives of nutrition and food interventions for PLWHAs vary according to the disease stage of the individual, and whether or not they are receiving ART and other treatments for secondary infections. Goals and objectives will also vary according to the group being targeted for interventions.

foods can include commodities provided through USAID Title II and WFP or commodities produced and/or purchased locally. Programmed food is intended to supplement the food that an individual or household has available, except in emergency situations. Some examples of food commodities currently being used in HIV/AIDS programs include: CSB, vitamin A-fortified vegetable oil, and lentils.

2. **Nutrition supplements for specific HIV-positive groups at risk of malnutrition.** This includes multi-vitamin supplements for HIV-positive children, special fortified foods for non-breastfed children six months and older, and nutritional supplements for pregnant and lactating women, according to WHO or national protocols. Such supplements may include iron-folic acid pills for pregnant women and to treat iron deficiency anemia, and multiple micronutrient (MM) supplements. The optimal MM formulation for these groups is unknown.

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

3. Therapeutic foods for rehabilitation
**of moderate and severe malnutrition
in HIV-positive adults and children.**

This includes nutrient-dense foods that can be used for clinic-based stabilization and home- or community-based care, WHO or national nutrition rehabilitation protocols. The foods and protocols used to treat severe and moderate malnutrition in the general population may be used for HIV-positive patients, although some adaptations may be required for adults and those experiencing severe symptoms. Some examples of therapeutic foods include: BP100, F100 therapeutic milk, Plumpynut (a peanut-based paste), and locally produced nutrient-dense foods.

PLWHAs targeted for HIV/AIDS programming generally come from populations with high pre-existing rates of malnutrition. This needs to be taken into account when designing nutrition and food interventions, but the nutritional requirements for PLWHAs are not significantly different than those for the general population. There are increased daily energy needs (10-30 percent) to maintain or recover weight and there is a heightened need to have palatable and easy-to-digest foods for those suffering from anorexia, oral sores, diarrhea, and other symptoms that affect ability to eat. Nutrient dense foods or food-spreads are an excellent way to insure that nutritional needs are being met in people with reduced appetite

number of locally produced food products that
ability being marketed as specialized foods
to PLWHAs. Some caution is advised when
eat considering the use of these foods in HIV/
of AIDS programs, as they have not yet been
nutritional for effectiveness and cost.
A

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw FOOD-BASED APPROACH TO SUPPORT HIV/AIDS-AFFECTED HOUSEHOLDS AND COMMUNITIES CHAPTER 6.

Table 6.9. Examples of Food and Nutrition Activities in HIV/AIDS Programs

<i>Activity</i>	<i>Objective</i>	<i>Related Emergency Plan Goal</i>	<i>Beneficiary entry criteria</i>	<i>Entry Points</i>	<i>Resources Required</i>
Anthropometric baseline assessment and follow-up monitoring	Identify moderately and severely malnourished PLWHAs	Care and support, treatment	Screening for all PLWHAs participating in care programs	pMTCT, voluntary counseling and testing (VCT), ART, home-based and palliative care	Training of health workers in nutritional assessment and equipment for anthropometric screening
Therapeutic feeding (inpatient facilities or support to community-based therapeutic feeding programs)	Nutritional rehabilitation of severely malnourished children (including OVCs) and adults living with HIV/AIDS according to standard WHO nutritional protocols for treatment of severe malnutrition	Care and support, treatment	Children: Weight/height < 3 SD or < 70 percent median Adults: Weight loss greater than 10 percent of body weight; or mid-upper-arm circumference (MUAC) ≤ 160 mm irrespective of clinical signs; or MUAC 161-185 mm plus WHO Stage 2 or 3 criteria	pMTCT, VCT, ART, home-based and palliative care	Training and ongoing nutritional/ Logistics, Technical Assistance for program supervision, therapeutic foods (e.g. F100, F75 therapeutic milk, Plumpynut)
Medical services	HIV+ Children: Vitamin	Care and	Children:	pMTCT, VCT,	Training and

<p>in therapeutic centers/programs</p>	<p>A, presumptive treatment with antibiotics, treatment of malaria, and anemia and anti-helminthes, where appropriate HIV+ Adults: presumptive treatment with antibiotics, treatment of malaria and anemia and anti-helminthes, where appropriate</p>	<p>support, treatment</p>	<p>Weight/height percent 70 percent median, Adults: BMI < 16.0 Kg/M² for non pregnant women:</p>	<p>ART, base and palliative care</p>	<p>technical assistance for program supervision, drugs and medical supplies</p>
<p>Supplementary feeding (in outpatient facilities)</p>	<p>Nutritional rehabilitation of moderately malnourished children (including OVC) and adults living with HIV/AIDS according to standard WHO nutritional and medical protocols</p>	<p>Care and support, treatment</p>	<p>Children: Weight/height < 2 SD or 70-80 percent percent median, Adults: Weight loss greater than 10 percent of body weight; or MUAC 161-185 mm; Pregnant and lactating women Nutritional deterioration or failure to gain weight despite ART and/or treatment of infections in any of the above groups</p>	<p>pMTCT, VCT, ART, home-based and palliative care</p>	<p>Training and ongoing nutritional technical assistance for program supervision, Supplement-ary foods (e .g. CSB, oil, other locally produced foods)</p>

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

<i>Activity</i>	<i>Objective</i>	<i>Related Emergency Plan Goal</i>	<i>Beneficiary entry criteria</i>	<i>Entry Points</i>	<i>Resources Required</i>
Supplementary feeding (in outpatient facilities)	To provide incentive for regular follow-up attendance for those PLWHAs not yet qualifying for ART	Treatment CD4	count 200-500 /mm ³	ART	Training and ongoing nutritional technical assistance for program supervision, supplementary foods (e.g. CSB, oil, other locally produced foods)
Nutritional education and counseling	To provide advice on: 1) Maintaining weight among PLWHAs, both those on and not on ART, by increasing energy intake 2) Safe infant feeding (e.g., early and exclusive breastfeeding or replacement feeding options) to prevent transmission/non-HIV related illness/death 3) Safe food/water handling/use to prevent diarrhea 4) Manage HIV-related illnesses, with a focus on dietary management of symptoms (e.g. anorexia, diarrhea, nausea) to promote adherence and improvement of diets during recuperation from acute infections, to recover lost weight	Care and support, treatment	PLWHAs	VCT, pMTCT, ART, home-based and palliative care	Training and nutritional technical assistance, development of national guidelines and nutritional commodities, including replacement feeding if appropriate

Preventative care package	Improve participation and symptom management	Care and support	Participants receiving insecticide-treated bednets (ITNs), safe water systems and cotrimoxazole (this is not screening criteria)	Home-based and palliative care	Training and TA and nutritional commodities (e.g. CSB, oil other locally produced foods)
---------------------------	--	------------------	--	--------------------------------	--

Selected References

Bonnard, P. HIV/AIDS Mitigation: Using *What We Already Know (Technical Note 5)*. Washington D.C.: Food and Nutrition Technical Assistance Project (FANTA), Academy for Educational Development (AED), 2002.

Castleman, T., E. Seumo-Fosso, and B. Cogill. *Food and Nutrition Implications of Antiretroviral Therapy in Resource Limited Settings (Technical Note 7)*. 2nd ed. Washington, D.C.: Food and Nutrition Technical Assistance Project (FANTA), Academy for Educational Development (AED), 2004.

Committee on International Nutrition, Food and Nutrition Board, Board on International Health, Institute of Medicine of the National Academies (IOM). *Estimated Mean per Capita Energy Requirements for Planning Emergency Food Aid Rations*. Washington, D.C.: National Academy Press, 1995.

Dickin, K. M.

Food and Nutrition Technical Assistance Project (FANTA). *Improving the Use of Food Rations in Title II Maternal/Child Health and Nutrition Programs (Draft)*. Washington D.C.: FANTA, Academy for Educational Development (AED), 1999.

Grobler-Tanner, C., and S. Collins. *Community Therapeutic Care (CTC): A New Approach to Managing Acute Malnutrition in Emergencies and Beyond (Technical Note 8)*. Washington, D.C.: Food and Nutrition Technical Assistance Project (FANTA), Academy for Educational Development (AED), 2004.

Institute of Medicine of the National Academies (IOM). *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids (Macronutrients)*. Washington, D.C.: National Academies Press, 2002. An online summary available at <http://books.nap.edu/openbook/0309085373/html/1.html> as viewed August 2004.

Origins and Dialogue: A Program Planners Guide to Consultative Research for Improving Young Child Feeding. Washington, D.C.: Support for Analysis and Research in Africa (SARA), Academy for Educational Development (AED), and The Manoff Group, 1998.

Donahue, J., and J. Williamson. *Community Mobilization to Mitigate the Impacts of HIV/AIDS*. Washington, D.C.: Displaced Children and Orphans Fund, U.S. Agency for International Development (USAID), 1999.

Food and Agriculture Organization of the United Nations (FAO). *Requirements of Vitamin A, Iron, Folate and Vitamin B12: Report of a Joint FAO/WHO Expert Consultation*. Rome, Italy: FAO, 1988.

Institute of Medicine of the National Academies (IOM). *Dietary Reference Tables The Complete Set*. Washington, D.C.: National Academies Press, 2004. The complete set as viewed August 2004 at <http://www.iom.edu/board.asp?id=3788>.

James, W.P.T., and E.C. Schofield. *Human Energy Requirements: A Manual for Planners and Nutritionists*. Oxford, England: Oxford University Press, 1990.

Kadiyala, S., and S. Gillespie. *Rethinking Food Aid to Fight AIDS (Food Consumption and Nutrition Division Paper No. 159)*. Washington, D.C. and Rome, Italy: International Food Policy Research Institute (IFPRI) and United Nations World Food Programme (WFP), 2004.

Latham, M. *Human Nutrition in the Developing World (Food and Nutrition Series No. 29)*. Rome, Italy: Food and Agriculture Organization of the United Nations (FAO), 1997.

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Loevinshohn, M., and S. Gillespie. *RENEWAL in Africa. Washington, D.C. and Rome, Italy: International Food Policy Research Institute (IFPRI) and United Nations World Food Programme (WFP)*, 2004.

Lorey, M. *Handbook for Programs to Assist Children Affected by HIV/AIDS. Washington, D.C.: U.S. Agency for International Development (USAID)*, 2000.

Piwoz, E. *Nutrition and HIV/AIDS: Evidence, Gaps, and Priority Actions. Washington, D.C.: U.S. Agency for International Development (USAID) and Support for Analysis and Research in Africa (SARA) and Food and Nutrition Technical Assistance (FANTA) Projects, Academy for Educational Development (AED)*, 2004.

Quinn, B. *New Dietary Reference Intakes: Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids. Belmont, CA: Thomson Wadsworth*, 2002.

United Nations High Commission on Refugees (UNHCR) and United Nations World Food Programme (WFP). *Guidelines for Selective Feeding Programmes in Emergency Situations. Geneva, Switzerland: UNHCR*, 1999.

U.S. Agency for International Development (USAID), Office of Food for Peace of the Bureau of Democracy, Humanitarian Assistance and Conflict. *Commodities Reference Guide. Washington,*

World Health Organization (WHO). *The Management of Severe Malnutrition: A Manual for Physicians and other Senior Health Workers. Geneva, Switzerland: WHO*, 1999.

World Health Organization (WHO). *The Management of Nutrition in Major Emergencies. Geneva, Switzerland: WHO*, 2000.

World Health Organization (WHO). *Nutrient requirements for people living with HIV/AIDS: Report of a technical consultation 13-15 May 2003. Geneva, Switzerland: WHO*, 2003.

D.C.:
World Health Organization (WHO).
2003.
*Complementary Feeding: Report of the
Global Consultation, and Summary of Guiding
Principles for Complementary Feeding of the
Breastfed Child. Geneva, Switzerland: WHO,*
2002.

World Health Organization (WHO). *Energy
and Protein Requirements, Report of Joint
FAO/WHO/UNU Expert Consultation*
(Technical Report Series 724). Geneva,
Switzerland: WHO, 1985.

FOOD-BASED APPROACH TO SUPPORT HIV/AIDS-AFFECTED HOUSEHOLDS AND COMMUNITIES CHAPTER 6.
home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Websites

Academy of Educational Development (AED)

www.aed.org

Commodities Reference Guide

www.usaid.gov/our_work/humanitarian_assistance/ffp/crg/

Community Therapeutic Care

www.fantaproject.org/ctc/ctc.shtml

Food and Nutrition Technical Assistance Project (FANTA)

www.fantaproject.org

Food and Agriculture Organization of the United Nations (FAO): HIV/AIDS and Food Security

www.fao.org/hivaids/

International Food Policy Research Institute (IFPRI)

www.ifpri.org

Institute of

United Nations World Food Programme (WFP)

www.wfp.org

U.S. Agency for International Development (USAID)

www.usaid.gov

U.S. Agency for International Development (USAID): Displaced Children and Orphans Fund

www.usaid.gov/our_work/humanitarian_assistance/the_funds/dcof/index.html

World Health Organization (WHO): HIV/AIDS Program

www.who.int/hiv/en/

**Medicine of (IOM)
national**
www.iom.edu

**Joint United Nations Program on HIV/
AIDS (UNAIDS)**
www.unaids.org

**Support for Analysis and Research in
Africa Project (SARA)**
<http://sara.aed.org>

**United Nations Childrens Fund
(UNICEF): HIV/AIDS Program**
www.unicef.org/aids/index.html

**United Nations High Commission on
Refugees**
www.unhcr.org

United Nations University (UNU)
www.unu.edu



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Glossary of Terms

ACQUIRED IMMUNE DEFICIENCY SYNDROME (AIDS): The most severe manifestation of infection with the Human Immunodeficiency Virus (HIV). The Centers for Disease Control and Prevention (CDC) lists numerous opportunistic infections and cancers that, in the presence of HIV infection, constitute an AIDS diagnosis. In 1993, CDC expanded the criteria for an AIDS diagnosis in adults and adolescents to include CD4+ T cell count at or below 200 cells per microliter in the presence of HIV infection. In persons (age 5 and older) with normally functioning immune systems, CD4+ T cell counts usually range from 5001,500 cells per microliter. Persons living with AIDS often have infections of the lungs, brain, eyes, and other organs, and frequently

phase. However, it is now known that during the time of primary infection, high levels of plasma HIV RNA can be documented.

ADHERENCE: Compliance with a drug regimen, as in taking medications correctly and on time. It encompasses the patient's active participation in his or her own healthcare, seeking medical advice, keeping appointments, following recommendations concerning lifestyle, as well as following medical regimens.

AFFECTED COMMUNITY: Persons living with HIV and AIDS and other related individuals, including their families, friends, and advocates whose lives are directly influenced

and Kaposi's sarcoma, a type of cancer called Kaposi's sarcoma. Irritating weight loss.

ACUTE HIV INFECTION: The period of rapid viral replication immediately following exposure to HIV. An estimated 80 to 90 percent of individuals with primary HIV infection develop an acute syndrome characterized by flu-like symptoms of fever, malaise, lymphadenopathy, pharyngitis, headache, myalgia, and sometimes rash. Following primary infection, seroconversion and a broad HIV-1 specific immune response occur, usually within an average of 3 weeks after transmission of HIV. It was previously thought that HIV was relatively dormant during this

psychological, and sociological ramifications. HIV infection and syndrome.

AIDS: See Acquired Immune Deficiency Syndrome.

AIDS-RELATED CANCERS: Several cancers are more common or more aggressive in persons living with HIV. These malignancies include certain types of immune system cancers known as lymphomas, Kaposi's Sarcoma, and anogenital cancers that primarily affect the anus and the cervix. HIV, or the immune suppression it induces, appears to play a role in the development of these cancers.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

G L O S S A R Y

Glossary

AIDS WASTING SYNDROME: The involuntary weight loss of 10 percent of baseline body weight plus either chronic diarrhea (two loose stools per day for more than 30 days) or chronic weakness and documented fever (for 30 days or more, intermittent or constant) in the absence of a concurrent illness or condition other than HIV infection that would explain the findings.

ANEMIA: A lower than normal number of red blood cells.

ANOREXIA: The lack or loss of appetite that leads to significant decline in weight.

ANTHROPOMETRY: The study of human body measurements, especially on a comparative basis.

ANTIBODY: A protein that is manufactured by lymphocytes (a type of white blood cell) to neutralize an antigen or foreign protein. Bacteria, viruses, and other microorganisms commonly contain many antigens.

ANTIRETROVIRAL DRUGS (ARV):

system, derived from the bone marrow and spleen; they are involved in the production of antibodies. During infections, these cells are transformed into plasma cells that produce large quantities of antibody directed at specific pathogens. When antibodies bind to foreign proteins, such as those that occur naturally on the surfaces of bacteria, they mark the foreign cells for consumption by other cells of the immune system. This transformation occurs through interactions with various types of T cells and other components of the immune system. In persons living with AIDS, the functional ability of both the B and the T lymphocytes is damaged, with the T lymphocytes being the principal site of infection by HIV.

BODY FLUIDS: Any fluid in the human body, such as blood, urine, saliva (spit), sputum, tears, semen, mothers milk, or vaginal secretions. Only blood, semen, mothers milk, and vaginal secretions have been linked directly to the transmission of HIV.

BODY MASS INDEX (BMI): A measure of body fat based on height and weight that

Substances used to kill or inhibit the multiplication of retroviruses such as HIV.

ANTIVIRAL: A substance or process that destroys a virus or suppresses its replication (i.e., reproduction).

ARV: See Antiretroviral Drugs.

ART: Antiretroviral therapy.

ASYMPTOMATIC: Without symptoms.
Usually used in the HIV/AIDS literature to describe a person who has a positive reaction to one of several tests for HIV antibodies but who shows no clinical symptoms of the disease.

BIOAVAILABILITY: The extent to which an oral medication is absorbed in the digestive tract and reaches the bloodstream, thereby permitting access to the site of action.

B LYMPHOCYTES (B CELLS): One of the two major classes of lymphocytes, B lymphocytes are blood cells of the immune

applies to both adult men and women.

BONE MARROW: Soft tissue located in the cavities of the bones where blood cells such as erythrocytes, leukocytes, and platelets are formed.

BONE MARROW SUPPRESSION: A side effect of many anticancer and antiviral drugs, including AZT. Leads to a decrease in white blood cells, red blood cells, and platelets. Such reductions in turn result in anemia, bacterial infections, and spontaneous or excess bleeding.

BREAST MILK SUBSTITUTE: Any food being marketed or otherwise represented as a partial or total replacement for breast-milk, whether or not suitable for that purpose.

CANDIDA: Yeast-like fungi commonly found in the normal flora of the mouth, skin, intestinal tract, and vagina, which can become clinically infectious in immune-compromised persons.

1



[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

CANDIDIASIS: An infection with a yeast-like fungus of the Candida family, generally *Candida albicans*. Candidiasis of the esophagus, trachea, bronchi, or lungs is an indicator disease for AIDS. Oral or recurrent vaginal candida infection is an early sign of immune system deterioration.

CD4 (T4) or CD4+ CELLS: A type of T cell involved in protecting against viral, fungal, and protozoal infections. These cells normally orchestrate the immune response, signaling other cells in the immune system to perform their special functions. Also known as T helper cells. HIV's preferred targets are cells that have a docking molecule called cluster designation 4 (CD4) on their surfaces. Cells with this molecule are known as CD4-positive (or CD4+) cells. Destruction of CD4+ lymphocytes is the major cause of the immune deficiency observed in AIDS, and decreasing CD4+ lymphocyte levels appear to be the best indicator for developing opportunistic infections. Although CD4 counts fall, the total T cell level remains fairly constant through the course of HIV disease, due to a concomitant

CORN-SOY BLEND (CSB): A naturally wholesome blended food containing 69.5 percent cornmeal, 21.8 percent soy flour, a premix of 3.0 percent minerals and vitamin antioxidant, and 5.5 percent soy oil. It is highly nutritious and precooked for ease in use and handling.

CRYPTOSPORIDIOSIS: A diarrheal disease caused by the protozoa *Cryptosporidium* which grows in the intestines. Symptoms include abdominal cramps and severe chronic diarrhea. It is considered an AIDS-defining opportunistic infection in persons with HIV infection. Cryptosporidiosis usually occurs late in the course of HIV disease as immunological deterioration progresses.

DEMOGRAPHIC HEALTH SURVEY (DHS): Assists developing countries to collect, analyze, and use data to improve national programs addressing family planning, maternal and child health, child survival, HIV/AIDS, and reproductive health.

DIABETES MELLITUS (DM): A disorder

increase in the CD8 + cells. The ratio of CD4+ to CD8+ cells is therefore an important measure of disease progression.

COINFECTION: The infection of HIV/ AIDS simultaneously with another disease, usually hepatitis.

COMBINATION THERAPY: Two or more drugs or treatments used together to achieve optimum results against HIV infection and/or AIDS. Combination drug therapy has proven more effective in decreasing viral load than monotherapy (single-drug therapy). An example of combination therapy would be the use of two nucleoside analog drugs plus either a protease inhibitor or a non-nucleoside reverse transcription inhibitor.

COMMUNITY THERAPEUTIC CARE (CTC): Treatment of the majority of the severely acutely malnourished at home, focused on outreach and community mobilization to promote participation and behavioral change.

of carbohydrate metabolism characterized by elevated blood glucose (blood sugar) levels and glucose in the urine resulting from inadequate production or use of insulin. Insulin is the hormone that allows glucose to leave the bloodstream and enter body cells, where it is used for energy generation or stored for future use. Diabetes mellitus can also lead to long-term complications that include the development of neuropathy (swelling and wasting of the nerves), retinopathy (nonswelling eye disorder), nephropathy (swelling or breakdown disorder of the kidneys), generalized degenerative changes in large and small blood vessels, and increased susceptibility to infections.

DIARRHEA: Uncontrolled, loose, and frequent bowel movements caused by diet, infection, medication, and irritation or inflammation of the intestine. Severe or prolonged diarrhea can lead to weight loss and malnutrition. The excessive loss of fluid that may occur with AIDS-related diarrhea can be life threatening. There are many



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

G L O S S A R Y

Glossary

possible causes of diarrhea in persons who have AIDS. The most common infectious organisms causing AIDS-related diarrhea include cytomegalovirus (CMV), the parasites *Cryptosporidium*, *Microsporidia*, and *Giardia lamblia*, and the bacteria *Mycobacterium avium* and *Mycobacterium intracellulare*. Other bacteria and parasites that cause diarrheal symptoms in otherwise healthy people may cause more severe, prolonged, or recurrent diarrhea in persons with HIV or AIDS.

DRUG-DRUG INTERACTION: A modification of the effect of a drug when administered with another drug. The effect may be an increase or a decrease in the action of either substance, or it may be an adverse effect that is not normally associated with either drug.

DYSPNEA: Difficult or labored breathing.

ERYTHEMA: Redness or inflammation of the skin or mucous membranes.

FEVER: A rise of body temperature above the normal (98 degrees Fahrenheit).

FORTIFIED FOODS: The addition of nutrients to foods for the purpose of ensuring the nutritional equivalence of substitute foods.

GIARDIASIS: A common protozoal infection of the small intestine, spread via contaminated food and water and direct person-to-person contact.

HAART: See Highly Active Antiretroviral Therapy.

HEPATITIS: An inflammation of the liver that may be caused by several agents, including viruses and toxins. Hepatitis is characterized by jaundice, enlarged liver, fever, fatigue and abnormal liver function tests.

HIGHLY ACTIVE ANTIRETROVIRAL THERAPY (HAART): The name given to treatment regimens recommended by leading HIV experts to aggressively suppress viral replication and progress of HIV disease. The usual HAART regimen combines three or more different drugs, such as two nucleoside reverse transcriptase inhibitors (NRTIs) and a protease inhibitor, two NRTIs and a non-nucleoside

FISTULA: An abnormal passage leading from an abscess or hollow organ to the body surface or from one hollow organ to another and permitting passage of fluids or secretions.

FOOD-DRUG INTERACTION: When food affects the ingredients in a medication, preventing the medicine from working the way it should. Some nutrients can affect the way certain drugs metabolize by binding with drug ingredients, thus reducing their absorption or speeding their elimination. Taking medications at the same time as eating may interfere with the stomach and intestines absorption of medications.

FOOD SECURITY: When all people at all times have both physical and economic access to sufficient food to meet their dietary needs for a productive and healthy life. To be food secure, households and individuals need to have available food, access to food and the ability to fully utilize it once it is consumed.

reverse transcriptase inhibitor (NNRTI), or other combinations. These treatment regimens have been shown to reduce the amount of virus so that it becomes undetectable in a patients blood.

HIV: See Human Immunodeficiency Virus.

HIV DISEASE: During the initial infection with HIV, when the virus comes in contact with the mucosal surface and finds susceptible T cells, the first site at which there is truly massive production of the virus is lymphoid tissue. This leads to a burst of massive viremia, with wide dissemination of the virus to lymphoid organs. The resulting immune response to suppress the virus is only partially successful and some virus escape. Eventually, this results in high viral turnover that leads to destruction of the immune system. HIV disease is, therefore, characterized by a gradual deterioration of immune functions. During the course of infection, crucial immune cells, called CD4+ T cells, are disabled and killed, and their numbers progressively decline.

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

HIV VIRAL LOAD: See **Viral Load Test**.

HOOKWORM: A **parasitic blood-sucking** roundworm that has hooked mouth parts to fasten to the intestinal wall.

HUMAN IMMUNODEFICIENCY VIRUS: The retrovirus isolated and recognized as the etiologic (i.e., causing or contributing to the cause of a disease) agent of AIDS. HIV is classified as a lentivirus in a subgroup of retroviruses. The genetic material of a retrovirus such as HIV is the RNA itself. HIV inserts its own RNA into the host cells DNA, preventing the host cell from carrying out its natural functions and turning it into an HIV factory.

IMMUNE DEFICIENCY: A **breakdown** or inability of certain parts of the immune system to function, thus making a person susceptible to certain diseases that they would not ordinarily develop.

IMMUNE SYSTEM: The **body's** complicated natural defense against disruption caused by invading foreign agents (e.g.,

INFECTION: The **state or condition in which** the body (or part of the body) is invaded by an infectious agent (e.g., a bacterium, fungus, or virus), which multiplies and produces an injurious effect (active infection). As related to HIV: Infection typically begins when HIV encounters a CD4+ cell. The HIV surface protein gp120 binds tightly to the CD4 molecule on the cell's surface. The membranes of the virus and the cell fuse, a process governed by gp41, another surface protein. The viral core, containing HIV's RNA, proteins, and enzymes, is released into the cell.

INTERACTION: See **Drug-Drug Interaction**.

INTRAUTERINE GROWTH RESTRICTION (IUGR): A **fetus whose** estimated weight is below the tenth percentile for its gestational age and whose abdominal circumference is below the 2.5th percentile.

LESION: A **general term to describe an area** of altered tissue (e.g., the infected patch or sore in a skin disease). Nipple lesions can increase the chances of HIV transmission from infected mother to child during breastfeeding.

microbes, viruses). There are two aspects of the immune systems response to disease: innate and acquired. The innate part of the response is mobilized very quickly in response to infection and does not depend on recognizing specific proteins or antigens foreign to an individuals normal tissue. It includes complements, macrophages, dendritic cells, and granulocytes. The acquired, or learned, immune response arises when dendritic cells and macrophages present pieces of antigen to lymphocytes, which are genetically programmed to recognize very specific amino acid sequences. The ultimate result is the creation of cloned populations of antibody-producing B cells and cytotoxic T lymphocytes primed to respond to a unique pathogen.

INCLUSION/EXCLUSION CRITERIA:

The medical or social standards determining whether a person may or may not be allowed to enter a clinical trial. For example, some trials may not allow persons with chronic liver disease or with certain drug allergies; others may exclude men or women, or only include persons with a lowered T cell count.

LIPID: Any of a group of fats and fatlike compounds, including sterols, fatty acids, and many other substances.

LIPODYSTROPHY: A disturbance in the way the body produces, uses, and distributes fat. Lipodystrophy is also referred to as buffalo hump, protease paunch, or Crixivan potbelly. In HIV disease, lipodystrophy has come to refer to a group of symptoms that seem to be related to the use of protease inhibitor and NRTI drugs. How protease inhibitors and NRTIs may cause or trigger lipodystrophy is not yet known. Lipodystrophy symptoms involve the loss of the thin layer of fat under the skin, making veins seem to protrude; wasting of the face and limbs; and the accumulation of fat on the abdomen (both under the skin and within the abdominal cavity) or between the shoulder blades. Women may also experience narrowing of the hips and enlargement of the breasts. Hyperlipidemia and insulin resistance are frequently associated with lipodystrophy. Also called lipodystrophy syndrome, pseudo-Cushings syndrome.



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

G L O S S A R Y

Glossary

LOW BIRTH WEIGHT (LBW): Infant birth weight of under 2,500 g. A sensitive measure of mothers health and nutrition during pregnancy and before. The lower an infants birth weight below 2,500 g., the greater the infants vulnerability to infections and other problems and the greater the risk of sickness and death.

MALABSORPTION SYNDROME:

Decreased intestinal absorption resulting in loss of appetite, muscle pain, and weight loss. See AIDS Wasting Syndrome.

MALARIA: An infective disease caused by sporozoan parasites that are transmitted through the bite of an infected Anopheles mosquito; marked by paroxysms of chills and fever.

MASTITIS: An infection of the breast.

It usually only occurs in women who are breastfeeding their babies. In the process, unaccustomed to the vigorous pull and tug of the infants suck, the nipples may become sore, cracked, or slightly abraded. This creates a tiny opening in the breast, through which bacteria

of HIV-1s reverse transcriptase. They are quite specific; unlike the nucleoside reverse transcriptase inhibitors, the NNRTIs have no activity against HIV-2. As noncompetitive inhibitors of reverse transcriptase, their antiviral activity is additive or synergistic with most other antiretroviral agents. However drug-drug interactions may dictate dosage adjustments with protease inhibitors.

NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITOR (NRTI):

A nucleoside analog antiretroviral drug whose chemical structure constitutes a modified version of a natural nucleoside. These compounds suppress replication of retroviruses by interfering with the reverse transcriptase enzyme. The nucleoside analogs cause premature termination of the proviral (viral precursor) DNA chain. All NRTIs require phosphorylation in the host's cells prior to their incorporation into the viral DNA.

OPPORTUNISTIC INFECTIONS: Illnesses caused by various organisms, some of which usually do not cause disease in persons with normal immune systems. Persons living with

can enter. The presence of milk with high sugar content gives the bacteria an excellent source of nutrition. Under these conditions, the bacteria are able to multiply, until they are plentiful enough to cause an infection within the breast. Mastitis usually begins more than two to four weeks after delivery of the baby. Mastitis may increase the chances of HIV transmission from infected mother to child during breastfeeding.

METABOLISM: The chemical changes in living cells by which energy is provided for vital processes and activities and new material is assimilated.

MORBIDITY: The condition of being diseased or sick; also the incidence of disease or rate of sickness.

NAUSEA: A stomach distress with distaste for food and an urge to vomit.

NON-NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITORS (NNRTI): A group of structurally diverse compounds that bind to the catalytic site

advanced HIV infection suffer opportunistic infections of the lungs, brain, eyes, and other organs. Opportunistic infections common in persons diagnosed with AIDS include Pneumocystis carinii pneumonia; Kaposi's Sarcoma; cryptosporidiosis; histoplasmosis; other parasitic, viral, and fungal infections; and some types of cancers.

ORAL REHYDRATION SALTS (ORS): Carbohydrate and electrolytes combination used to treat or prevent dehydration that may occur with severe diarrhea, especially in babies and young children. Although this medicine does not immediately stop the diarrhea, it replaces the water and some important salts (electrolytes), such as sodium and potassium, that are lost from the body during diarrhea, and helps prevent more serious problems.

OSTEOPOROSIS: The loss of bony tissue, resulting in bones that become brittle and liable to fracture. Infection, injury and synovitis (inflammation of the membrane surrounding a joint), as well as prolonged exposure to microgravity, can cause osteoporosis.

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

PALLIATIVE: A treatment that provides symptomatic relief but not a cure.

PALLIATIVE CARE: Palliative care is an approach to life-threatening chronic illnesses, especially at the end of life. Palliative care combines active and compassionate therapies to comfort and support patients and their families who are living with life-ending illness. Palliative care strives to meet physical needs through pain relief and maintaining quality of life while emphasizing the patients and families rights to participate in informed discussion and to make choices. This patient- and family-centered approach uses the skills of interdisciplinary team members to provide a comprehensive continuum of care including spiritual and emotional needs.

PERIPHERAL NEUROPATHY: Condition characterized by sensory loss, pain, muscle weakness, and wasting of muscle in the hands or legs and feet. It may start with burning or tingling sensations or numbness in the toes and fingers. In severe cases, paralysis may result. Peripheral neuropathy may arise from an HIV-related condition or be the side effect of

POLYMERASE CHAIN REACTION

(PCR): A laboratory process that selects a DNA segment from a mixture of DNA chains and rapidly replicates it to create a large, readily analyzed sample of a piece of DNA. As related to HIV: a sensitive laboratory technique that can detect and quantify HIV in a persons blood or lymph nodes (also called RT-PCR). It is an FDA-approved test to measure viral load.

PROTEASE: An enzyme that breaks down proteins into their component peptides. HIVs protease enzyme breaks apart long strands of viral protein into the separate proteins making up the viral core. The enzyme acts as new virus particles are budding off a cell membrane. Protease is the first HIV protein whose three-dimensional structure has been characterized.

PROTEASE INHIBITORS (PI): Antiviral drugs that act by inhibiting the virus protease enzyme, thereby preventing viral replication. Specifically, these drugs block the protease enzyme from breaking apart long strands of viral proteins to make the smaller, active HIV proteins that comprise the virion. If the larger

certain drugs, some of the nucleoside analogs in particular.

PLACENTA: The vascular organ that unites the fetus to the maternal uterus and mediates its metabolic exchanges through a more or less intimate association of uterine mucosal with chorionic and usually allantoic tissues. During pregnancy, HIV can be passed from the mother to the fetus through the placenta.

PLUMPYNUT: An energy-dense peanut paste RUTF produced and distributed by the French company Nutriset.

PNEUMONIA (PNEUMOCYSTIS CARINII PNEUMONIA): An infection of the lungs caused by *Pneumocystis carinii*, which is thought to be a protozoa but may be more closely related to a fungus. *P. carinii* grows rapidly in the lungs of persons with AIDS and is a frequent AIDS-related cause of death. *P. carinii* infection sometimes may occur elsewhere in the body (skin, eye, spleen, liver, or heart).

104

HIV proteins assemble themselves into new functional HIV particles.

broken apart,
they
PLWHA: Person living with HIV/AIDS.

READY-TO-USE THERAPEUTIC FOOD (RUTF): Solid or paste food product

designed for the treatment of severe acute malnutrition and nutritionally equivalent to the milk-based liquid therapeutic product, which is widely used for the inpatient management of severe and moderate malnutrition during the rehabilitation phase of treatment for infants and children. RUTF is effective in promoting rapid weight gain in malnourished children.

REPLACEMENT FEEDING: See Breast Milk Substitute.

RESISTANCE: Reduction in a pathogens sensitivity to a particular drug. Resistance is thought to result usually from a genetic mutation. In HIV, such mutations can change the structure of viral enzymes and proteins so that an antiviral drug can no longer bind



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

G L O S S A R Y

Glossary

with them as well as it used to. Resistance detected by searching a pathogen's genetic makeup for mutations thought to confer lower susceptibility is called genotypic resistance. Resistance that is found by successfully growing laboratory cultures of the pathogen in the presence of a drug is called phenotypic resistance.

RETROVIRUS: A type of virus that, when not infecting a cell, stores its genetic information on a single-stranded RNA molecule instead of the more usual double-stranded DNA. HIV is an example of a retrovirus. After a retrovirus penetrates a cell, it constructs a DNA version of its genes using a special enzyme called reverse transcriptase. This DNA then becomes part of the cell's genetic material.

SECONDARY INFECTION: An infection that occurs during or after treatment of a primary infection. It may result from the treatment itself or from alterations in the immune system.

SEROCONVERSION: The development of antibodies to a particular antigen. When people

STDs have increased dramatically since the 1980s; more than 20 micro-organisms and syndromes are now recognized as belonging in this category.

THREE-DRUG THERAPY: A combination of the drugs efavirenz, lamivudine, and zidovudine (AZT).

TRANSMISSION: In the context of HIV disease: HIV is spread most commonly by sexual contact with an infected partner. The virus can enter the body through the mucosal lining of the vagina, vulva, penis, rectum, or, rarely, the mouth during sex. The likelihood of transmission is increased by factors that may damage these linings, especially other sexually transmitted diseases that cause ulcers or inflammation. HIV also is spread through contact with infected blood, most often by the sharing of drug needles or syringes contaminated with minute quantities of blood containing the virus. Children can contract HIV from their infected mothers during either pregnancy or birth, or postnatally, through breast-feeding. In developed countries, HIV is now rarely transmitted by transfusion of

develop antibodies to HIV, then seroconvert negative to antibody-positive. It may take from as little as 1 week to several months or more after infection with HIV for antibodies to the virus to develop. After antibodies to HIV appear in the blood, a person should test positive on antibody tests.

SEXUALLY TRANSMITTED DISEASE (STD): Also called venereal disease (VD) (an older public health term) or sexually transmitted infections (STIs). Sex ually transmitted diseases are infections sp read by the transfer of organisms from person to person during sexual contact. In addition to the tradition al STDs (syphilis and gonorrhea), the sp ectrum of STDs now includes HIV infection, which causes AIDS; Chlamydia trachomatis in fections; human papilloma virus (HPV) infection; genital herpes; ch ancroid; genital mycoplasmas; hepatitis B; trichomoniasis; enteric infections; and ectoparasitic diseases (i.e., diseases caused by organisms that live on the outside of the hosts body). The complexity and scope of

blood measures. blood products
TUBERCULOSIS (TB): A bacterial infection caused by *Mycobacterium tuberculosis*. TB bacteria are spread by airborne droplets expelled from the lungs when a person with active TB coughs, sneezes, or speaks. Exposure to these droplets can lead to infection in the air sacs of the lungs. The immune defenses of healthy people usually prevent TB infection from spreading beyond a very small area of the lungs. If the bodys immune system is impaired because of HIV infection, aging, malnutrition, or other factors, the TB bacterium may begin to spread more widely in the lungs or to other tissues. TB is seen with increasing frequency among HIV-infected persons. Most cases of TB occur in the lungs (pulmonary TB). However, the disease may also occur in the larynx, lymph nodes, brain, kidneys, or bones (extrapulmonary TB). Extrapulmonary TB infections are more common among persons living with HIV.

1



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

VIRAL BURDEN: The amount of HIV in the circulating blood. Monitoring a persons viral burden is important because of the apparent correlation between the amount of virus in the blood and the severity of the disease: sicker patients generally have more virus than those with less advanced disease. A new, sensitive, rapid test called the viral load assay for HIV-1 infection can be used to monitor the HIV viral burden. This procedure may help clinicians to decide when to give anti-HIV therapy or to switch drugs. It may also help investigators determine more quickly if experimental HIV therapies are effective.

VIRAL LOAD TEST: In relation to HIV: Test that measures the quantity of HIV RNA in the blood. Results are expressed as the number of copies per milliliter of blood plasma. Research indicates that viral load is a better predictor of the risk of HIV disease progression than the CD4 count. The lower the viral load, the longer the time to AIDS diagnosis and the longer the survival time. Viral load testing for HIV infection is being used to determine when to initiate and/or change therapy.

VIRAL REPLICATION: There are generally six steps that take place in viral replication. Adsorption (attachment to the host cell), penetration, uncoating, genome replication (viral synthesis), maturation, and release.

WASTING SYNDROME: See AIDS Wasting Syndrome.

YEAST INFECTION: See Candidiasis.





Community Therapeutic Care (CTC): A new approach to managing acute malnutrition in emergencies and beyond

Caroline Grobler-Tanner and Steve Collins

Traditionally, the management of severe acute malnutrition (SAM) in emergencies includes setting up therapeutic feeding centers (TFCs). Over the last decade, the focus has been on the attainment of acceptable minimum standards of mortality. Recovery and clinical outcomes in TFCs managed by experienced agencies has been positive. However, TFCs have critical limitations; they are difficult to establish, expensive to operate, and they often have very limited coverage. Furthermore, TFCs do not build on the capacity of the community, and at times, they can undermine traditional coping strategies. Mothers or caregivers are often required to stay with their malnourished children for three weeks or longer in the TFC. Such a demand has tremendous opportunity costs and disrupts family life. Moreover, the congregation of people in and around feeding centers can lead to the spread of infection, an important cause of increased morbidity and mortality in an already...

Technical notes

already
weakened
population.

Despite technical advances in the management of SAM¹, including the implementation of national protocols in many countries, there are important gaps between projected numbers of SAM and the capacity of existing mechanisms to respond effectively. For example, UNICEF projections in Ethiopia in 2003 showed an estimated 60,000 severely malnourished children with less than 30% of these treated in some regions. Projections in Southern Africa in 2003 showed a similar situation with significant increases in SAM partly attributed to the high prevalence of pediatric HIV/AIDS.²

Community Therapeutic Care (CTC) is a new approach to managing acute malnutrition in emergencies and beyond. Conceived by Valid International, CTC seeks to address some of the challenges that traditional center-based approaches face.³ It aims to provide rapid, effective, low cost assistance that is least disruptive to affected communities and builds a foundation to link relief and development interventions for long-term solutions to food insecurity and threats to public health. CTC aims to treat the majority of the severely malnourished at home, build local capacity to better manage care of acutely malnourished children, and address repeated cycles of relief and recovery.

This technical note responds to the frequently asked questions associated with CTC. It describes the CTC approach, implementation, and the role of Ready to Use Therapeutic Food (RUTF). It summarizes results to date and outlines ongoing and planned activities.

¹ World Health Organization (WHO), *Management of Severe Malnutrition in Emergencies: A Manual for Physicians and Other Senior Health Workers* (Geneva: 1999); and Ann Ashworth and Ann Burgess, *Caring for Severely Malnourished Children* (Oxford: Macmillan Education and TALC, 2003).

² United Nations Country Team, *Focus on Ethiopia*, September 3, 2003; and Claudia Hudspeth, *HIV/AIDS and severe malnutrition in Community based approaches to managing severe malnutrition*, Report on the proceedings of an inter-agency workshop, Dublin, 8-10 October, 2003 (Emergency Nutrition Network, February 2004).


³ Steve Collins, *Changing the way we address severe malnutrition during famine*, *The Lancet* 358 (2001): 498-501.



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Acronyms and Technical Terms

Acute malnutrition WFH <-2 Z scores or	WHM < 80% and/or bilateral edema
CTC	Community Therapeutic Care (encompassing SC, OTP, SFP, RUTF local production, community mobilization and integrated programming)
CSAS	Centric systematic area sampling
F75	Milk-based product designed for initial (phase 1) treatment of severely malnourished children
F100	Milk-based product designed for rehabilitation (phase 2) of severely malnourished children
HT (HBT)	Home treatment (home based treatment)
IMCI	Integrated Management of Childhood Illness
MAM	Moderate acute malnutrition (WFH >-3 Z scores and <-2 Z scores or WHM > 70 and < 80% median)
MU AC	Mid Upper Arm Circumference
NGO	Non-governmental Organization
NRU	Nutritional Rehabilitation Unit
OTP	Outpatient Therapeutic Program (treatment at home with weekly follow up)
Phase 1	The initial phase in the treatment of severe acute malnutrition, sometimes called stabilization phase



Phase 2	The rehabilitation phase in the treatment of severe acute malnutrition.
RUTF	Ready to Use Therapeutic Food
SAM	Severe Acute Malnutrition (WFH <-3 Z scores or WHM <70% and /or bilateral edema)
SC	Stabilization Center
SFP	Supplementary Feeding Program
TFC	Therapeutic Feeding Center
WFH	Weight for Height
WHM	Weight for Height % of the median
WHO	World Health Organization



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

1. What is Community Therapeutic Care (CTC).

The CTC approach treats the majority of the severely acutely malnourished at home and focuses on outreach and community mobilization to promote participation and behavioral change. Central to the home-based care of the severely acutely malnourished is the provision of appropriate therapeutic foods containing the right mix of nutrients that will aid in treatment and rehabilitation. Ready to Use Therapeutic Foods (RUTF) have been specially designed for this purpose.

CTC adopts a public health approach to managing acute malnutrition that aims to maximize impact and coverage. The CTC approach facilitates access and coverage by bringing services closer to the household, rather than waiting for caregivers to bring malnourished children to a center. This is in contrast to standard inpatient center-based programs

Sectoral integration: integrates with other programs, including health and nutrition education, promotion of exclusive breastfeeding, hygiene promotion, food security interventions, and conflict resolution programs.

Capacity building: builds on existing structures through collaboration, training, and ongoing support, rather than establishing parallel systems.

The CTC approach combines three modes of care and treatment:

1. Supplementary Feeding Program (SFP): dry take-home ration for children with moderate acute **malnutrition without complications** (e.g., **anorexia, life threatening illness**).
2. Outpatient Therapeutic Program (OTP): home-based treatment and rehabilitation with a specially formulated

center-based programs that focus on medical care and hence can only manage limited numbers. The CTC approach increases impact by addressing the needs of the greatest number of acutely malnourished children throughout an entire community.

CTC has four basic principles:

Access and high coverage: uses a decentralized distribution system for easier access and large numbers of outreach workers and community volunteers to follow up outpatients in their homes.

Timeliness: provides services and initiates active case finding before the prevalence of malnutrition escalates. CTC aims to treat acute malnutrition before additional medical complications occur.

iated
 RCTE
 two weekly basis, medical treatment
 provided using simplified medical protocols,
 on a regular follow-up for children
 with severe acute malnutrition
without complications. OTP is
 implemented through a large number
 of decentralized points using the
 existing health infrastructure.

3. Stabilization Centers (SC): inpatient care, also known as phase 1 treatment, for acutely malnourished children with medical complications and no appetite using standard WHO/IMCI protocols.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

⁴Steve Collins and Roger Yates, The need to update the classification of acute malnutrition, letter in The Lancet 362 (2003): 249.

⁵World Health Organization (WHO), Management of severe malnutrition: A Manual for Physicians and Other Senior Health Workers (Geneva: 1999).

4

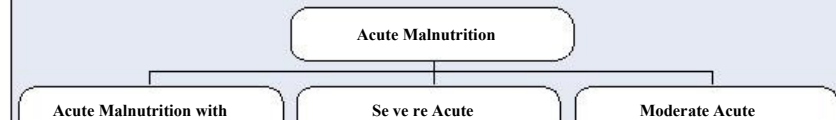
2. Why does implementation of the CTC approach propose an update in the classification of acute malnutrition.

Implementation of the CTC approach resulted in a proposal to update the classification of malnutrition. ⁴The current WHO classification consists of moderate and severe categories, defined according to anthropometry and the presence of bilateral pitting edema. ⁵This is appropriate and relevant for inpatient TFCs for severe acute malnutrition and outpatient SFPs for moderate acute malnutrition. However, the CTC approach has three

modes of treatment, as described in the previous section. A new system of classification differentiates malnutrition with complications, from severe acute and moderate acute malnutrition without complications, as shown in Figure 1.

Acute malnutrition with complications can arise in either severely or moderately malnourished children. In practice, whether malnutrition is complicated dictates whether children are admitted for inpatient care in SCs or treated as outpatients in the OTP. Admitting children with severe malnutrition without complications into TFCs has potentially

Figure 1. Suggested Classification and Treatment System for Acute Malnutrition



Complications

< 80% of median WFH (< -2 SD-score) OR
 bilateral pitting edema OR
 mid-upper arm circumference <110 mm AND one of the following:
 Anorexia
 Lower respiratory tract infection
 High fever
 Severe dehydration
 Severe anemia
 Not alert

Inpatient
IMCI/WHO Protocols

Malnutrition without Complications

< 70% of median WFH (< -3 SD-score) OR
 bilateral pitting edema OR
 mid-upper arm circumference <110 mm AND:
 Appetite
 Clinically well
 Alert

Outpatient
Therapeutic Care

Malnutrition without Complications

70-80% of median WFH (< -3 SD-score to < -2 SD-score) AND no edema
OR
 mid-upper arm circumference 110-125 mm AND :
 Appetite
 Clinically well
 Alert

Outpatient
Supplementary Feeding

Adapted from The need to update the classification of acute malnutrition, *The Lancet* 362 (2003): 249.

Notes on the classification:

1. WHO/IMCI does not have a category for moderate malnutrition with complications. WHO contends that there is no need to stabilize children with moderate acute malnutrition, even if they have complications.
2. This classification does not take into account the different grades of edema. Some agencies have treated children with grade 1 (i.e., edema +) and no other complications in the malnutrition-without-complications category and children with grades 2 and 3 (i.e., edema ++ and edema +++) in the malnutrition-with-complications category. Others have treated all cases with edema, irrespective of grade, as malnutrition with complications, requiring admission to center-based phase 1 treatment. This area needs further research and clarification.



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

adverse consequences both for patients and the management of emergency nutrition programs. It needlessly exposes them to additional risks of cross-infection and forces the caregiver to spend time away from family and daily activities. At the same time, admitting children who do not need inpatient care leads to overcrowding in TFCs, reduces the impact of treatment interventions and increases unit costs. By contrast, not admitting cases of moderate malnutrition with complications for inpatient care is likely to increase morbidity and mortality and decrease the effect of emergency nutrition programs.

3. How is the CTC approach implemented.

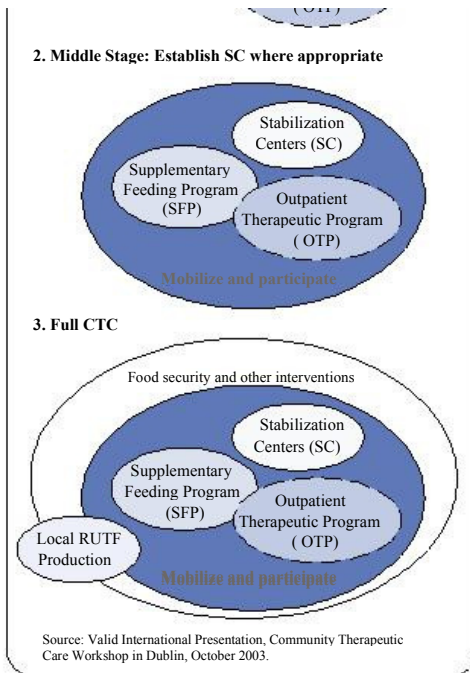
The planning stage involves dialogue with target communities and local authorities to ensure sensitization and agreement regarding the aims and methods of the program, admission criteria and screening and location of distribution sites.

Initially, an SFP is established rapidly. An OTP program is added to the SFP, and all severely acutely malnourished children enrolled in the OTP receive RUTF and are treated using simple medical protocols on a routine basis. Children return weekly or, in some cases, every two weeks for monitoring. The OTP can be set up in a few days. This initial implementation stage is accompanied by increased focus on community mobilization to increase participation and understanding of the program. In the middle stage, SCs

Figure 2: Evolution of the CTC Program

1. Initial Stage: Decentralized SFP and OTP





with improved and strengthened to provide individual care for malnourished children with complications. New SCs are established where no previous infrastructure exists only when absolutely necessary, and after basic SFP and OTP services are up and running.

The final stage of full CTC involves extensive use of volunteer community mobilizers working with employed outreach workers. These volunteers and outreach workers follow up malnourished children at home, provide support, encourage return of defaulters, and actively find new cases. Efforts are made to integrate the program with other sector programs, as well as initiating the local production of RUTF where appropriate. Figure 2 shows how a typical CTC program evolves over time.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

⁶Emmanuelle Lurqin, Ambulatory treatment of severe malnutrition in Afghanistan, *Field Exchange* 19 (2003).

⁷Caroline Grobler-Tanner and Steve Collins, Review of CARE *Indonesia Emergency Community Nutrition Program* (Washington, D.C.: Food and Nutrition Technical Assistance Project, Academy for Educational Development, 2004).

⁸Carlos Navarro-Colorado et al., Therapeutic Feeding Centres for severe malnutrition, letter in *The Lancet* 359 (2002): 259-60.

6

⁹El Hadji Issakha Diop et al., Comparison of the efficacy of a solid ready to use food and a liquid milk-based diet for the rehabilitation of severely malnourished

4. What is the difference between CTC and home-based treatment (HBT).

Home-based treatment (HBT) is a generic term used to refer to the treatment of malnourished children at home. It has often been used to refer to the treatment at home in the rehabilitation phase (i.e., phase 2) following phase 1 inpatient care in a TFC. In some cases, the terms CTC and HBT have been used interchangeably. However, it is acknowledged that there is a distinction between CTC and HBT in terms of principles, objectives, and implementation strategies.

Several organizations have been piloting ways to treat severe malnutrition at home. These HBT models have been called home treatment, ambulatory treatment,⁶ and community feeding centers⁷ and differ from CTC in that they essentially see treatment at home as a progressive development from the TFC to

5. What is Ready to Use Therapeutic Food (RUTF).

Ready to Use Therapeutic Foods (RUTF) are specifically designed for the treatment of severe acute malnutrition. Currently, there are two commercial RUTF products available: an energy dense peanut paste called Plumpynut that is produced and distributed by the French company, Nutriset, and a bar called BP100 made by Compact, Denmark. Both of these products are nutritionally equivalent to the F100 milk-based therapeutic product, which is widely used for the inpatient management of severe and moderate malnutrition during the rehabilitation phase of treatment for infants and children.

RUTF has significant advantages over liquid based diets. The paste is oil-based with low water activity and, as such, can be stored at home with little risk of microbial contamination. It is easily used at home

malnourished

Children Journal of Clinical Nutrition 78 No. 2 (2003): 302-07.

¹⁰Cost figures from Nutriset, France as of March 2004. The precise cost varies according to exchange rates and location. The cost does not include transportation. The proportional cost of the RUTF in a given CTC program varies considerably according to site (40-80% of the cost of treatment/beneficiary) and the use of imported or local RUTF.

to

the emergency strategies should be developed from the existing TFC model. ⁸By contrast, CTC is predicated upon the public health principle of maximizing program impact and cost effectiveness through access and high coverage. These differences in underlying principles can have important practical consequences. CTC programs engage primarily at the community and household level before adding SCs for the small proportion of children that require it.

home

digestible and popular among sick and malnourished children and adults. RUTF is effective in promoting rapid weight gain in caregivers and malnourished children. ⁹Plumpynut contains ground, cooked peanuts, oil, sugar, powdered milk, and a multi-micronutrient mix. Most CTC projects use imported Plumpynut, which is packed in foil wrapped sachets of 92g/ or 500 kcal/sachet with a shelf life of up to 18 months. Plumpynut costs approximately \$3500/MT.¹⁰

The high cost of the imported RUTF is a significant barrier to the wide-scale implementation of CTC. To overcome this barrier, the CTC program currently promotes local production of RUTF. Local production of RUTF has been successful in Malawi. The cost of the local version is about half that of the imported version. The locally produced RUTF



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

follows the same recipe as original Plumpynut and is packed in 250g plastic jars with a shelf life of up to six months. Comparison efficacy studies demonstrate that the locally produced RUTF is nutritionally equivalent to the imported version.¹¹

6. What are the results from the CTC program to date.

To date, CTC programs have treated over 7000 children in Sudan, Ethiopia, and Malawi.¹² Results from CTC interventions have shown lower mortality rates, fewer drop-outs and better coverage than standard center based approaches. CTC programs have also shown that implementing many decentralized distribution and monitoring access points instead of a

few inpatient TFCs results in better coverage and is preferable to caregivers and communities, as demonstrated by anthropological studies conducted in Malawi and Ethiopia.¹³ The CTC approach demonstrates that when people have easier access to services and sufficient information, they tend to present to the program earlier, often before serious complications arise. The CTC program has demonstrated that children suffering from severe acute malnutrition without complications can be safely treated at home. Results from four completed pilot programs in Ethiopia and Sudan show that mortality rates have met Sphere minimum standards. Cure and default rates also met Sphere standards in three out of four programs.¹⁵ Interim data from ongoing CTC programs in Malawi and Ethiopia suggest similar outcomes.

¹¹Heidi Sandige et al., Locally produced and imported ready-to-use food in the home-based treatment of malnourished Malawian children, Journal of Pediatric Gastroenterology Nutrition (2004) In press.

¹²Data from Valid-supported CTC programs in Ethiopia, Sudan, and Malawi, 2000-2003.

¹³Chiwoza Bandawe and Nellie Kabwazi, *Cultural and social factors affecting the implementation and success of the CTC approach to treating severe malnutrition in Dowa, Malawi.* (Oxford: Valid International, 2003).

¹⁴Saul Guerrero, *The cultural and social factors affecting implementation and success of the*

The CTC Program

The CTC program is a multi-donor funded two-part program managed by Valid International, a U.K.-based organization specializing in operational research in emergencies. CTC is implemented in North and South Sudan, Malawi, and Ethiopia by NGOs including Concern Worldwide and Save the Children/U.K., Tearfund, and Save the Children/U.S. A multi-disciplinary team working under the direction of Valid International is conducting operational research to monitor the effectiveness of CTC in different contexts.

Since early 2003, USAID's Bureau for Democracy, Conflict and Humanitarian Assistance/Office of U.S. Foreign Disaster Assistance (DCHA/OFDA) and the Bureau of Global Health have been supporting FANTA to work with Valid International and its partners to conduct studies in the proof of concept phase.¹⁶ The findings of these studies will better inform donors and program managers about the merits and limitations of the CTC approach. Currently the CTC program is focusing on the expansion, development and refinement of the CTC approach. Details of the CTC program can be found at www.fantaproject.org.

Valid, Ethiopia (Oxford: Valid International, 2003).
 in
 Sadler, Outpatient care for severely malnourished children in emergency relief programmes: a retrospective cohort study, *The Lancet* 360 (2002): 1824-1830.

¹⁶Studies supported by FANTA in Year 1: a) Investigation of the alternative formulations of RUTF; b) Ethiopia study of lessons learned through implementation of CTC in a large-scale emergency; c) Malawi study of standard of care for the severely malnourished provided through Nutritional Rehabilitation Units (NRUs) compared with outpatient treatment using locally produced RUTF.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

¹⁷Length of stay used in CTC programs is calculated using 85% WHM as discharge criteria. This is higher than the WHO criteria for discharge using 80% WFM). Some OTP programs only discharge every 2 weeks which also biases data.

¹⁸The Sphere Project, *Sphere Humanitarian Charter and Minimum Standards in Disaster Response, Revised edition* (2004).

¹⁹Guerrero, *ibid*.

²⁰ Anna Taylor and Kate Sadler, *Program evaluation of SC UKs emergency feeding program, North Darfur, September-December 2002*. (Valid International and Save the Children UK: April 2003).

8

²¹ Wim Van Damme and Marleen Boelaert, *Medical assistance to self-settled*

Average rates of weight gain in CTC programs are between 4.4-7.6 g/kg/day, which is lower than the international minimum standards (>8 g/kg/day). Lengths of stay are between 36 and 80 days ¹⁷ and are longer than the international recommendations of 30 to 40 days. ¹⁸Since severely malnourished children are vulnerable to infection, rapid recovery and high rates of weight gain have traditionally been seen as important features of successful treatment and rehabilitation programs. However, in outpatient programs, severely malnourished children are not removed from their home environment and are not congregated together. This means that exposure to infection and the risks associated with treatment are likely to be lower than in TFC/NRUs making the rate of recovery a less important determinant of program success. Rate of weight gain is dependant upon the amount of RUTF eaten by the specific child, as well as the absence of infection and positive caring and feeding practices

assessing project coverage, known as centric systematic area sampling (CSAS). This method has been field tested in Malawi to compare coverage of the CTC project in Dowa district with that of traditional TFC operating in the neighboring district. The field trial study estimated CTC program coverage at 74 percent and TFC coverage at 26 percent. The study also found that participants of the CTC program were more fairly spread throughout the district, whereas participants of the TFC program were clustered around the TFCs. ²²

Comparisons to date between CTC and TFCs in Sudan and Malawi strongly suggest that CTC achieves greater impact than TFCs:

Mortality rates (between 10 and 50 percent of those seen in TFCs.)

Default rates (between 10 and 50 percent of those in TFCs.)

refugees in
[Ghana](#) (2002): 260-1.

²²Mark Myatt et al., A field trial of a survey method for estimating the coverage of selective feeding programs, [Bulletin of the World Health Organization](#) (2004) In press.

²³Sphere key indicators for the correction of severe malnutrition: Mortality <10%; recovered is >75% and defaulted is >15%. Coverage is > 50% in rural areas, > 70% in urban areas, and > 90% in camp situations. Sphere Project, *Sphere Humanitarian Charter and Minimum Standards in Disaster Response*. Revised edition (2004).

²⁴Mark Manary, Home-based Therapy for severe malnutrition with ready to use food, [Archives of Disease in Childhood](#) (2004). In press.

practices.
 Caregivers of children with high rates of weight gain are teamed with those not as well to curtail sharing and improve feeding practices. This has been shown to positively influence outcomes. ¹⁹

Coverage is a key determinant of impact in any humanitarian inter vention. Initially, coverage in the CTC projects was assessed using standard Expanded Program of Immunization (EPI) methods. Using this method, coverage of a CTC program in North Sudan was found to be up to three times greater than coverage estimations for a TFC project operating in the same location, ²⁰and much higher than those usually reported for TFC projects. ²¹However, EPI methods for coverage assessment yield wide confidence intervals, rendering them meaningless. The CTC program has therefore developed a new direct method of

Coverage rates (two to five times greater than TFCs). ²³

Results from HBT programs conducted as part of the CTC program also show positive outcomes. A pilot study in Malawi demonstrated the efficacy of HBT programs using RUTF at home for the severely malnourished after a period of initial inpatient/stabilization in an urban based referral hospital Nutrition Rehabilitation Unit (NRU). ²⁴Two current studies in Malawi aim to test whether HBT is feasible in rural-based NRUs and in an urban-based NRU attached to a central referral hospital with very high HIV/AIDS prevalence. Results to date suggest that treatment at home with RUTF in the rehabilitation phase (i.e., phase 2) after a period of stabilization can be effective. The rural-based study comparing the



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

standard of care (i.e., receiving treatment according to national and WHO protocols)²⁵ in seven rural NRUs and HBT using RUTF found that children receiving RUTF at home were more likely to reach their target weight, less likely to die, had greater rates of weight gain, and less fever, cough, and diarrhea than those in standard care.²⁶ Similarly, a switch to HBT in phase 2 in the urban-based study at the Blantyre Queen Elizabeth Hospital NRU has been associated with a reduction in mortality.²⁷ These findings demonstrate that HBT using RUTF may be successfully used to address acute malnutrition within existing systems. However, challenges remain in expanding coverage and following up defaulters these programs.

7. Is the CTC approach cost-effective.

Most of the CTC programs are either ongoing or have only recently been

severely malnourished children with few additional capital or fixed costs. In addition, CTC programs have scope to develop from an emergency intervention to a long-term program. As such, the costs to date can be seen as an investment in structures and processes that will allow for a more sustainable program to treat severely malnourished children.

An important feature of CTC is that the burden of costs falls more on the implementing agency and less on the program beneficiary. Traditional center-based programs often incur significant costs for to caregivers and families of enrolled children primarily because caregivers are removed from their families for up to a month, in order to stay with the child in the TFC. Siblings of the malnourished child are often deprived of care for this period. Furthermore, the caregiver is unavailable to work in the fields or participate in other income-generating activities. The costs to beneficiaries and their

²⁵The standard of care is inpatient treatment in the NRU using F75 and F100 followed by blended foods in the rehabilitation phase according to national protocols. Quality of the standard of care varies considerably by NRU. See WHO's Management of severe malnutrition: a manual for physicians and other senior health workers (Geneva: 1999); and UNICEF's National protocols for the management of severe malnutrition (UNICEF Malawi: 2003).

²⁶ Mark Manary and Heidi Sandige, Home-based therapy with RUTF in Malawi, *Field Exchange* 21 (2004).

9

²⁷ Anne Nesbitt, Home-based program at Blantyre Central Hospital. Presentation at the Community Based Approaches to Managing Severe

concluded, and there are presently limited data available. Full cost analysis will need to be conducted once programs have been completed. Preliminary cost data for the CTC programs operated by Concern Worldwide in Sudan, Malawi, and Ethiopia suggest that cost per beneficiary is \$250-\$400, which compares favorably with TFC programs.²⁸ The CTC and TFC approaches differ with regard to the potential for economies of scale. The TFC model is a fixed capacity model once a center is full, other centers must be built involving similar additional capital expenditure.

The CTC approach has high initial capital costs, which include recruiting and training mobile teams, transportation, instituting decentralized logistics for food, and mobilizing the population. However, once these are in place, the approach has the potential to treat large numbers of

users. The CTC model. Thus, any comparative cost analysis of the CTC and TFC approaches must also take into account the opportunity costs for the household and communities of program beneficiaries.

Malnutrition Workshop, Dublin, October 8-10, 2003 (Emergency Nutrition Network, February 2004).

²⁸Cost analysis from European Commission Humanitarian Office (ECHO) per program grant shows the cost of treating acute malnutrition is between \$300 and \$600/beneficiary/month in Community based approaches to managing severe malnutrition. Report on the proceedings of an inter-agency workshop. Dublin, 8-10 October, 2003. (Emergency Nutrition Network, February 2004).

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

²⁹Community based approaches to managing severe malnutrition. Report on the proceedings of an inter-agency workshop. Dublin 8-10 October, 2003. (Emergency Nutrition Network, February 2004).

10

Workshop on community approaches to managing severe malnutrition: Dublin, Ireland, October 2003

In October 2003, Concern Worldwide and Valid International organized a workshop in Dublin, Ireland. The workshop brought together key players around the management of severe malnutrition, including implementers of CTC and HBT, as well as technical advisors, academics, bilateral donors, and multilateral agencies. The objectives were to compare lessons learned after three years implementation experience, compare similarities and differences in CTC and HBT protocols among agencies, and identify knowledge gaps. ²⁹


The workshop highlighted several areas that require further discussion and research, including:

Detailed cost analysis comparing CTC/HBT and standard center-based approaches;

Determination of appropriate nomenclature for CTC and HBT;

Determination of where, when, and in which context CTC/HBT is appropriate or not;

The wider use and implications of RUTF for people living with HIV/AIDS and for use in replacement feeding;



Documentation of the lessons learned, challenges, and implications of transition and handover to Ministries of Health and communities; and

Development of treatment protocols for infants less than 12 months in CTC programs and for patients with edema.

For more information, visit the FANTA website at www.fantaproject.org.



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

8. What are the ongoing and planned activities.

Given the promising results to date, the CTC program will build on acquired knowledge and experience and expand implementation. This will include:

Rolling out CTC: CTC will be expanded in a controlled manner to explore and test various modes of replication and scaling up. It is necessary to ensure that new agencies and partners adopting the CTC approach have sufficient technical expertise for implementation. Initially, CTC will be rolled out in Malawi and Ethiopia.

Refining CTC concepts: This includes further developing the community empowerment aspects of CTC to enhance impact and reduce costs. It also includes refining new methods for assessing coverage and prevalence of malnutrition and case finding.

suggests that CTC is a viable approach for the treatment and support of HIV infected and affected children, adults, households and communities. Valid International, FANTA and SARA/AED are exploring CTC as an entry point to HIV/AIDS care in Malawi.³⁰

Development and dissemination of guidelines and protocols: CTC guidelines detailing protocols and experience learned to date will be developed. The guidelines and protocols will be published as a manual, and training workshops are planned.

³⁰FANTA and SARA projects at AED and Valid International are conducting a study in Malawi to examine how the CTC approach can be used to support HIV/AIDS infected and affected individuals, households, and communities. This study is supported by USAID.

Expansion of local production and testing of alternative formulations of RUTF: This includes testing alternative formulations of RUTF that do not contain peanuts or milk but have a comparable nutritional composition to Plumpynut. Avoiding peanuts will reduce the risks of aflatoxin contamination and allergic reactions and eliminating milk powder from the formulation should reduce the cost. This also includes supporting the local production of RUTF and in-country distribution mechanisms as well as linking local production of RUTF to food security, agriculture, and micro-enterprise programs.

Using CTC as an entry point to support other interventions: CTC can be an entry point into communities to enhance the credibility of other public health/food security interventions such as community-based care for people living with HIV/AIDS. Experience to date

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

In summary, experience to date has shown that CTC:

Provides a promising alternative approach for selective feeding in emergencies and transition programming;

Meets or exceeds mortality, default and recovery rates against Sphere minimum standards;

Achieves high impact in terms of coverage;

Is well accepted by beneficiary communities and local and national authorities;

Appears to be cost-effective in comparison to TFC/NRU approaches; and

Differs in guiding principles from the standard TFC/NRU approaches used to date.

The emphasis in CTC approach is to start in the community and obtain high coverage first. The addition of coverage in the Sphere minimum standards for emergency nutrition programs reflects this public health impact perspective.

31

For more information about Community Therapeutic Care visit:

www.fantaproject.org

www.validinternational.org

www.concern.ie

www.annexline.net



Food and Nutrition
Technical Assistance Project
Academy for Educational
Development
1825 Connecticut Ave., NW
Washington, D.C. 20009-5721
Tel: 202-884-8000
Fax: 202-884-8432
E-mail: fantaproject@aed.org
<http://www.fantaproject.org>

This publication was made possible through the support provided to the Food and Nutrition Technical Assistance (FANTA) Project by the

www.enhonline.net

About the Authors

Caroline Grobler-Tanner is Health and Nutrition Emergency Advisor for the FANTA Project and Dr. Steve Collins is Director of Valid International.

Office of Health, Infectious Disease and Nutrition of the Bureau for Global Health at the U.S. Agency for International Development, under terms of agreement No. HRN-A-00-98-00046-00 awarded to the Academy for Educational Development (AED). The opinions expressed herein are those of the authors and do not necessarily reflect the views of the U.S. Agency for International Development.

Recommended citation:

Grobler-Tanner, Caroline, and Collins, Steve. *Community Therapeutic Care (CTC): A new approach to managing acute malnutrition in emergencies and beyond*. Washington, D.C.: Food and Nutrition Technical Assistance Project, Academy for Educational Development, 2004.

³The Sphere Project, *The Sphere Humanitarian Charter and Minimum Standards in Disaster Response*. Revised edition (2004).



Program Graduation and Exit Strategies: A Focus on Title II Food Aid Development Programs

Beatrice Lorge Rogers and Kathy E. Macas

The goal of an exit strategy is to ensure sustainability of program impacts after the program has ended. Exit refers to the withdrawal of all externally provided program resources from the entire program area. Graduation refers to the withdrawal of resources from selected communities, program sites or program activities. This technical note provides an overview of different approaches to graduation and exit, describes the components of an exit strategy, and offers recommendations for design and

Technical notes

recommendations for designing and implementing effective exit strategies, with

Different types of program activities and different conditions in the programming environment call for different approaches to graduation and exit strategies. Exit approaches include phasing over program activities to communities or other institutions for activities requiring continued inputs, and phasing out resources for activities that are permanent or self-sustaining. Generating alternative resources from the community or from external sources to continue activities is often a critical component of sustainable exit. Exit strategies for food-based programs require careful analysis of whether continuation of food is required, and if so, identification of the source of food.

A clearly defined exit strategy involves identifying:

1. exit approaches to be used;
2. criteria for exiting;
3. measurable benchmarks of progress in meeting the criteria;
4. a time line for the exit process;
5. action steps and responsible parties; and
6. mechanisms to assess progress.

Establishing and maintaining clear communication with communities about the exit process helps lead to successful exit and sustainable program impacts. Post-program evaluation is a valuable tool for understanding the sustainability of program outcomes and for improving the design and implementation of exit strategies.



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Key Concepts and Terms

The term **graduation** refers to the withdrawal of program resources (food, other material resources, technical assistance) from specific program sites or activities.

Exit refers to the withdrawal of all externally provided program resources from an entire project area.

An **exit strategy** for a program is a plan describing how the program intends to withdraw its resources while assuring that the achievement of development goals is not jeopardized and that progress towards these goals continues. An exit strategy may use graduation from specific project areas as steps towards the eventual total withdrawal of resources, or exit may take place at one time across the entire program area. In both cases, the underlying goal of an exit strategy is to ensure sustainability of program impacts after a program ends.

An exit strategy includes the following elements:

1. Identification of approaches to be used for different program components;
2. Specific criteria for graduation (of communities) and exit (of the program from the region);
3. Measurable benchmarks for assessing progress toward meeting the criteria;
4. A time line, recognizing flexibility may be required;
5. Identification of action steps to reach the stated benchmarks and identification of parties responsible for taking these steps; and
6. Mechanisms for periodic assessment of progress toward exit and for possible modification of the exit plan.

Sustainability of impact or of progress toward development goals does not necessarily mean continuation of the same activities carried out by the PVO under the original program. In some cases communities, individuals, or other organizations sustain impacts through actions that are different from the program activities. In other cases, very few or no explicit activities are needed to sustain impact. Different types of program activities lend themselves to different approaches to assuring sustainability.

List of Acronyms

BCC Behavior Change Communication
CBO Community Based Organization
CHW Community Health Worker
CSR4 Cooperating Sponsor Results

Report

 and
DAP Development Assistance Program
 Request
FANTA Food and Nutrition Technical
 Assistance
M&E Monitoring and Evaluation
MCHN Maternal and Child Health and
 Nutrition
MOH Ministry of Health
NGO Non-Governmental Organization
PVO Private Voluntary Organization
USAID United States Agency for
 International Development
WFP World Food Program

In their review of exit strategies, Levinger and McLeod (2002) identify three approaches to exit: **phase down**, **phase over** and **phase out**. They point out that **phase down**, the gradual reduction of program inputs, is the preliminary stage to both phase over and phase out.

Phase over refers to the transfer of responsibility for activities aimed at accomplishing program goals (current activities, or other activities aimed at achieving the same outcomes) to another entity. Many Title II development programs identify capacity building within communities as the main mechanism for ensuring sustainability. This approach is a type of phase over, with a transfer of respon-

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

sibility to community individuals or groups supported by the Title II program. Phase over may also involve the transfer of responsibility for achieving program outcomes to an existing organization (e.g., a branch of local, regional or national government, a local or indigenous national NGO, or another international PVO or donor).

Phase out refers to the withdrawal of program inputs (food, service provision, other resources, technical assistance) without making explicit arrangements for the inputs or activities to be continued by any other entity, because the program itself resulted in changes that are likely to be sustainable without these.

Exit Approaches

Whether to use the phase over or the phase out approach depends largely on the nature of the program activities. Interventions that require specific activities to continue and an entity to take responsibility for implementing or overseeing the activities require a phase

is unlikely to succeed in sustaining program impact. Appropriate exit strategy planning early in the design and implementation of a program can help to avoid this situation.

The types of program activities and conditions in the program environment can dictate exit approaches:

- 1) Some program changes are self-sustaining; once they are achieved, outside inputs can be discontinued, but the impact of the changes continues. Such program components suggest a phase out approach.
- 2) When the community is capable of taking over program activities, either through community groups and organizations or through key individuals, responsibility for activities can be transferred to the community. This is one type of phase over approach.
- 3) In some cases other institutions (e.g., local, municipal, state, or national government, indigenous NGOs, or possibly other NGOs or donors) are well-positioned

over approach. Interventions that are designed in communities and do not require the ongoing provision of services or resources are suitable for phase out.

Other factors that affect the decision whether to use a phase over or phase out approach include the time frame for exit, available funding, and available human, institutional, financial and physical resources. The programs time frame should be planned to allow for implementation of a feasible exit plan. Program implementers should take responsibility for working with communities and other stakeholders to ensure that appropriate resources are available for activities that need to continue.

When programs have an exit strategy, exit often consists of abrupt withdrawal of program resources following termination of program funding. Deciding to phase out rather than phase over simply because there is no time left for appropriate capacity building, or because resources have not been identified for implementation of activities that need to continue

and are designed at achieving program goals. This is a different type of phase over approach. to take over activities

Permanent and self-sustaining changes:
Phase out.

A variety of types of program activities can yield changes that are self-sustaining. Examples of such changes include outcomes related to the construction of infrastructure, behavior change, improved production and marketing practices in agriculture, and microenterprise.

Infrastructure changes that are frequently the focus of development projects include the construction of roads, latrines, wells or piped water systems, water retention structures, watershed improvements and reforestation. The construction of infrastructure, while seemingly permanent, often requires maintenance over time, and planning for sustainability may involve the creation or strengthening of community groups to take responsibility for the maintenance of infrastructure. In these cases, the exit strategy includes both reliance

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

on the permanence of the change and the phase over of maintenance responsibilities to community organizations or individuals for maintenance of the infrastructure.

Behavior changes related to health, nutrition and child caring practices can become permanent without requiring continued efforts or activities. These changes are likely to be self-sustaining among those who receive education and behavior change communication (BCC) if the benefits are perceptible and the changes feasible. If the goal of the program is to continue expansion of beneficial changes after program exit, systems for further dissemination may need to be put in place as part of the exit strategy. Such systems may depend on community health workers (CHWs) or health volunteers trained as part of the program, with support from the public health system, or they may depend on informal networks of mothers interacting with other mothers in their communities. In either case, some mechanism for maintaining motivation and for refresher training is likely to be needed.

Another type of intervention that can produce self-sustaining changes without the need for continued outside inputs or activities is the establishment of improved agricultural production and marketing practices or other economically profitable activities such as agricultural diversification. If practices are feasible

(CBOs), informal groups or networks (such as mothers groups, farmers cooperatives or watershed associations), or key individuals.

One of the most widely cited plans for sustainability of Title II-supported development programs is to create or strengthen CBOs to take over responsibility for activities. The success of this approach depends on the CBOs management capacity, mastery of the necessary technical skills, and ability to obtain the financial and other resources needed to continue activities. In some cases, such organizations require legal empowerment as well. Explicit benchmarks of these capacities technical, management, and resource generation can serve as exit criteria for programs that depend on CBOs for sustainability.

CBOs may be formed through the efforts of the PVO, or they may be groups already functioning in the community. Choosing whether to work with an existing CBO or to form a new one depends on the local situation. Where CBOs exist and are functioning well, there may be distinct advantages to working with them: they may already have established credibility and may be more likely to continue functioning after PVO exit. Possible disadvantages are that they may have their own agendas that compete with those of the program, and that they may already have political alliances that include or exclude certain groups.

After benefits to adopters, farmers are likely to emulate the practices, and other farmers may emulate them. Examples include the dissemination of new seeds or new crops, the establishment of new marketing relationships such as producer cooperatives, and the establishment of revolving credit funds. The experience of the gradual dissemination of high-yielding crop varieties over the decades following their introduction demonstrates that profitable innovations can be extended widely and do not always require explicit promotion.

Phase over to communities

The phasing over of a program to a community can mean handing over responsibility for activities to community-based organizations

Current and past program experience with working with CBOs to ensure the sustainability of program goals points to several lessons learned on assuring their success. Programs that work with CBOs should involve them from the very beginning of the program cycle. Transfer of responsibilities to the community organization should take place gradually, with the PVO reducing its role over time to an advisory role, and finally to no role at all.

Sustainability and effectiveness of CBOs or groups may be enhanced by the establishment of horizontal and vertical linkages to other groups. Horizontal linkages include networks of similar groups in neighboring communities. Regular contact among similar groups in various communities may be a source of mutual support and assistance; there may be possi-

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Phase Over to Communities: Factors for Success

When phasing over activities to the community, sustaining desired outcomes depends on a number of factors:

Recognition by community members of activities proven value and their visible and valued outcomes.

Ownership and commitment to continue on the part of the community or community group.

Empowerment of individuals, communities and service providers to demand quality services.

Extent of transfer to community members, groups and service providers of the skills and knowledge needed to generate desired outcomes.

Institutional capacity of community-based organizations and health facilities, and capacity of key individuals in those organizations.

of consumable supplies as well as ongoing training and supervision. A study of CHWs found lack of adequate supervision and the inability to do their job due to lack of supplies were major factors leading to attrition among CHWs, whether paid or unpaid (Bhattacharyya et al., 2001).

Identifying and strengthening key individuals to serve as point persons within communities can also be useful. In MCHN programs, developing the skills and commitment of individual CHWs and assuring their effectiveness in their communities, increases the likelihood of long-term functioning. Establishing formal linkages to the public health system is also critical (Bhattacharyya et al., 2001). Support from community groups or government facilities helps to maintain these individuals level of commitment and motivation, refresh their skills, and also serve as a mechanism to replace individuals who can no longer serve in this role within their communities.

The goal of an exit strategy is not only to maintain benefits achieved, but also to enable further

Adaptability of community-based organizations and health facilities in the face of unpredictable political, environmental and social changes.

Explicit plans for resource generation when consumable supplies (e.g. medicines and immunizations; seeds and agrochemicals; food) are needed to sustain impact.

bilities for economies of scale in some activities (e.g., purchasing of goods and services). Regular contact can also help maintain high levels of morale and motivation.

Vertical linkages involve having local CBOs partner with and receive assistance from the government or other organizations. Explicit formal arrangements for support, supervision, provision of resources, and training can be critical for the continuation of activities aimed at achieving program goals. This type of linkage with the Ministry of Health (MOH) at the central and local levels is particularly vital for MCHN programs that require provision

programs. Ideally, an exit strategy sets in place a system whereby the benefits expand beyond the original beneficiaries and their communities. Community based promoters can be valuable vehicles for disseminating innovations. For example, in some programs, local farmers take responsibility for training new farmers in their communities in the production techniques they adopted.

Phase over to the government or other permanent organizations

A third approach to exit is for an institution that is present and active in the program area on a long-term basis to take over responsibility for program activities. Most often, this phase over approach aims to integrate program activities into existing public sector programs. In many ways, obtaining government commitment to maintain a program seems ideal, especially in the case where continued resource, staff, or infrastructure inputs are needed. Such integration may be particularly important where user fees or community contributions are not possible for legal, cultural, or economic reasons, and resources need to be provided by other means.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Linking CHWs to Government Health Facilities

The strategy of transferring responsibility for program support to the government is common in the case of MCHN programs that depend on volunteer CHWs. Benefits of explicit linkages between CHWs and the public health system include:

Most program areas have a functioning public health system present, which can serve as an important support to CHWs and other health activities after exit.


CHWs trained by a PVO represent a resource that the Ministry of Health (MOH) can use to expand coverage of its health system. This may serve as a motivation for the MOH to take responsibility for CHWs.

If functioning properly, the government offers a reliable system of supply provision. Medications, vitamin/mineral supplements and immunizations may be supplied through government health services.

Volunteer CHWs generally require periodic training to refresh their skills, which the government can often provide.

This approach implicitly assumes that the government will be able to support activities aimed at accomplishing and expanding program goals. But some governments find it difficult to provide the level of resources required or lack the technical capacity needed to take over activities sustainably. An exit strategy that involves phase over to the government must be based on a realistic assessment of government capacity, commitment and resources. The PVO should develop a partnership with the relevant government agencies early in the program cycle to build both commitment and technical capacity prior to exit.

In developing an exit strategy that will rely on phase over to a government entity, an important question is which level of government is appropriate to partner with. A number of countries are pursuing governance policies of decentralization, devolving responsibility for local programs to the municipal or area level. For example, in Peru, Area Health Agencies are being established, with community members trained in needs assessment and program planning as well as contracting procedures, program monitoring and management of budgets. Where decentralized government entities are functioning effectively and have some resources, engaging these entities in program exit plans may achieve the dual purpose of sustaining program outcomes and strengthening the local government.



The government identify new CHWs and a health mechanism for training and provisioning them, to replace health volunteers who leave their positions.

Government commitment may offer a level of legitimacy to CHWs as well that strengthens their work within communities.

The decision about which entities and levels of government are appropriate for partnership as part of an exit strategy should be based on careful analysis of the authority, resources and technical and management capacity of the different levels an analysis that will likely vary widely among countries. In many cases, multiple levels of government will need to be involved; for example, the central government may provide legal authorization and, possibly, funding, while the local government unit may be responsible for implementation.

It is important to develop partnerships and linkages with the appropriate government entities early in the program cycle and to transfer responsibility gradually, with formal agreements when appropriate.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Generation of Alternative Resources

For many development activities, a key to sustainability is the ability to generate resources when needed. While some activities (e.g., community-based health and nutrition education by CHWs) depend primarily on community and individual initiative, others (e.g., provision of curative care and immunizations, school feeding, provision of agricultural inputs) may require continued resource inputs. Four major approaches that have been used to assure adequate resources are discussed below.

Establish the organization or service as a business, using a revolving credit or business model

Advantages of the business model are that it creates community self-reliance, generates revenue that can be used to advance program goals, and may lead to establishment of a permanent entity that requires no new donor inputs of money, material goods, training, or technical assistance. Such business models are, of course, subject to the perils of any

too constrained to make contributions, but we are aware of no data explicitly addressing this question.

Seeking community contributions seems to have been used particularly to continue school feeding after program exit, possibly because school feeding is such a visible program, with concrete benefits for children. Seeking local support in cash or kind from parents and the community from early in the program cycle can make this approach more successful because the shift to relying on local contribution should not be abrupt.

Establish user fees or charges for cost recovery

To be effective, user fees must be collected fairly and systematically and there must be agreed upon mechanisms to enforce payment and proper use of funds. For example, school feeding programs in which many parents do not pay the required fee or in which the management of the revenue is poor are much less likely to continue after program exit. One risk in imposing user fees is that the

business, including economic reasons that lead to business failures or lead beneficiaries to default on their loans. One problem with the revolving credit model is that especially needy individuals may not access loans due to their inability to make repayment. This business model has been used most often for, and is probably most appropriate for, interventions that involve livelihood promotion: micro-credit and micro-enterprise development, agricultural and marketing innovations. The strength of this model is that activities have the potential to continue and expand, as economic opportunities permit.

Seek community contributions

In addition to generating resources to sustain program activities, seeking community contributions can also create feelings of community solidarity and can attract increased participation if households feel they are getting something of value for their contributions. Community contributions are only feasible if the community supports and values the activities and possesses resources to donate. The strategy may not be applicable in the poorest settings, where households feel

neediest households on the program activities. Options to help prevent this situation include setting fees on a sliding scale based on household income, introducing fees gradually, or informing the families well in advance about the fees. There have been cases, though, in which instituting user fees actually increased the use of health services, because the fees were used to obtain medicines and supplies by health centers, improving the quality of the service (McSweeney, 1979).

Seek alternative institutional (external) support from government or private donors

Some Title II development programs aim to position CBOs to be able to seek external funds themselves. This can be a reasonable strategy, but its effectiveness depends on the capacity of the CBO to fill this role effectively. It also depends on the availability of sufficient funds with the government or donors in question. Replacing program resources with funds from other donors does not address the issue of long-term sustainability; when the new donor exits at some point, resource generation needs may emerge again.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Special Exit Considerations for Direct Food Distribution Programs

Direct food distribution is a central element in many Title II development programs. The use of food in development programs raises special considerations planning program exit. Food, like medicines or vitamin/mineral supplements, is a consumable good; if the effectiveness of an activity depends on the continued provision of food, some means of funding procurement of the food needs to be identified as part of an exit strategy. In planning for exit, it is important to evaluate critically the need to continue food provision as a means of accomplishing the priority development goals after exit, since provision of food may be difficult to maintain after graduation or exit.

Exit strategies for food aid programs do not need to include continuation of direct food distribution in all cases, but the planning process should involve an analysis of whether continuation of food is required and if so, how this will occur. In some cases, program outcomes can be sustained without continuing food provision. For example, if adoption of behavior change from an MCHN program is sufficiently established within communities, the adoption of healthier practices may continue and even expand without additional food resources.

In

For programs in which the continuation of food provision is necessary to achieve program outcomes such as in some school feeding programs alternative sources of food can be explored, such as the private sector, local food sources, the government, or other donors. For such programs, identifying and planning a system for food provision is an important part of an exit strategy. Cultural factors can also affect plans to withdraw or replace food assistance, such as the extent to which food is considered an entitlement.

When continuation of food beyond program exit is necessary to sustain outcomes but alternative sources of food are not available, targets for program outcomes may be reduced, and programs should explore other (non-food) interventions that can contribute to sustaining outcomes.

Exit Criteria

Criteria used to determine when to exit vary by program. These criteria can be grouped in three categories: time limits, achievement of program impacts, and progress toward the identified graduation process. Many program situations call for using a combination of criteria from each of the three groups.

A time limit

One type of criterion for when to exit is how long the program has been operating.

^''

To substitute for the role that food played in the program. For example, if food served as an incentive for participation in health education or other services, other resources such as credit could be provided in place of food. Or if beneficiaries have come to value the services strongly enough, no incentive may be necessary. If the role of food is to prevent malnutrition among beneficiaries, complementary interventions to increase food security may reduce the necessity of continued direct provision of food. Such interventions may include promotion of home food production, improvements in infant/child feeding and care, improvements in food preparation, and income generation.

All development by the program funding cycle, and at the end of the cycle many programs either exit or continue in the same geographic areas in essentially the same form over multiple cycles. An explicit exit strategy that is built into program design from the beginning should include a specified time line for the exit process, making it less likely that programs either withdraw without proper preparation or simply roll over from cycle to cycle. For example, a program that has a time limit may increase its focus on establishing systems for sustainability, using the time frame to guide the process.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Achievement of specific program impact targets

Program impact can be used as a criterion for exit and to focus graduation efforts on those program components that have been effective. However, the use of impact indicators as criteria for exit does pose risks. First, the targeted level of impact may not be achievable in the desired time frame for exit. A second concern is the possibility of creating perverse incentives: if communities know that reaching a given level of impact will trigger the withdrawal of program benefits, their motivation to achieve that impact may be reduced.

Nevertheless, impact should be a consideration in planning for graduation or exit. The level of impact achieved can guide the time frame for exit and may also suggest which program goals should be the focus of efforts to achieve sustainability and which, due to lack of impact, should be given less attention. But a policy of committing to stay in a community or a region until impact targets are met is not recommended. Rather than set inflexible impact targets as graduation or

Where the exit strategy involves phase over to CBOs, benchmarks should include measures of the organizations institutional capacity, such as making contracts, keeping adequate records, enforcing their own rules, continuing activities started under the program and undertaking new activities or expanding to new project sites independently of PVO input.

For programs using a phased graduation approach, reaching a critical number of communities that have successfully graduated can serve as a useful benchmark for exit. The process of benchmark identification should include program managers, field staff and, if possible, community members because they are most aware of the situations in the communities.

Timeframes for Program Exit

Developing and following appropriate timeframes are important parts of a successful exit strategy. General principles and recommendations for planning timeframes are discussed below.

makes sense to establish an explicit time frame, though one with some flexibility built in, and to link the timeframe to the achievement of process-related benchmarks (Levinger and McLeod, 2002; Rogers, 2002).

Achievement of benchmarks indicating progress toward feasible exit

Benchmarks for progress toward exit are simply the operationalized, measurable indicators of identified steps in the graduation process. Benchmarks should be clearly linked to the graduation process and to the specific elements of the program that are to be phased out or phased over. For example, if links between CHWs and the local government health facility constitute a key component of the exit strategy, then benchmarks might include: At least 50% of CHWs have received a supervisory visit from the government health facility in the past six months, or CHWs have reported no stock-out in availability of supplies for the past year, or A functioning agreement is in place between the CHWs and the health facility.

Establish a clear but flexible timeline, linked to the program funding cycle

Along with specific process-related benchmarks, there should be a stated time line for exit, so that program staff and communities know they are working toward a deadline. Flexibility is important, but time lines should not be extended indefinitely, lest the motivation to make progress toward exit be reduced due to skepticism about the intention of the donor to withdraw. Such skepticism may be a particular risk for long standing programs.

Funding constraints may prevent extensions of exit timeframes. It is useful to link the time line for exit with the programs funding cycle. In a typical five year activity, the first two or three years may be spent identifying priorities, implementing and monitoring activities, identifying the approaches and mechanisms to be used for sustainable graduation, and defining specific benchmarks. This process should be completed by the time of the midterm evaluation, when more explicit measures should be undertaken to move toward meeting the

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

criteria for exit. In the case of a program that has been in existence for some time, it may be possible to complete this process more quickly, because the activities that form the program are already determined and their relative effectiveness has been demonstrated over time.

The graduation or exit process can then be completed over the final two years of a five year cycle. If it is possible to graduate some communities while the PVO is still able to observe and assess the phase over or phase out process, this may provide valuable insights about sustainability for future graduation efforts.

Incorporate exit plans from the beginning of program implementation

It is recommended that exit strategies be built into the design of programs from the beginning. Many programs, however, find it necessary to wait until midway through the program cycle to finalize specific exit criteria. For example, if one of the program objectives is to improve livelihoods, the exit strategy may depend on whether the most effective livelihood focus turns out to be improved livestock production, organization of a marketing cooperative, or the introduction of new varieties of seed. Similarly, if there are several potential community groups that might take responsibility for project activities in a phase over, time may be required to identify which

program activities need to be phased out or phased over at the same time. PVOs should have the opportunity to observe whether the systems that have been put into place are capable of functioning independently. For example, the phase out of supplementary food in an MCHN program may occur before the phase over of CHW training and supervision is complete. An exit strategy may involve the PVO departing from the community, but maintaining contact and availability through presence in nearby communities. By the time complete exit occurs, systems should be functioning independently, and any necessary institutional linkages and agreements should be formalized. Gradual exit also enables monitoring of the exit process that can generate lessons about what works and help identify and resolve problems.

Consider an exit timetable that allows sequential graduation of communities and/or components

The systematic, sequential graduation of project sites has several advantages. If a development program plans to leave one area while continuing activities in nearby areas, PVO staff may be available to provide guidance and technical assistance to graduated communities, on a reduced basis. Community volunteers and community groups in graduated communities may become involved in providing training and assistance to newly entering communities in the same or nearby areas, giving them

...
 group. For these reasons, the specific
 exit plan for exit may need to be developed
 gradually over the first couple of years of the
 program's operation, but including exit plans
 from the beginning of the program helps ensure
 enough time for this process.

term
***Implement exit plans in a gradual, phased
 manner***

Exit should involve the gradual disengagement
 of PVO staff and resources from the develop-
 ment activities initiated by the program and
 the gradual transfer of responsibility to the
 organizations, groups, or individuals that will
 take over activities following graduation. The
 process should be phased, so that local institu-
 tions or individuals gain increasing technical
 capacity and management expertise to be able
 to continue activities on their own. Not all

...
 as well as a mechanism for maintaining their
 skills and commitment (Rogers 2002). Moni-
 toring of graduated areas can also provide
 timely lessons learned for graduation in
 other areas and for graduation processes in
 general. As discussed above, there are also
 advantages to sequentially phasing out differ-
 ent program components. When possible,
 exit timetables should be planned to allow
 time for such sequential graduation of com-
 munities or components.

**Role of Program Monitoring and
 Evaluation**

Program impact evaluation also plays a role in
 the design of an exit strategy. While impact
 targets should not be the sole triggers for
 graduation or exit, measures of impact can

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

guide which elements of a program should be the focus of an exit strategy and associated sustainability efforts. Impact measures can also suggest levels of overall program progress that may indicate that it is appropriate to start the process of graduation or exit.

Ongoing monitoring of the processes not only of program implementation, but also of graduation progress is key to successful implementation of an exit strategy. Monitoring of benchmark indicators should be incorporated into the normal systems for program monitoring.

If graduation of some communities takes place prior to complete program exit, the graduated communities should be maintained within the programs monitoring and evaluation system in order to obtain information about the effectiveness of graduation strategies. This allows for continued measurement of benchmarks, outcomes and impacts. This will help identify program elements and exit approaches that appear sustainable. If different communities use different graduation approaches (e.g., phase over to community

Evaluation of Exit Strategies

The primary measure of an exit strategies success is that after the PVO has ceased working in an area, program impacts have been maintained or, better still, have improved and expanded to other beneficiaries and communities. Secondary measures of an exit strategies success are that relevant activities continue (possibly modified as a result of changing circumstances, but still in the service of development goals), and that systems developed and organizations and individuals trained or empowered by the program continue to function effectively.

The only way to rigorously evaluate the success of an exit strategy is to return to the program area some fixed time after exit and determine whether sustainability was achieved. An assessment one or two years after the program exits would provide some information, but longer-term evaluations should also be implemented for some proportion of programs. While comparing the relative sustainability of different exit approaches

phase over to community organizations (and to informal networks of individuals in others), comparative analysis of alternative graduation approaches could be performed and inform subsequent decisions regarding graduation and exit. The information can then be used to modify the design of graduation in communities graduating later.

Communication with Stakeholders

Establishing clear communication with the community beneficiaries, community-based providers of services, local authorities and other stakeholders about the programs eventual departure is a central element in a graduation or exit strategy. Clear and consistent communication from the beginning of the program helps prepare the community for graduation, which may eliminate a sense of dependence on the program and encourage communities to become self-reliant through the creation or strengthening of community groups or other mechanisms. Communication can reduce risk of resentment of the withdrawal of resources and can help generate greater ownership of the sustainability components by involving community members in planning at an early stage.

approaches their contexts vary so widely that it would be difficult to disentangle the success of the exit strategy itself from other factors related to sustainability.

Nevertheless, post-program evaluations are valuable in their own right, providing information about programmatic and contextual factors leading to sustainability, and about the role of the exit strategy in that process. Most evaluations of Title II and other development programs take place at the end of the programs funding cycle, and post-program evaluations are rare. Therefore, few evaluations are able to address whether impacts and processes are maintained, or whether new areas not originally covered by the program benefit from later expansion of the program or from emulation of practices originally promoted by the program.

By providing information about the long-term sustainability of program outcomes, post-program evaluations help develop more effective and sustainable graduation approaches and exit strategies, and thereby help ensure that programs benefit targeted populations beyond the limited duration of the program itself.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

References

- Bessenecker, C. Addressing the Needs of the Food Insecure: A Position Paper on Food-based Maternal Child Health and Nutrition Programs. Washington, D.C.: Project Concern International, 1999.
- Bhattacharyya, K., P. Winch, K. LeBan, and M. Tien. Community Health Worker Incentives and Disincentives: How they Affect Motivation, Retention and Sustainability. Arlington, Virginia: Basic Support for Institutionalizing Child Survival Project (BASICS), 2001.
- Bonnard, P., P. Haggerty, A. Swindale, G. Bergeron, and J. Demsey. Report of the Food Aid and Food Security Assessment: A Review of the Title II Development Food Aid Program. Washington, D.C.: Food and Nutrition Technical Assistance (FANTA) Project, Academy for Educational Development (AED), 2002.
- CARE Peru. DAP FY2002-2008: Sustainable Food Security in Peru. Proposal to USAID for Title II Development Activity Program. Atlanta, Georgia: CARE, 2008.
- Rogers, Beatrice Lorge and Kathy E. Macias. *Program Graduation and Exit Strategies: Title II Program Experiences and Related Research*. Washington, D.C.: Food and Nutrition Technical Assistance (FANTA) Project, Academy for Educational Development (AED), 2004.
- Rogers, Beatrice Lorge. Proposed Exit Strategy for Title II Food Security Programs in Honduras. Boston, Massachusetts: Tufts University Friedman School of Nutrition Science and Policy for CARE International/Honduras in Tegucigalpa, Honduras, 2002.
- Sternin, M., J. Sternin, and D. Marsh. Scaling Up a Poverty Alleviation and Nutrition Program in Vietnam. Chapter 6 in Marchione, T. (ed) *Scaling Up, Scaling Down: Capacities for Overcoming Malnutrition in Developing Countries*. New York, New York: Gordon and Breach Science Publishers, 1999.
- Webb, Patrick, J. Coates, and R. Houser. *Does Microcredit Meet the Needs of all Poor Women? Constraints to Participation Among Destitute Women in Bangladesh*. Boston, Massachusetts: FANTA, 2000.



Food and Nutrition
Technical Assistance Project
Academy for Educational
Development
1825 Connecticut Ave., NW
Washington, DC 20009-5721
Tel: 202-884-8000
Fax: 202-884-8432
E-mail: fanta@aed.org
<http://www.fantaproject.org>

This publication was made possible through the support provided to the Food and Nutrition Technical Assistance (FANTA) Project by the U.S. Agency

Georgia:
CARE,
2000. Peru. Results Report FY2001 and
Resource Request FY2003-2004. Atlanta,
Georgia: CARE, 2002.

FANTA. Improving the Use of Food Rations
in Title II Maternal and Child Health Nutrition
Programs (Draft). Washington D.C.: Food
and Nutrition Technical Assistance (FANTA)
Project, Academy for Educational Develop-
ment (AED), 1999.

Levinger, Beryl and Jean McLeod. *Hello, I
Must Be Going: Ensuring Quality Services and
Sustainable Benefits through Well-Designed
Exit Strategies*. Newton, Massachusetts: Edu-
cation Development Center, Inc., Center for
Organizational Learning and Development
(COLAD), 2002.

McSweeney, Brenda. *The Negative Impact
of Development on Women Reconsidered:
A Study of the Womens Education Project in
Upper Volta* (unpublished Ph.D. dissertation).
Medford, Massachusetts: Fletcher School of
Law and Diplomacy, 1979.

setts:
Tufts University
Friedman
School
of
Nutrition Science and Policy, 2002.

About the Authors

This technical note is based on Program
*Graduation and Exit Strategies: Title II Program
Experiences and Related Research (2004)*, writ-
ten by Beatrice Lorge Rogers and Kathy E.
Macias of the Tufts University Friedman
School of Nutrition Science and Policy.

Beatrice Rogers is Professor of Economics
and Food Policy, and Dean for Academic
Affairs at the Friedman School of Nutrition
Science and Policy. Her work focuses on de-
terminants of household food consumption,
including consumer prices and food assis-
tance programs, and on the allocation of food
and other resources within households.

Kathy Macas is a doctoral student at the
Friedman School of Nutrition Science and
Policy. Her interests are in household liveli-
hood and food security, their relationship to
macro-level socio-political and economic
policies, and humanitarian assistance.

Tony Castleman, Sandra Remancus, and
Bruce Cogill provided technical input to
this technical note.

Development's (USAID) Mis-
sion in the Office of
Food for Peace of the Bureau
for Democracy, Conflict and
Humanitarian Assistance and
the Office of Health, Infec-
tious Disease and Nutrition of
the Bureau for Global Health,
and USAID/New Delhi, under
terms of agreement No. HRN-
A-00-98-00046-00 awarded to
the Academy for Educational
Development (AED). The
opinions expressed herein
are those of the authors and
do not necessarily reflect the
views of the U.S. Agency for
International Development.

Recommended citation:
Rogers, Beatrice Lorge, and
Kathy E. Macas. Program
*Graduation and Exit Strategies:
A Focus on Title II Food Aid De-
velopment Programs*. Washing-
ton, D.C.: Food and Nutrition
Technical Assistance Project,
Academy for Educational
Development, 2004.

Assessment of Nutritional Status Adults, Using Weight and Height

Good nutrition improves the quality of life and health of PLWHA. This is why it is important to monitor nutritional status.

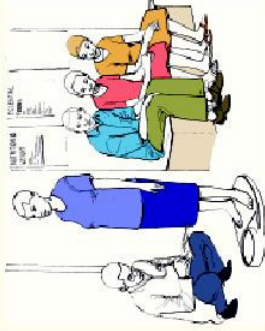
STPS

sure weight:

• ensure the scale pointer is at zero before taking a measurement.
 • person is required to dress in light clothes and take off shoes. Women should remove scarf.

• /she must stand straight and unassisted at the centre of the balance platform.

• weight should be recorded to the nearest 0.1kg.



sure height:

• person is required to remove his/her shoes, stand erect, looking straight in a horizontal plane with feet together and knees straight. The heels, buttocks, shoulder blades and the back of the head should touch against the wall.

• height should be recorded to the nearest 0.5cm.

• calculate Body Mass Index (BMI):

• convert cm to meters (1 metre = 100 cm)

• calculate BMI using this formula: $BMI = \frac{\text{Weight in kilograms}}{(\text{Height in m})^2}$

$$BMI = \frac{\text{Weight in kilograms}}{(\text{Height in m})^2}$$

• also calculate BMI using the chart on the back of this page. For example a patient weighs 60 kilos draw a vertical line upwards from point 60 on X axis. If height is 1.58cm, draw a horizontal line across from point 158 on Y axis. The point at which the two lines meet. In this case the BMI is 24.

• action when there is:

• a weight loss of 6 to 7 Kg within a month (even calculating BMI).

• an unintended weight loss for more

• 1 month • BMI below 18.5 • BMI 30 and above

• use BMI for pregnant women

NB:

For actions to take in case of weight loss (underweight) or obesity, refer to the information on weight management in



Go o

STE

1. Me a
 - Mak takin
 - The cloth reme
 - He/ on
 - The

2. Me a
 - The strag hee ag; He;

3. Calc
 - Con'
 - Calc

You can if a patie patient's BMI is th

Take

- Uninten without
 - Continru than 2 n
- Do not

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw






Y axis
Height

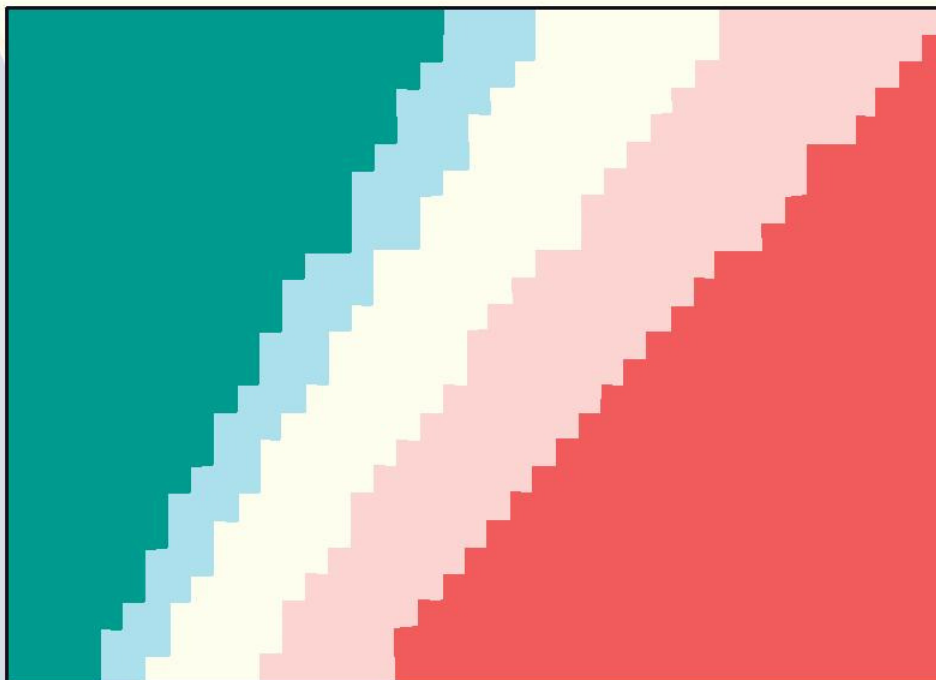
Body Mass Index (BMI) reference table

BMI references:

- <18.5 = Underweight
 - 18.5-24.9 = Normal weight
 - 25-29.9 = Overweight
 - 30 and above=Obese
- (Source: WHO, 1995)

If the meeting point falls in the:

-  Dark green area indicates underweight
-  Light green area is normal but tending towards underweight
-  White area indicates the patient has adequate weight for the height
-  Light red area indicates overweight
-  Dark red area indicates obesity



Weight

$$\text{Body Mass Index (BMI)} = \frac{\text{Weight (Kg)}}{\text{Height (m)}^2}$$

X
a:

Produced by Regional Centre for Quality Health Care, Makerere University Medical School, P O Box **PO Box** 29140, Kampala -Uganda,
tel. 256-41-530888, **F ax** 256 530876, **Website:** www.rcqhc.org | **technical support:** FANTA and LINKAGES projects,
Financial support: USAID / REDSO/ESA

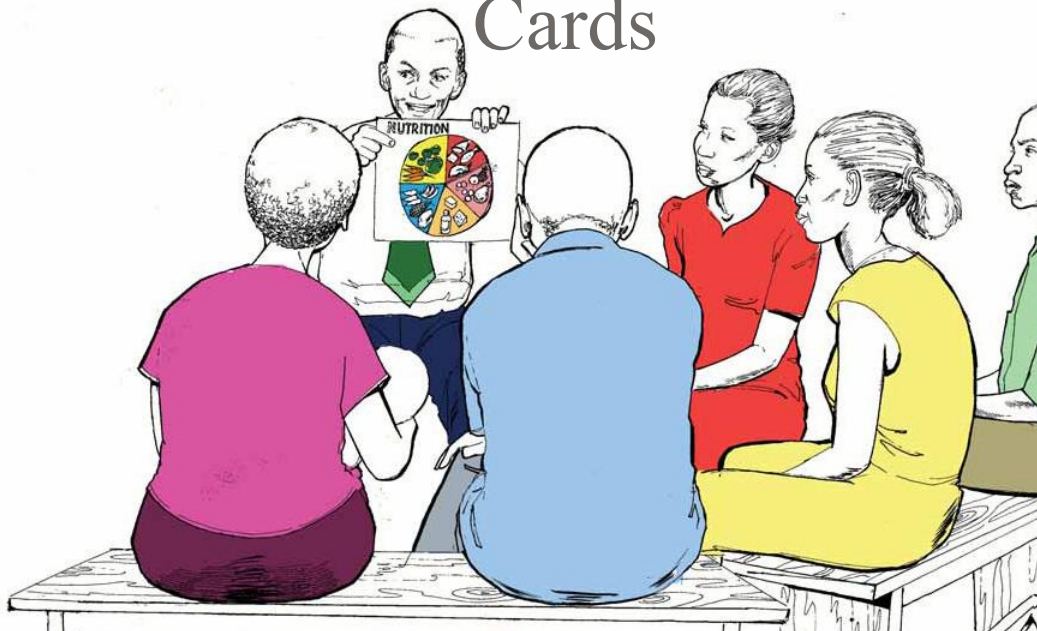
The opinions expressed here are those of the author and do not necessarily reflect those of USAID

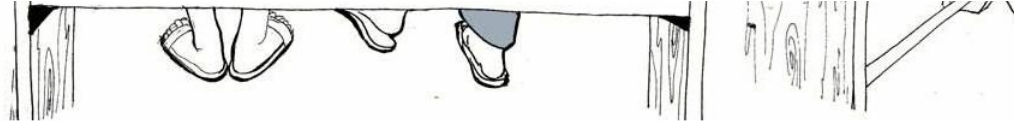


home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Nutrition for PLW HA - Counselling

Cards





home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Nutrition for PLWHA - Counselling Cards is a publication of Regional Centre for Quality of Care (RCQHC), Kampala - Uganda. Technical and financial support for development of this publication was provided by the Food and Nutrition Technical Assistance (FANTA) and LINKAGES projects.

RCQHC is a regional quality of health care capacity development institute largely supported by REDSO/ESA in Nairobi and Makerere University, Kampala.

The FANTA Project is supported by the Regional Economic Development Service Office/East and Southern Africa (REDSO/ESA) and the Office of Health, Infectious Disease and Nutrition of the Bureau for Global Health at the U.S. Agency for International Development (USAID), under the terms of Cooperative Agreement No. HRN-A-00-98-00046-00 awarded to the Academy for Development (AED).

The LINKAGES Project is supported by the Regional Economic Development Service Office/East and Southern Africa (REDSO/ESA) and GH/HIDN of the United States Agency for International Development (USAID), under the terms of Cooperative Agreement No. HRN-A-00-97-00007-00.

The opinions expressed herein are those of the authors and do not necessarily reflect the views of USAID.

March 2005 (revised)





For copies of this flip chart contact:

Regional Centre for Quality of Health Care, Makerere University Medical School,
P O Box 29140, Kampala -Uganda, Tel. 256-41-530888, Fax 256 530876

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Acknowledgments

This publication is a product of the Regional Centre for Quality of Health Care (RCQHC). A number of people and organisations contributed to the development of this booklet. The content was drafted by the RCQHC, the FANTA Project, the LINKAGES Project, Mary Materu of CONSENUTH in Gakenia Wamuyu Maina of IPH. Additional comments were given at an international workshop held to review the materials in Jinja, May 2004.

Appreciation is expressed for technical input from participants of the Jinja 2004 workshop, specifically: Koenig Kalu of Kampala Apophia and Denis Okwar of ACIDI/VOCA; Sande Julius of AIC Uganda; Phoebe Nabongo of Infectious Disease Institute, Mulago; Mulindwa Rwabaingi of Joint Clinical Research Centre; Mary Butamanya and Sheila Nyakwezi of Mildmay; Ursula Wangwe of Ministry of Health; Magero Jacinta of NACWOLA; Faith Akiiki of National Forum of PLWHA; Maria Nanyonga and Regalyire of Nsambya Home Based Care; Joy Elizabeth Ogutu of PATCH CONSULT; Samalie Basankwa of Basankwa CP Ministry of Health; Penninah Namusi, Hellen Ekideit and Juliana Nyombi of TASO; Peter Mutulira of THETA; Lilian Nakato of Uganda HIV/AIDS Control Project; and Irene Kiiza of Security Program- World Vision. Gratitude is also due to Dr. Joel Okullo, Director of the RCQHC in Uganda for the leadership provided in helping us produce this booklet.

The RCQHC also appreciates the technical input and review comments provided by Robert Mwangi, Leonard, Lora Iannotti, Dorcas Lwanga, Sandra Remancus and Liz Thomas of AED.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Table of Contents

INTRODUCTION

Theme 1 - Good nutrition is important for the well-being of PLWHA p.2

- 1.1 Good nutrition keeps the body strong
- 1.2 Poor nutrition quickens progression of HIV to AIDS
- 1.3 Good nutrition delays progression of HIV to AIDS

Theme 2 - Eating well for PLWHA p.8

- 2.1 Eat meals that have a variety of food types
- 2.2 Eat fortified foods to increase intake of essential nutrients
- 2.3 Increase energy intake by eating more
- 2.4 Eat snacks to increase energy intake
- 2.5 Address constraints to eating well

Theme 3 - Preventing infections

- 3.1 Keep surroundings clean
- 3.2 Practice food hygiene and safety
- 3.3 Have regular check-ups

Theme 4 - Maintaining physical activity

- 4.1 Exercise regularly and continue daily activity

Theme 5 - Manage diet related HIV/AIDS symptoms p.26

- 5.1 Loss of appetite
- 5.2 Depression and stress
- 5.3 Mouth sores and oral thrush
- 5.4 Tuberculosis

5

5.

5.6 Diarrhoea, nausea and vomiting
Anaemia

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

INTRODUCTION

This is a flip chart containing counselling cards. These cards are designed for counselors and health workers to enhance nutrition counselling for PLWHA.

Use these cards when counselling PLWHA or their caregivers to help them:
 Make informed choices for improving their nutrition.
 Identify and use locally available foods to meet their nutritional needs.
 Understand and adopt practices that promote a healthier nutritional status.
 Understand how to use diet to manage common HIV/AIDS related conditions.

How to use the cards

1. You can use these cards for both individual and group counselling.
2. Read all the cards to know the content before using them. This will help you to select the appropriate cards in a given counselling situation.
3. You can place the flip chart on a table or hold it to your chest. The side with the illustration should face the client/s. The side with the notes should face the counselor. Hold the flip chart in a way that allows clear viewing of illustrations by the client/s.
4. After using a card, flip it over so that the client sees a new illustration. This enables the counselor to see the notes on the back of the previous page.
 - Use theme 1 cards to provide general counselling on nutrition and HIV/AIDS for both individual and group counselling.
 - Use theme 2 cards to provide specific counselling.

5. Maintain eye contact when talking with the client during counselling. Build on what the client knows. Use the key messages in the cards to reinforce or correct the clients responses as needed.

Review with your client the key points discussed on each card to ensure the client has understood the discussion correctly.

Remember:

Every client is unique. How he or she responds to information may vary. Clients with a recurring condition requiring the same nutrition intervention may have which necessitate medical approaches. All clients may not be necessary for each client session. Select cards to use according to the individual clients needs.

Importance of nutrition counselling for PLWHA

Malnutrition worsens the effects of HIV infection by weakening the bodys ability to fight diseases. On the other hand, HIV infection increases nutritional needs and vulnerability to malnutrition. Frequent and chronic illnesses compromise food production capacity, and food intake, absorption and utilization.

Improving nutrition can help to strengthen the bodys ability to fight diseases and delay progression from HIV to AIDS. This makes it possible for the PLWHA to stay productive and live longer.

Use theme 2 cards to provide specific counselling

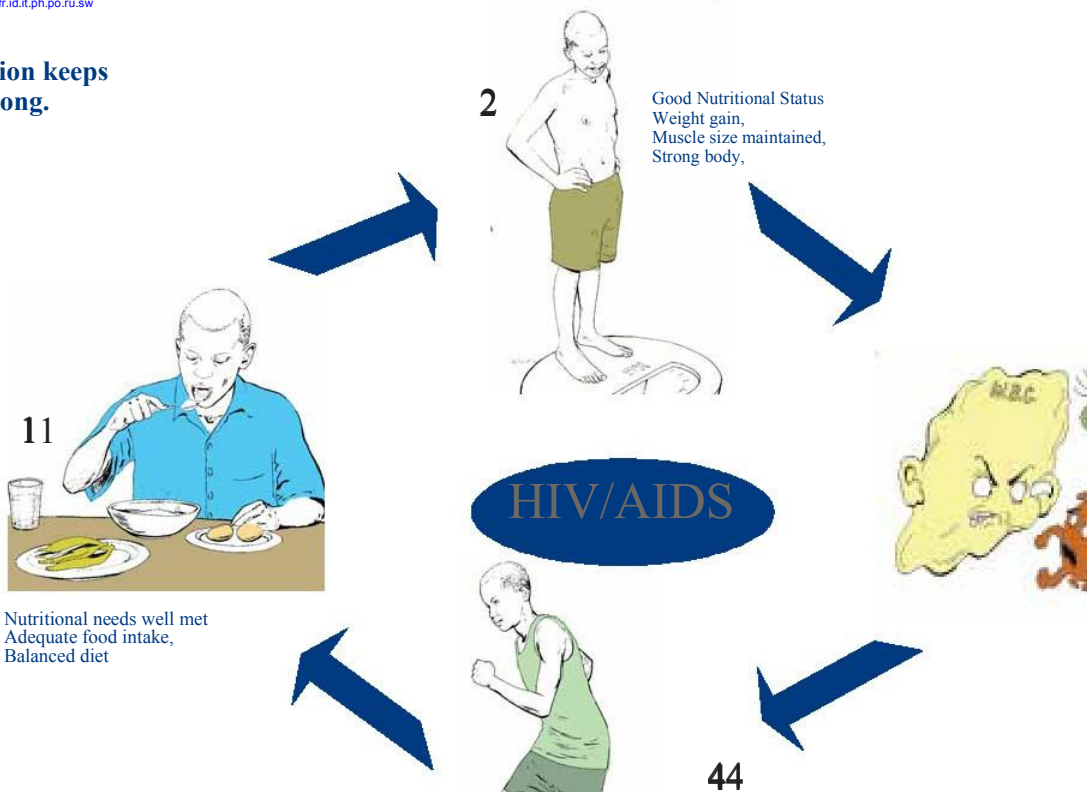
Use theme 3 cards to provide counselling on how to avoid infections.

Use theme 4 cards to provide counselling for PLWHA on the importance of physical activity.

Use theme 5 cards to provide counselling for PLWHA with HIV related symptoms

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Good nutrition keeps the body strong.





Reduced vulnerability
to infections
Slower progression to
AIDS

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

THEME 1 GOOD NUTRITION IS IMPORTANT FOR THE WELL-BEING OF PLWHA

1.1 GOOD NUTRITION KEEPS THE BODY STRONG

Ask the client to describe what he/she sees in the picture.
Building on the clients response, explain how good nutrition affects HIV/AIDS.

1. The picture to the left

HIV increases the bodys needs for food.

To meet the increased food needs,the PLWHA is eating well and absorbs foods required by the body.

2. The picture above

Because the PLWHA is able to meet his extra food needs, he will not lose weight. He will be able to stay strong and well nourished.

The PLWHA has a well nourished body that enables him to build strength to fight HIV/AIDS and other diseases.

3. The picture far right

The bodys defence system is strengthened against disease and infection because the body has enough nutrients stored.

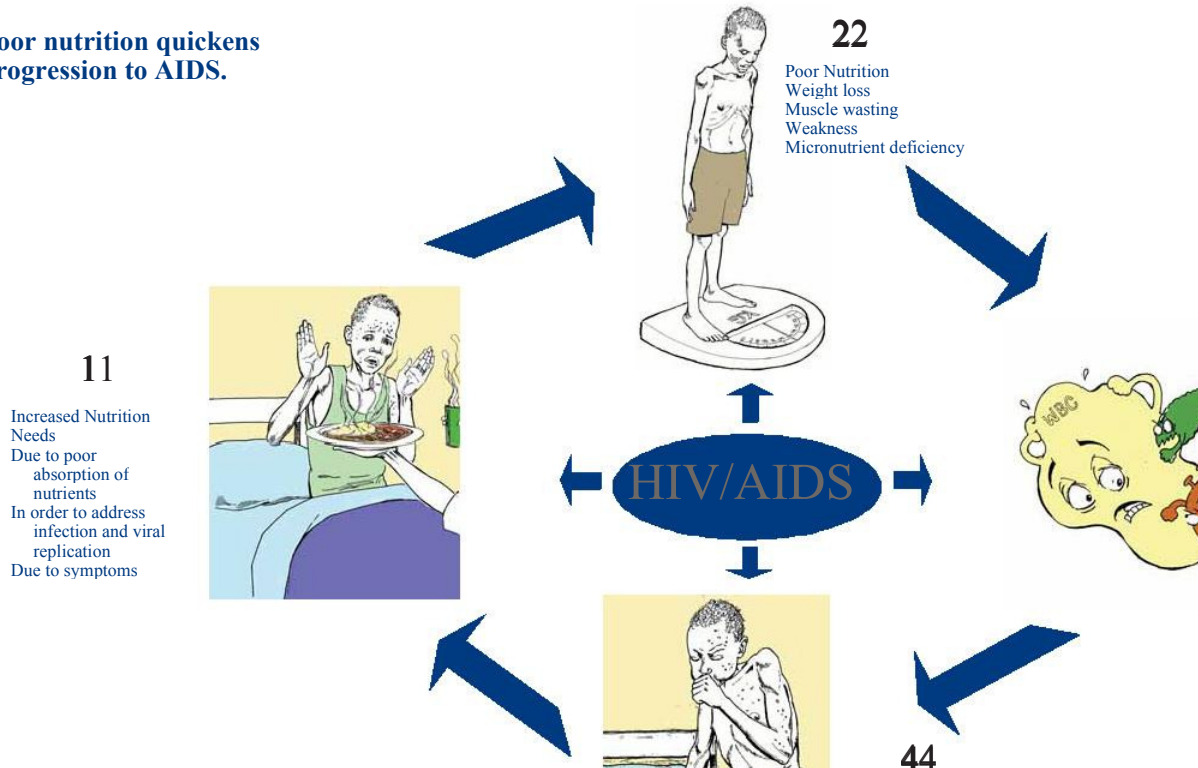
The body can therefore fight off infections better. This delays progression of HIV to AIDS.

4

..
The body does not easily get infections. This makes the PLWHA stay strong and less dependent on
Since the PLWHA does not get frequent infections, progression of HIV to AIDS is delayed. The
PLWHA good appetite and the cycle continues.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Poor nutrition quickens progression to AIDS.





Increased vulnerability to infections, including TB and flu, and thus faster progression to AIDS

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

THEME 1

GOOD NUTRITION IS IMPORTANT FOR THE WELL-BEING OF PLWHA

1.2

POOR NUTRITION QUICKENS PROGRESSION OF HIV TO AIDS

Ask the client what he/she sees in the picture.

Explain to the client how poor nutritional status affects progression of HIV to AIDS

1. The picture to the left

HIV and frequent infections increase the nutritional needs of the PLWHA.

But the PLWHA cannot take in enough food to get the needed nutrients. This is usually due to loss of appetite, poor absorption of nutrients, and changes in the way food is utilised in the body resulting from HIV and frequent infections.

2. The picture above

The poor intake of food leads to loss of weight, body weakness, nutrient deficiencies and poor nutritional status.

The poor nutritional status weakens the bodys ability to fight diseases even further, and increases vulnerability to infections and to the impact of HIV.

3. The picture far right

HIV destroys the bodys natural ability to fight disease and infection.

As a result the bodys ability to fight infections is greatly reduced.

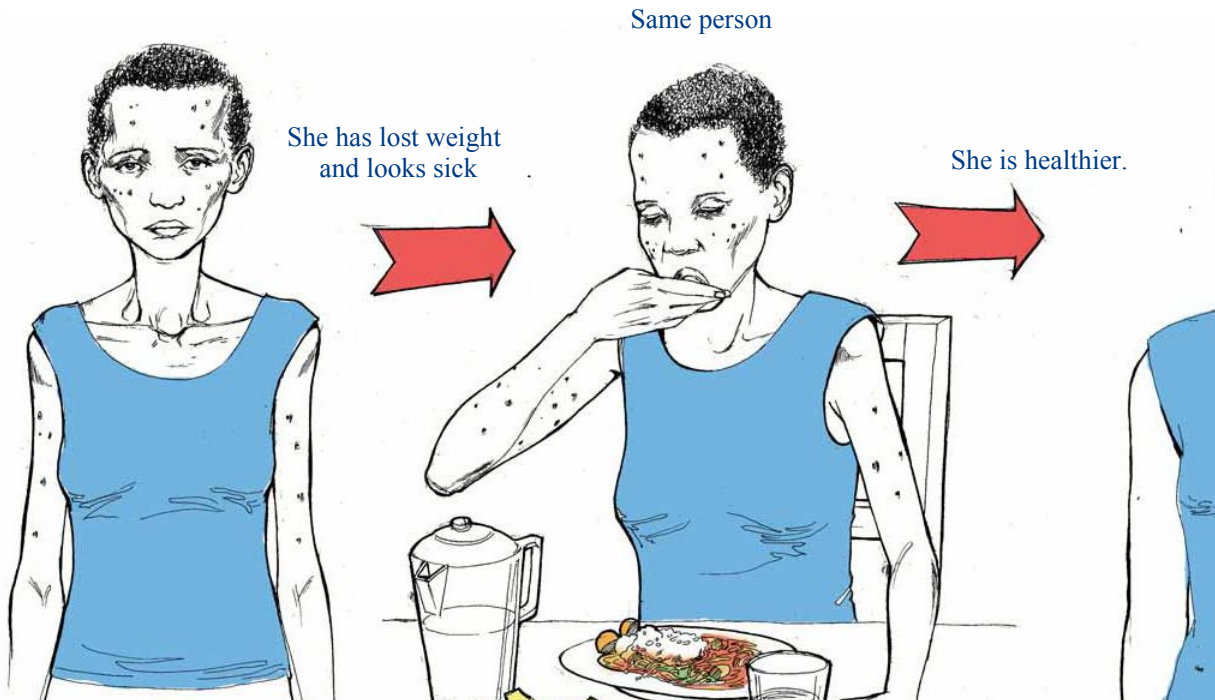
4. The picture below

With a weakened ability to fight infections, the body becomes

vulnerable to infections that normally

The frequent infections make the body weaker, and lead to faster progression from HIV to AIDS.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw





home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

THEME 1

GOOD NUTRITION IS IMPORTANT FOR THE WELL-BEING OF PLWHA

1.3

GOOD NUTRITION DELAYS PROGRESSION OF HIV TO AIDS

I. Ask the client to describe and explain the picture:

It is the same person. In one picture she has lost weight and looks sick. In the other picture she is healthy.

II. Explain to the client that a PLWHA:

Can live a healthier life, free from frequent infections.
Can look well-nourished and be well-nourished.

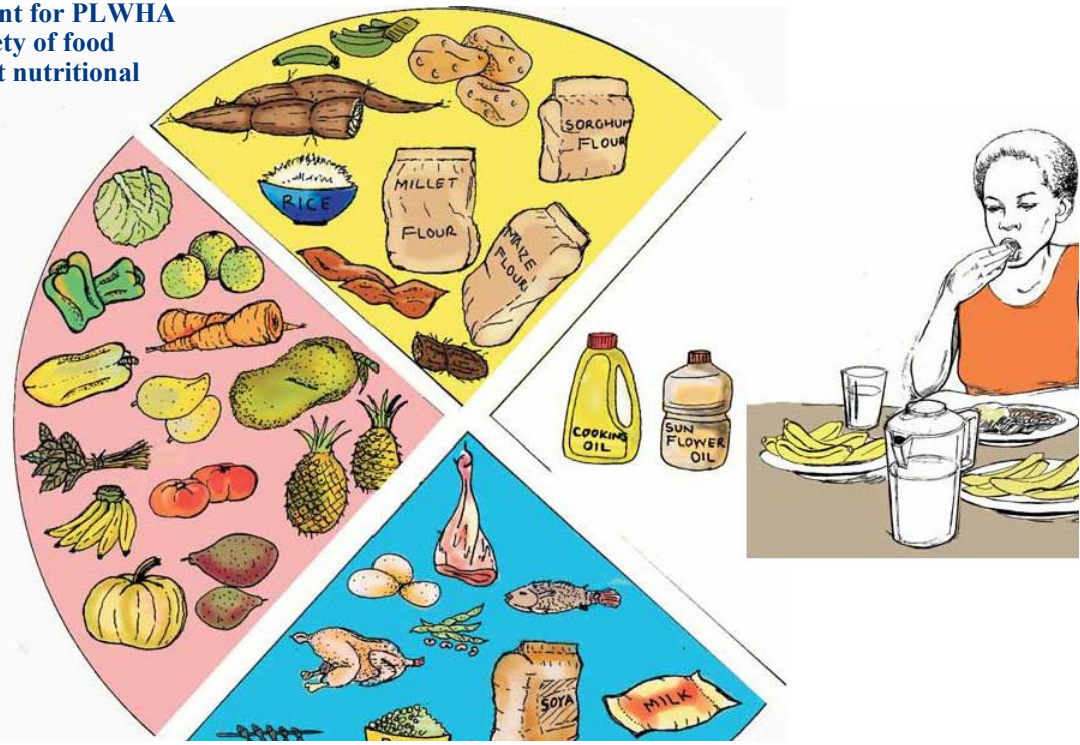
III. Explain that to live a healthier life and be well-nourished a PLWHA must take special care of his/her nutritional needs by:

Eating well,
Preventing infections,
Maintaining physical activity,
Managing diet related HIV/AIDS symptoms, such as diarrhoea.

Ask the client if he/she has any questions relating to any of the recommended practices. Use the following sets of cards to provide more information about the recommended practices.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

It is important for PLWHA to eat a variety of food types to meet nutritional needs.





home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

THEME 2 EATING WELL FOR PLWHA

2.1 EAT MEALS THAT HAVE A VARIETY OF FOOD TYPES

- I. Ask about the clients understanding of the need for food from each of the food types:
 - Energy giving foods (top and right of chart) - Provide the body with power, strength and energy to function (e.g. cereals, tubers, oils)
 - Body building foods (bottom of chart) - Needed for building of muscles, cells, body defense system and (e.g. animal products, nuts, beans)
 - Protective foods (left of chart) - Strengthen the bodys ability to fight disease, help in cleansing body and by-products of body functions. (e.g. vegetables, fruits)
- II. Explain that it is important for a PLWHA to eat well to meet the bodys nutritional needs for proper functioning, and repair and for maintenance of health.
 - Different types of foods play different roles in the body. Therefore the body needs different types of foods to meet its nutritional needs.
 - A PLWHA has increased nutritional needs resulting from the HIV infection. In some cases medication may increase nutritional needs.
 - Failing to meet the bodys nutritional needs will lead to poor nutritional status. This will further weaken the bodys ability to fight diseases and will make one lose weight.
 - Eating well helps a PLWHA to meet their bodys nutritional needs. It also can help medication work better.
- III. Explain that eating well means eating in adequate amounts of the different varieties of foods required by the body.
 - A good meal should include foods from the three food groups and a drink.
 - It is important to drink plenty of fluids, especially cool boiled water (at least 1.5-2 liters per day).

4 cups of glass or plastic

in the hands of the client. A good meal at least 3 times a day, plus snacks.

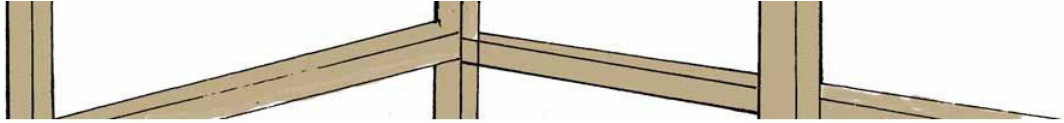
IV. Discuss with the client food combinations that are available in his/her community. Ensure that they include the food types plus clean water.

Ask the clients about questions she/he may have about what has been discussed.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

**Intake of essential
nutrients can be
increased by eating
fortified foods.**





home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

THEME 2 EATING WELL FOR PLWHA

2.2 EAT FORTIFIED FOODS TO INCREASE INTAKE OF ESSENTIAL NUTRIENTS

- I. Explain to the client that intake of essential nutrients can be increased by eating fortified foods where available and affordable.
Fortified foods have added vitamins, minerals or other nutrients to improve their nutritional value.
- II. Ask the client to name fortified foods in the picture.
Salt fortified with iodine,
Commercially produced/packaged cereal flours like maize, millet, soya
(fortified with the B-vitamins and zinc),
Milk products and yoghurt, mainly fortified with calcium and vitamin A,
Oils and fats like margarine and vegetable oil, mainly fortified with vitamins A and E,
Bottled fruit juices fortified with vitamin C (not in picture). Avoid quenchers since they simply contain carbonated water, sugar and flavour.
- III. Ask the client if he/she knows more examples of fortified foods. Find out which foods the client can afford and is able to eat. Reinforce positive attitudes and practices. Clarify any myths the client may have about fortified foods.
- IV. Tell the client to always remember to read product labels (or if not possible, to ask) for indication of added nutrients and expiry dates.
- V. Tell the client that additional nutrient requirements can also be obtained by taking a

multivitamin supplement.

VI. Explain that multivitamin supplements should only be taken after consultation with a health worker.

STRESS: MULTIVITAMIN SUPPLEMENTS ARE ONLY ADDITIONS TO FOOD AND MUST REPLACE ~~FOOD~~

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw



PLWH need their nutritional needs. meet



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

THEME 2 EATING WELL FOR PLWHA

2.3 INCREASE ENERGY INTAKE BY EATING MORE

I. Explain to the client the importance of increasing intake of energy.

When one has HIV the bodys requirement for energy is increased.

PLWHA need to eat more food than a person without HIV/AIDS. The healthiest way to meet the increased energy requirements is to eat more food from all food groups and maintain a balanced diet. If the bodys requirement for energy is not met, the body will break down fat and muscle tissue, leading to weight loss.

II. Ask the client how they can increase intake of energy

Increase food intake by increasing the amount of food served.

Increase the frequency of meals and snacks.

Make every bite count by having foods that are rich in energy or by adding oil or sugar to food.

However, large amounts of sugar and oil can be unhealthy as explained below.

III. IMPORTANT! Caution the client to limit the following:

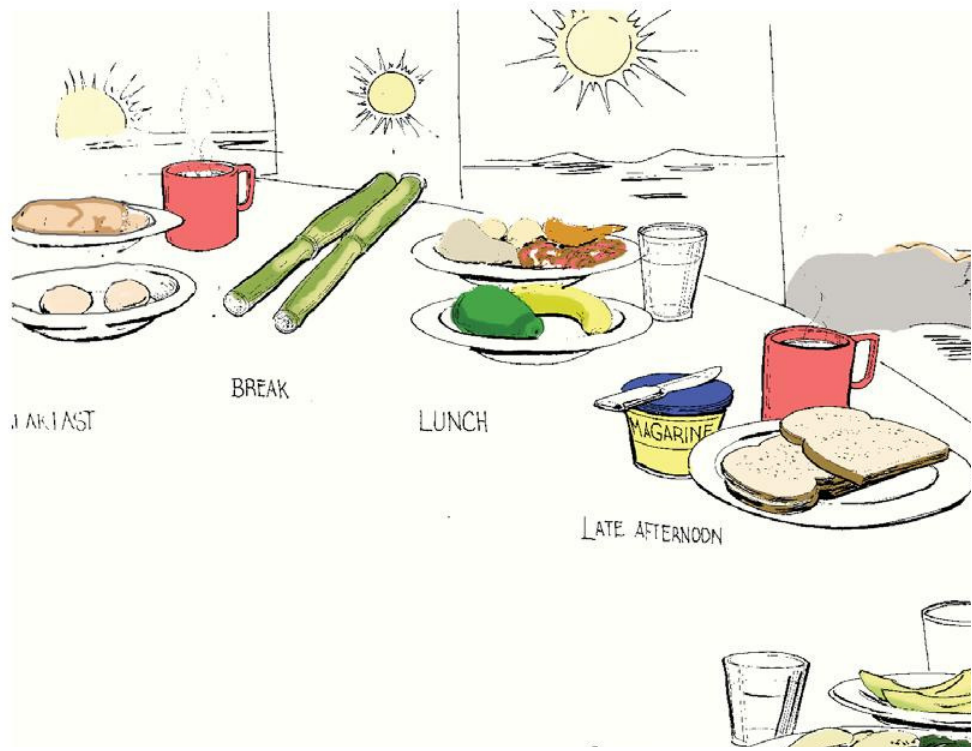
Amount of sugars, especially refined sugars. When taken in large amounts, sugars are stored as fat in the body. This can lead to diabetes, heart disease and liver damage. Sugar should be avoided if you have oral thrush.

Intake of fats and oils, especially from animal products. When taken in large amounts, they can cause high levels of fat in the blood, which can lead to heart disease,

As a result of the above, it is recommended that individuals taking certain
essential oils should avoid taking coffee. These may affect absorption of nutrients and intake of other
foods.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Meals and snacks over a 24 hour period



SUPPER



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

THEME 2 EATING WELL FOR PLWHA

2.4 EAT SNACKS TO INCREASE ENERGY INTAKE

- I. Explain that another way to increase the amount of energy consumed in a day is to have nutritious snacks between meals. Snacks should be nutrient-dense and, if possible, should have foods ~~from~~ more than one food type.
- II. Ask and discuss with the client what they see in the picture
Meals being taken at different times of the day.
The person takes at least 2 snacks during the day and 3 major meals (breakfast, lunch and ~~foods~~) from all three of the food groups discussed are included.
The snacks are nutritious.
- III. Find out if the client is able to have a snack and if so, when. Discuss the best times to have snacks.
Possible snack times include:
When one is resting or chatting with friends or during breaks.
When one is travelling.
- IV. Discuss the different kinds of foods one can take as snacks during the day.
Explore with the client snack foods that the client likes, and can access and afford.
The snack should be nutritious.

V. Explain that if one is on medication, one may need to plan meals and snacks based on the times for taking medications. This should be done in consultation with ones doctor.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Discuss constraints to eating well and how to address them





home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

THEME 2 EATING WELL FOR PLWHA

2.5 ADDRESS CONSTRAINTS TO EATING WELL

Ask the client about problems and constraints they face in eating a variety of foods and increasing food intake as discussed.

Explore and select options for addressing these problems. Below is a table with examples of problems that may be faced by a PLWHA and possible solutions.

If the client(s) reports	Then advise to:
Lack of time to prepare.	<ul style="list-style-type: none"> • Use time saving methods such as katogo (mixing foods in one dish rather than cooking separate dishes) or mugoyo • Double steaming or soaking dry legumes over night • Buy a variety of already cooked foods (but not junk).
Lack of money to buy and include a variety foods in meals.	<ul style="list-style-type: none"> • Backyard farming • Make changes to allocation of household food budget to increase nutrition benefit • Explore linking to community support groups
Crops recommended are normally not grown.	<ul style="list-style-type: none"> • Grow these crops even on small scale in home garden
No one available to help buy, collect and prepare different foods.	<ul style="list-style-type: none"> • Adopt time-saving cooking methods like mixing foods in one dish • Refer to groups supporting food security
Traditional food taboos. How food is allocated within the home.	<ul style="list-style-type: none"> • Encourage gradual change of attitude • Involve family members in deciding on possible changes • Seek alternatives
Seasonal variation in availability of food.	<ul style="list-style-type: none"> • Use watering and mulching. • Store foods during bumper harvests • Refer to groups supporting food security
Loneliness during meals.	<ul style="list-style-type: none"> • Consider involving caretakers to provide support and company for and during meal times.

HIV related symptoms such as anorexia and oral thrush.	<ul style="list-style-type: none">▪ Refer for psycho-social counselling.▪ Advise on diet related management of symptoms using cards in Theme 4.▪ Simple home medical management▪ Refer for medical care if serious.
--	--

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Clean home environment





home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

THEME 3 PREVENTING INFECTIONS

3.1 KEEP SURROUNDINGS CLEAN

I. Explain that preventing infections is an important way for PLWHA to maintain a healthier nutritional status.

Infections may cause loss of appetite, vomiting, or diarrhoea which reduce food intake or absorption.

Infections also increase the nutrient requirements of the body.

PLWHA should therefore try to prevent getting infections, and if they do get infections they should seek treatment immediately.

II. Explain that the risk of getting infections can be reduced by actions that minimise exposure to disease-causing germs.

III. Ask the client to look at the picture and identify some practices that could prevent illnesses.

Keep the home environment clean.

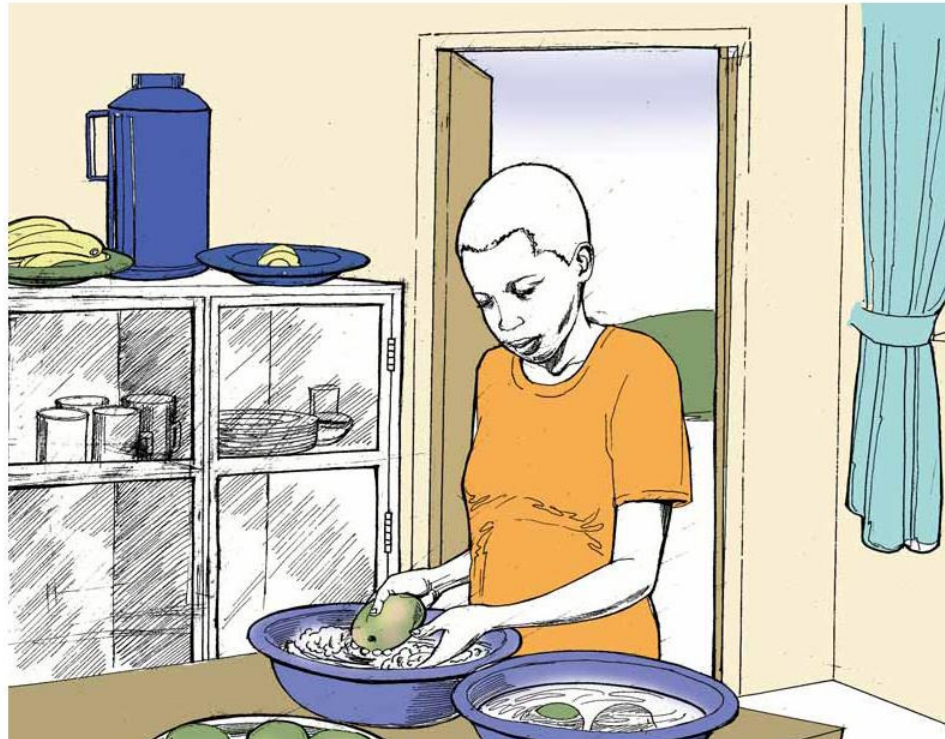
Have a toilet and keep it clean and covered.

Have water outside the toilet and wash hands with water and soap after using the toilet.

Keep animals away from cooking area.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Food hygiene and safety is one of the main ways of preventing infection





home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

THEME 3 PREVENTING INFECTIONS

3.2 PRACTICE FOOD HYGIENE AND SAFETY

- I. Explain that food hygiene and safety is one of the main ways of preventing infection in PLWHA:
 Food can be a source of infection if it is not properly handled, prepared and kept.
 Most infections that arise out of poor food hygiene and safety practices are associated with diarrhoea and vomiting. These reduce intake and absorption of food, thus compromising nutritional status.
- II. Discuss vital food hygiene and safety practices in the picture:
 Wash hands thoroughly before handling, preparing and eating foods.
 Keep food and drinking water covered and stored away from insects, flies, rats and other animals.
 Wash fruits and vegetables with clean water before eating, cooking or serving.
 Use clean, safe water for food preparation.
 Wash the food preparation area and eating and cooking utensils, and keep them clean.
 Keep cooked food away from contact with raw food.
- III. Emphasise that the following should be avoided:
 Eating mouldy, spoilt or rotten food.
 Raw eggs or foods that contain raw eggs.
 Raw fish.
 Meat that

meat that

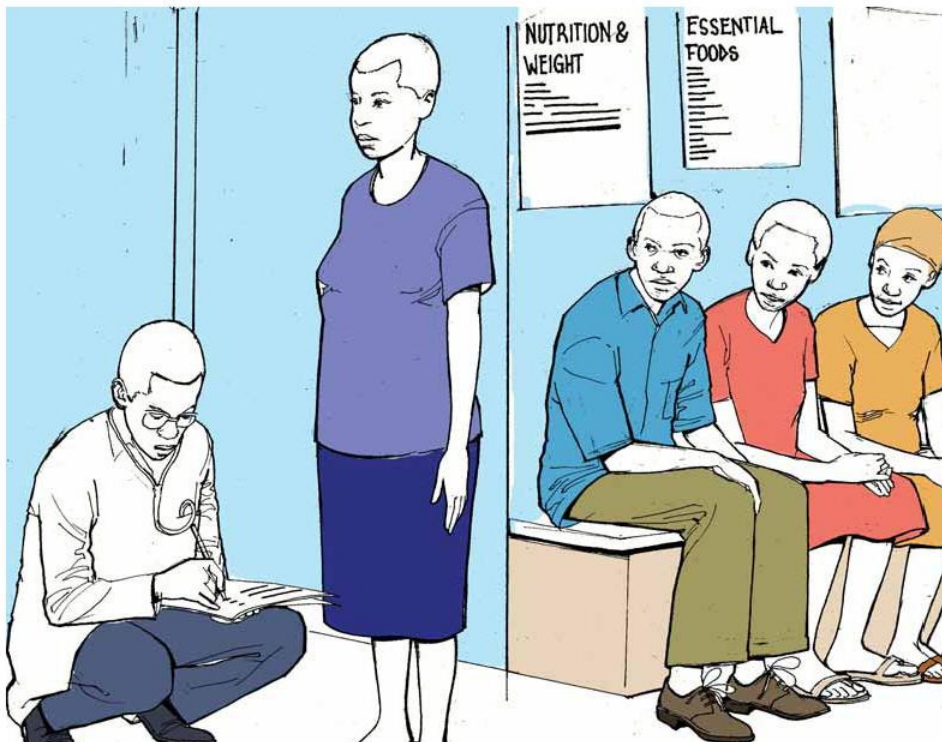
is made with water that has not been previously boiled.

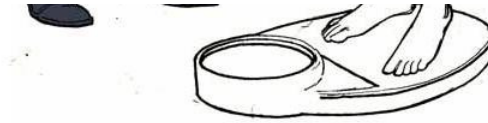
well

cooked.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Regular check-ups
are important for
early identification
of infections





home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

THEME 3 PREVENTING INFECTIONS

3.3 HAVE REGULAR CHECK-UPS

- I. Explain that there are other actions a PLWHA can take to avoid getting infections. These include:
 - Practicing abstinence or safe sex.
 - Complying with recommended immunization and medical treatment for PLWHA.
 - Having regular visits to a health/HIV/AIDS care and support centre.

- II. Explain that it is necessary for PLWHA to periodically visit a health/HIV/AIDS care and support centre. PLWHA should visit such facilities for:
 - Periodic medical check-ups for any infections to ensure early management and treatment.
 - Weight monitoring to ensure right action is taken early in case one is underweight or overweight.
 - Services that may be necessary (e.g. immunizations, deworming, ART, treatment of other infections and tuberculosis).
 - Information or skills that may be useful in managing HIV.

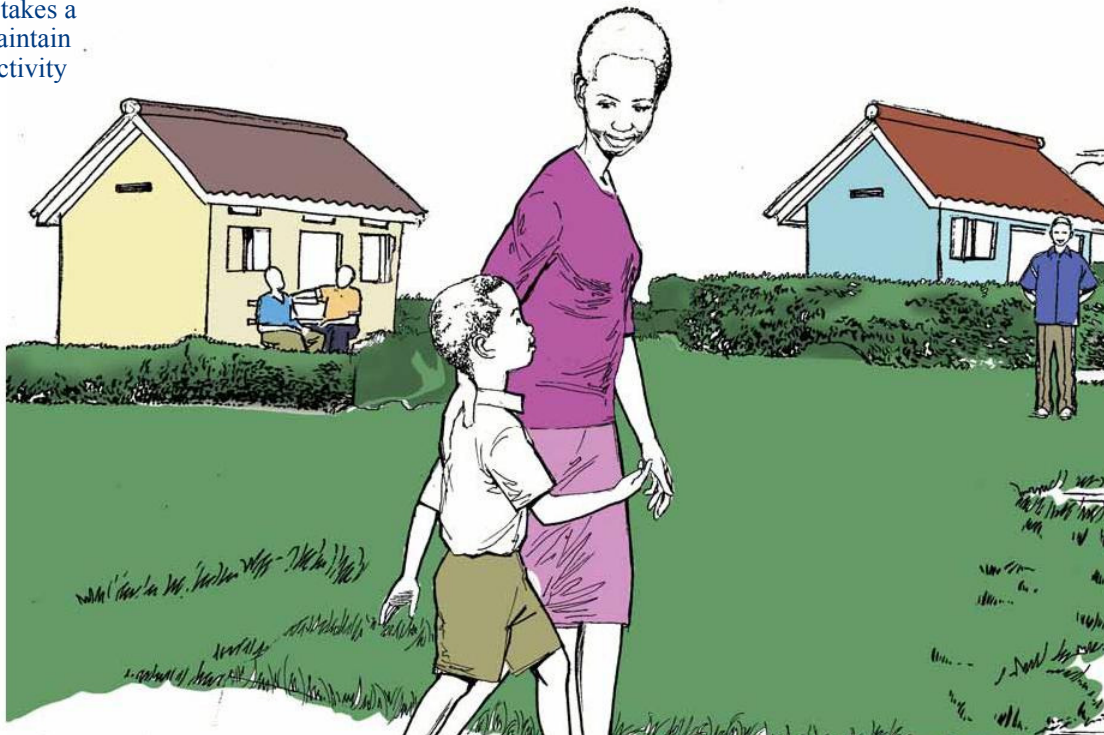
- III. Explain that in addition, PLWHA should seek medical care for diseases they may experience. Specific health problems may include opportunistic infections, but also other illnesses like malaria. The presence of all new and old symptoms should be explained to a health care provider on every visit to a health care facility.

- IV. Diseases and illnesses from the PLWHA may have about visiting

14. Discuss and analyze any fears the PLWHA may have about visiting health/HIV/AIDS care facilities.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

A woman takes a walk to maintain physical activity





home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

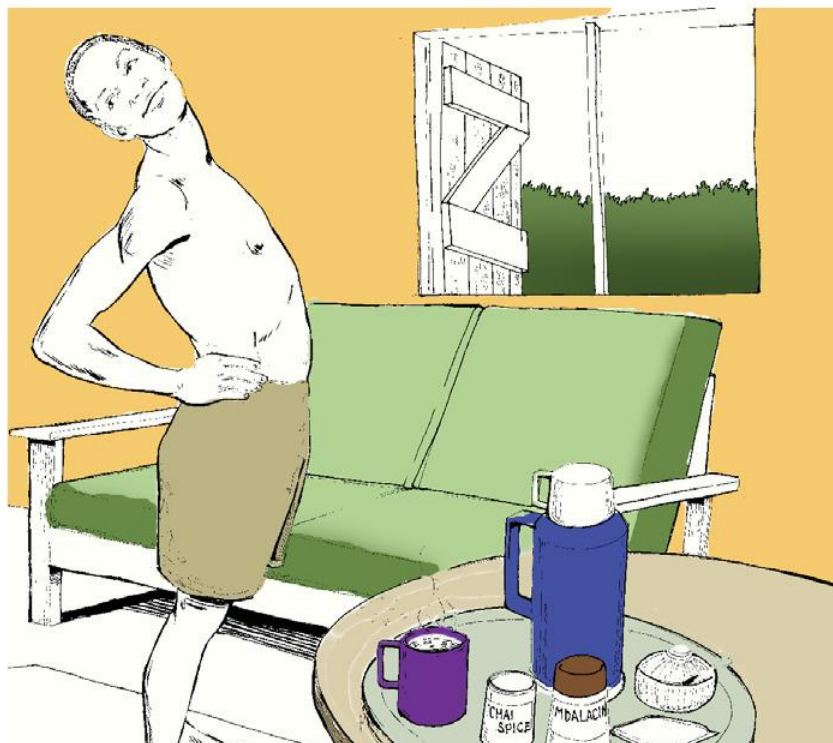
THEME 4 MAINTAINING PHYSICAL ACTIVITY

4.1 EXERCISE REGULARLY EXERCISES AND CONTINUE DAILY ACTIVITY

- I. Explain that it is important for PLWHA to maintain physical activity to:
 - Improve blood circulation,
 - Stimulate appetite and improve ones mood,
 - Burn fat to reduce chances of becoming overweight,
 - Prevent stiffness of joints and muscle aches and wasting,
 - Maintain and improve muscle tissue thickness.
- II. Ask the client to describe the kind of exercise shown in the picture. Find out what the client thinks about the usefulness of such an exercise for a PLWHA.
- III. Discuss with the client the kinds of exercises that they think they could easily do:
 - Taking short daily walks,
 - Simple regular movements of the arms and legs for at least 10-15 minutes while lying on a bed. If bed-ridden, get assistance to do the limb movement. Starting body limb movements early helps to prevent body pains.
- IV. Address any misconceptions about continuing physical activity for PLWHA.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Have a warm drink soon after waking in the morning or shortly before going to bed to help stimulate appetite.





home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

THEME 5 MANAGE DIET RELATED HIV/AIDS SYMPTOMS

5.1 LOSS OF APPETITE

- I. Explain that loss of appetite is a common symptom in PLWHA, which can reduce food intake.
- II. Discuss with the client ways to help increase appetite:
 - Do physical exercises that are possible given ones health condition. Exercises help to stimulate appetite.
 - Eat small amounts of food but frequently - 5-6 times a day.
 - Use favourite foods and spices to boost appetite.
 - Take a warm drink soon after waking up in the morning, and/or shortly before going to bed.
- III. Explain to the client that it is important to inform their care provider about loss of appetite.
 - Loss of appetite could be due to an infection, or to the side effect of drugs. Medical attention may be required.
- IV. If loss of appetite is very bad, advise the client to use a daily multivitamin in consultation with a medical provider to help maintain a good nutritional status.
- V. Advise the client to ensure adequate food intake by eating nutrient dense foods such as:
 - A mixture of groundnuts & simsim paste. This can be eaten on bread or as a sauce to accompany food.
 - Porridge made out of millet, maize, soya, sorghum and rice. It can be prepared with milk, sugar,

honey
Main meal of katogo or mugoyo.
egg.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Talk to friends to
help handle
depression





home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

THEME 5

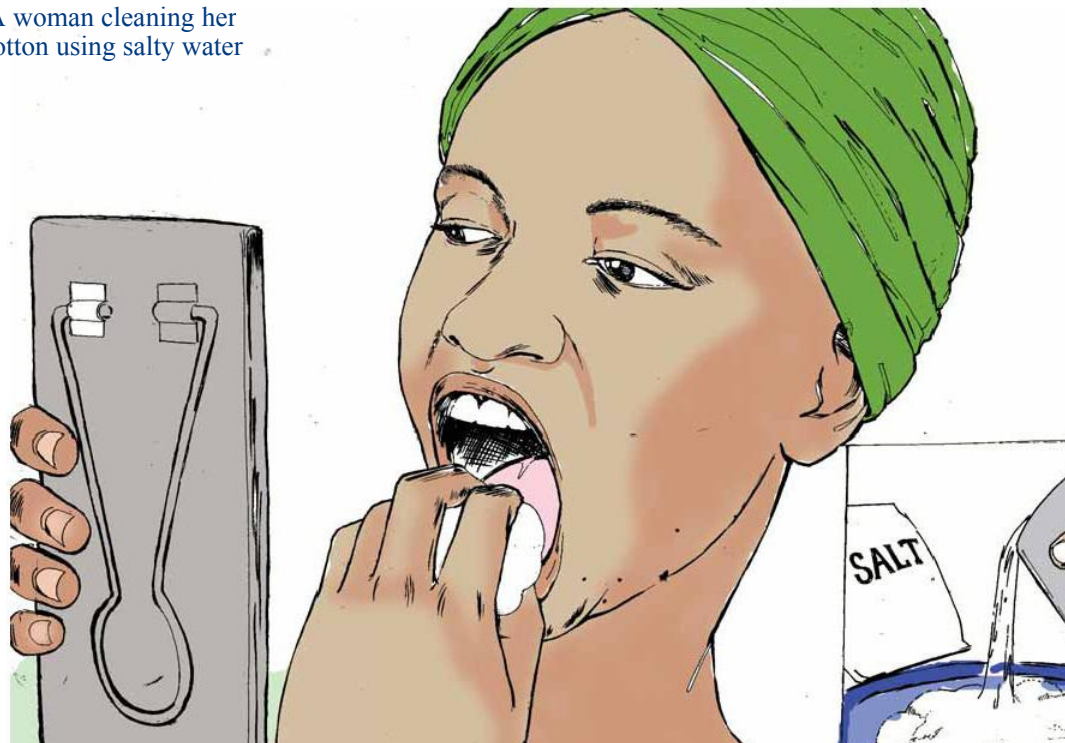
MANAGE DIET RELATED HIV/AIDS SYMPTOMS

5.2 DEPRESSION AND STRESS

- I. Explain that depression may occur in PLWHA.
- II. Sometimes being depressed may make one lose ones appetite.
- III. Discuss with the client ways of managing depression and stress. The illustration gives one example.
 - Spending time with relatives, friends or spiritual leaders to reduce moments of loneliness.
 - Eating favourite foods that do not cause discomfort.
 - Exercising. For example, taking daily short walks.
 - Avoiding alcohol and cigarettes, since they can worsen depression.
 - Taking juices and water more frequently.
 - Seeking medical attention when the need arises.
 - Getting enough rest/sleep. However, avoid self-medication with drugs that make you sleep. This may interfere with waking and eating times.
- IV. Refer the client for counselling or medical attention if they seem disinterested and do not wish to try out any of actions discussed, or if depression persists for a long time.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Oral thrush: A woman cleaning her mouth with cotton using salty water





home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

THEME 5

MANAGE DIET RELATED HIV/AIDS SYMPTOMS

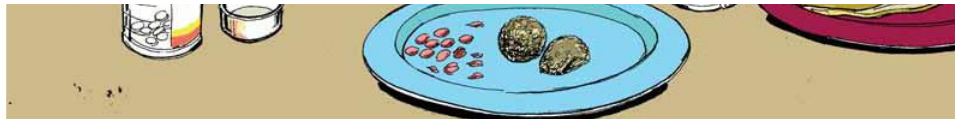
5.3 MOUTH SORES AND ORAL THRUSH

- I. Explain that mouth sores or thrush are a common opportunistic infection in PLWHA that can affect eating.
- II. Discuss with the client the importance of cleaning the mouth to manage painful sores in the mouth:
Cleaning helps to prevent infection, helps to stop the infection from spreading, and promotes the healing process.
To clean, use cotton wool with mildly salty warm water. If possible, rinse the mouth with 1 teaspoon baking soda mixed in a glass of warm boiled water.
Clean at least twice a day: morning and evening, and preferably after every meal.
- III. Describe the dietary measures that can be used to relieve sores in the mouth.
Eat fermented products, e.g. yoghurt.
Eat soft foods such as mashed food, soups and juices.
Drink liquids using a straw to ease painful swallowing.
Eat ripe pawpaw to help heal the wounds.
Drink or rinse mouth with sour water. (To make sour water, soak grains/cereals for 2-3 days: 1 cup grain, and 3 cups of cool boiled water. Cover while fermenting).
Avoid acidic foods like lemon and oranges.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

A man taking his
drugs with a snack





home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

THEME 5

MANAGE DIET RELATED HIV/AIDS SYMPTOMS

5.4 TUBERCULOSIS (TB)

- I. Explain to the client(s) that TB needs special dietary management. TB and its medication affect food intake and the way food is used by the body.
- II. Explain that TB infection increases the bodys need for energy. To avoid weakening their nutritional status, it is therefore important for PLWHA to increase their intake of energy by:
Having regular meals rich in energy giving foods and body building foods.
Taking nutritious snacks as often as possible, e.g. whole grain cereals like maize, sorghum, millet. (For more suggestions, refer to the book, Improving the Quality of life through Nutrition - A Guide for Feeding People Living with HIV/AIDS).
- III. Find out if the client is taking the TB drug Isonazaid. Explain that Isonazaid increases the bodys needs for vitamin B6 and it is therefore important for those taking Isonazaid to increase intake of foods that are rich in vitamin B6:
Whole cereals, animal products, beans, nuts, fish, meat, chicken, avocado, watermelons, and fortified cereals.
If necessary, the client may take vitamin B6 supplements. This should be done in consultation with the medical provider. Do not take vitamin B6 supplements without consulting a doctor as it can have toxic effects.
- IV. Emphasise that it is important

iv. Emphasise that it is important for the client to take drugs at the right time in right doses as prescribed by the health worker. This ensures effectiveness, prevents resistance to drugs, and limits infection of other family members.

Have regular medical check ups.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

A woman picking dark green leafy vegetables in a makeshift garden





home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

THEME 5 MANAGE DIET RELATED HIV/AIDS SYMPTOMS

5.5 ANAEMIA

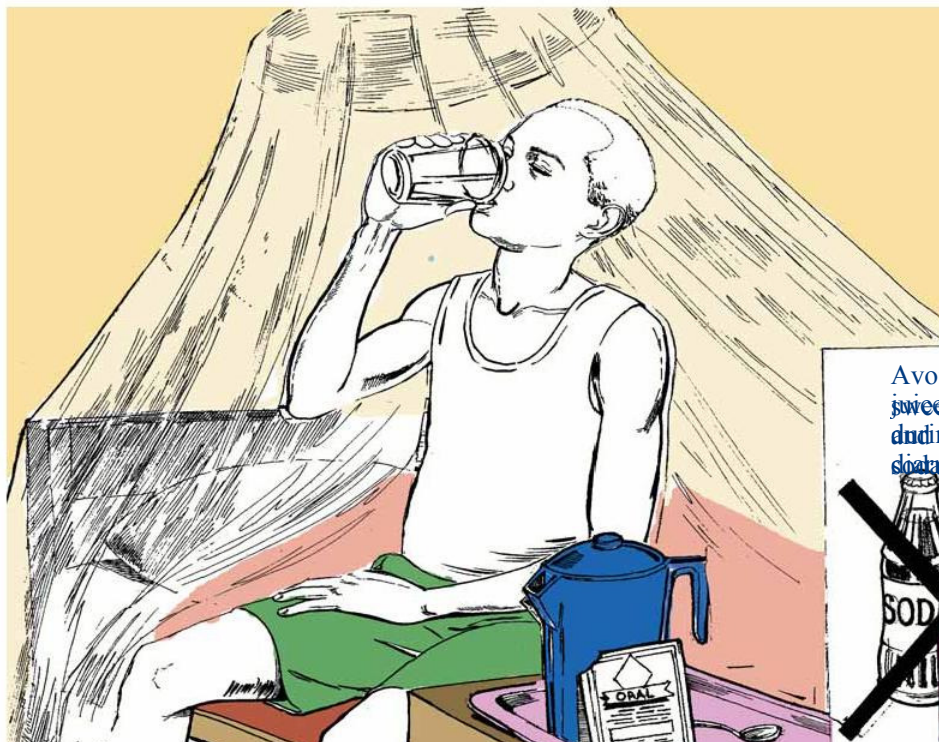
- I. Tell the client that anaemia is common in PLWHA and may contribute to general body weakness. It weakens the body's ability to fight infections.
- II. Explain that eating foods that are rich in iron can help prevent and treat anemia.
- III. Identify and discuss with the client foods rich in iron that are accessible to the client.
 - Dark green leafy vegetables (spinach, sukuma wiki, dodo, nnakati, etc.)
 - Animal foods such as eggs, fish, and meat.
 - Avocado leaves, purple hibiscus leaves, cassava leaves, potato leaves.
 - Eating fruits rich in vitamin C like oranges and mangoes is important because vitamin C helps the body to absorb iron.
- IV. Emphasise to the client that he/she needs to:
 - Have haemoglobin checked at least every three months.
 - Be de-wormed periodically, at least every six months.
 - Avoid drinking coffee/tea with meals and avoid drinking too much coffee/tea because it reduces the absorption of iron by the body.
 - Treat malaria as soon as noticed.
 - Use iron supplements BUT only after consulting and with advice

Use iron supplements **DO NOT** only after consulting and with advice from a health provider.

- V. Refer the client to a nutritionist or a health worker if the cause of anaemia is not likely to be diet related. (For example, the ARV zidovudine can cause anaemia.)

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Managing
diarrhoea: A man
taking an ORS
drink





home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

THEME 5

MANAGE DIET RELATED HIV/AIDS SYMPTOMS

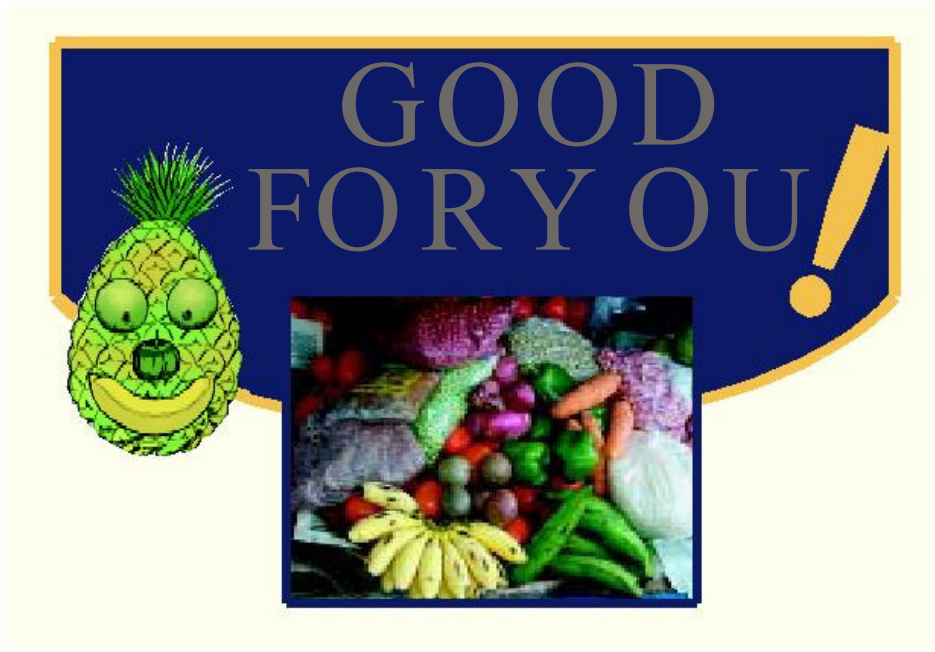
5.6 DIARRHOEA, NAUSEA and VOMITING

- I. Explain to the client that diarrhoea, nausea and vomiting commonly occur in PLWHA. These can greatly reduce food and fluid intake and absorption.
- II. Discuss with clients options for ensuring adequate food and fluid intake when one has diarrhoea, nausea and vomiting. These include:
 - Taking plenty of fluids, especially ORS, after every passing of a stool/bowel movement during diarrhoea.
 - Eating soft foods in small frequent amounts.
 - Avoiding sweetened juices, sodas, oily foods, coffee, and alcohol.
- III. Suggest the following dishes to help ensure continued food intake:
 - Plainly boiled bones (mokokony) or meat, fish and chicken, in the form of broth,
 - Porridge, especially obushera and soup porridge,
 - Bean/pea mushroom soup.
- IV. If the client has:
 - Nausea and vomiting: advise them not to eat and drink at the same time, and to avoid alcohol, coffee with strong or unpleasant odors.
 - Diarrhoea: advise them to avoid spicy foods, milk, fried or greasy foods, very hot or cold fluids, sweetened drinks.
 - Heart burn and bloated stomach: advise them to take lukewarm drinks like warm water after waking up to get rid of gas in the stomach, and to eat cereal porridge (or rice porridge) with little sugar with

V. To ~~prevent and manage diarrhoea and vomiting~~, it is important to observe ~~personal and food hygiene~~ ~~(graze/milk) with little or no milk~~ and

VI. Once symptoms are alleviated, one should resume regular diet, and one may need to eat more than usual for some time.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw



Increase your food variety of foods: intake and

Eat at least 3 meals a day.

Have snacks in between meals.

Eat even when sick or have no appetite. Eat small but frequent meals.

Eat plenty of fruits and vegetables every day.

Include fruits and vegetables of different colours.

If necessary, with advice from a health provider, use
multivitamin supplements.

Drink plenty of fluids, especially cool boiled water and unsweetened
fresh fruit juices.

Fats, oils and sugar are IMPORTANT BUT in small quantities

LIMIT Processed foods, Salt intake, Coffee, Tea, Sodas.

AVOID Alcohol Smoking Raw eggs Raw fish Partially cooked meat

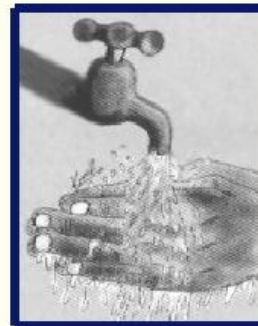
home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Practising good hygiene

Personal hygiene

Wash hands with soap and clean water:

- before handling, preparing and eating food,
- after using the toilet. If you do not have soap, use ash.



Food and water

Keep food and drinking water covered and stored away from insects, rats and other animals;

Cook food of animal origin thoroughly;

If you have to eat leftover food, heat it thoroughly before eating;

Do not keep raw food and cooked food together;

Wash fruit and vegetables before eating or cooking.

Living a positive lifestyle

Remember to have regular:

Medical check ups and immediate treatment for all infection.

Weight check ups at least once every month.

Continue with
your daily activities, like
doing housework if possible.

Exercise regularly.
Choose an exercise you enjoy and
can sustain, like walking.



Produced by Regional Centre for Quality of Health Care,
Makerere University Medical School, P O Box 29140, Kampala -Uganda,
tel. 256-41-530888, Fax 256 530876, Website: www.rcqhc.org
Technical support: FANTA and LINKAGES projects,
Financial support: USAID/REDSO/ESA.



The opinions expressed here are those of the author and do not necessarily reflect the view of USAID.

Image captured on 11/11/2011 at 11:20:11 AM

Nutrition
Care
People
Living
HIV/AIDS

An
frequent
asked



Produced by Regional Centre for Quality of Health Care,
Makerere University Medical School, P.O. Box 29140, Kampala -Uganda,
tel: 256-41-530888, Fax: 256-530876, Website: www.rcqhc.org
Technical support: FANTA and LINKAGES projects,
Financial support: USAID/REDSO/ESA.



[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Nutritional care for People Living with HIV/AIDS" is a publication of Regional Centre for Quality of Health Care (RCQHC), Kampala - Uganda. Technical support for development of this publication was provided by Food and Nutrition Technical Assistance (FANTA) and LINKAGES projects.

RCQHC is a regional quality of health care capacity development institute largely supported by REDSO/ESA in Nariobi and Makerere University, Kampala.

FANTA is supported by the Regional Economic Development Service Office/East and Southern Africa (REDSO/ESA) and the Office of Health, Infectious Disease and Nutrition of the Bureau for Global Health at the U.S. Agency for International Development (USAID), under terms of Cooperative Agreement No. HRN-A-00-98-00016-00 awarded

Agreement No. HRN-A-00-97-0007-00 awarded
to the Academy for
Educational Development (AED).

LINKAGES is supported by the Regional Economic Development Service
Office/East and Southern Africa (REDSO/ESA) and GH/HIDN of the
United States Agency for International Development (USAID), under the
terms of Cooperative Agreement No. HRN-A-00-97-00007-00.

*The opinions expressed herein are those of the authors and do not
necessarily reflect the views of USAID.*

October 2004

For copies of this book contact:

Regional Centre for Quality of Health Care
Makerere University Medical School,
P O Box 29140, Kampala -Uganda,
Tel. 256-41-530888, Fax 256 530876

FAQ Nutrition and HIV/AIDS - RCQHC



[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Acknowledgments

This publication is a product of the Regional Centre for Quality of Health Care (RCQHC). A number of people and organisations contributed to the development of this booklet. The content was drafted by the RCQHC, FANTA and LINKAGES projects, Mary Materu of CONSENUTH in Tanzania and Gakenia Wamuyu Maina of IPH. Additional comments were given during a national workshop held to review the materials in Jinja, May 2004.

Appreciation is expressed for technical input from participants of the Jinja 2004 workshop, specifically, Karen Kyampaire Apophia and Denis Okwar of ACDI/VOCA; Sande Julius of AIC Uganda; Phoebe Nabongo of Infectious Disease Institute, Mulago; Mulindwa Rwabaingi of Joint Clinical Research

Centre; Mary Butamanya and Sheila Nyakwezi of Mildmay; Ursula Wangwe of Ministry of Health; Magero Jacinta of NACWOLA; Faith Akiiki of National Forum of PLWHA; Maria Nanyonga and Resty Ingabire of Nsambya Home Based Care; Joy Elizabeth Ogutu of PATCH CONSULT; Samalie Bananuka of STD/ACP Ministry of Health; Penninah Namusi, Hellen Ekideit and Juliana Nyombi of TASO; Peter Ddamulira of THETA; Lilian Nakato of Uganda HIV/AIDS Control Project; and Irene Kiiza of Livelihood Security Program- World Vision. Gratitude is also due to Dr. Joel Okullo, Director of the RCQHC in Uganda for the leadership provided in helping us produce this booklet.

The RCQHC also appreciates the review comments provided by Tony Castleman, Lora Iannotti, Dorcas Lwanga, Robert wadime, Sandra Remancus, and Liz Thomas of AED

October 2004



FAQ Nutrition and HIV/AIDS - RCQHC

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Abbreviations and acronyms

AIDS Acquired Immuno-Deficiency Syndrome

ARVs Anti-retroviral Drugs

HIV Human Immune Virus

OIs Opportunistic Infections

PLWHA Persons Living With HIV/AIDS

WHO World Health Organisation

FAQ Nutrition and HIV/AIDS - RCQHC



[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Table of contents

Acknowledgements.....	ii
Abbreviations and acronyms.....	iii
Introduction.....	v
Booklet use.....	vi
Section 1: The link between nutrition and HIV/AIDS.....	1
Section 2: Dietary intake and food access by PLWHA.....	4

Section 3: ARVs and nutrition.....	16
Section 4: Traditional herb therapy.....	20
Section 5: Maintaining body composition.....	24
Glossary.....	29
Bibliography.....	30



FAQ Nutrition and HIV/AIDS - RCQHC

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Introduction

People living with HIV/AIDS (PLWHA) need correct information about food and nutrition.

Providing PLWHA with this information will help them make the best food and nutrition choices for proper HIV/AIDS management and improved quality of life.

This booklet has answers to commonly asked questions by PLWHA and caregivers. The questions are grouped into five sections:

Section 1: The link between nutrition and HIV/AIDS

Section 2: Dietary intake and food access by PLWHA

Section 3: ARVs and nutrition

Section 4: Traditional herb therapy

Section 5: Maintaining body composition

FAQ Nutrition and HIV/AIDS - RCQHC



[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Booklet Use

Who should use this booklet.

Counselors, health workers, trainers, and PLWHA, their families, and other care-givers. Even people without HIV/AIDS will find this booklet useful.

When should this booklet be used.

The booklet can be used during counselling sessions with PLWHA, or during education at different fora with PLWHA. Trainers can use it to respond to questions during training sessions.



FAQ Nutrition and HIV/AIDS - RCQHC

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

SECTION 1

The link between nutrition and HIV/AIDS

1. What is a good nutritional status.

A good nutritional status is when the body has enough and right kinds of food to meet its requirements for proper functioning, growth, repair and maintenance of health.

How does HIV/AIDS affect the nutritional status of PLWHA.

PLWHA are vulnerable to poor nutritional status because their bodys food requirements are increased yet they have poor food intake.

FAQ Nutrition and HIV/AIDS - RCQHC



[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

HIV worsens the nutritional status of a PLWHA. This is because:

HIV/AIDS increases the body's requirement for food.

HIV/AIDS leads to opportunistic infections, which are often associated with increased body nutrition requirements and poor food intake.

Drugs taken by PLWHA like Antiretrovirals (ARVs) are associated with side effects that may reduce food intake. Increased body nutrition requirements coupled with poor food intake will lead to a poor nutritional status.

2. Why is good nutrition important for PLWHA.

Good nutrition is important for the well being of a PLWHA because it:

Strengthens the body's protection and recovery from diseases,
especially in the early stages of

especially in the early stages of infection. This helps to delay progression of HIV infection to AIDS.

Promotes adequate storage and availability of the required nutrients. This is because HIV/AIDS and opportunistic infections increase the body's needs for nutrients.

Helps maintain body weight and muscle thickness. These are important for maintaining the strength and independence of PLWHA.

May make taking of medicines bearable and help the medicines work better.

PLWHA should maintain a good nutritional status. They can do this by:

Eating a balanced diet. The diet should contain a variety of foods including energy giving foods (cereals, tubers, roots, sweet fruits, fats and oils), body building foods (legumes, meat, milk, eggs, seeds), protective foods (fruits and vegetables); and plenty of fluids.



FAQ Nutrition and HIV/AIDS - RCQHC

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Exercising of muscles.

Good food hygiene practices to prevent infections.

Taking ARVs if prescribed by a doctor. These drugs reduce viral load. load. This boosts the immune system and reduces the frequency of opportunistic infections, thereby strengthening nutritional status.

3. In the absence of ARVs can good nutrition be sufficient for quality life of PLWHA.

Though good nutrition can help maintain and improve the quality of life of PLWHA, it is not sufficient on its own. Food helps boost and maintain immunity. However, when the viral load in the body is high, nutrition alone cannot fully replace the lost immunity.

Prevention and proper treatment of HIV related infections is important to avoid weakening the

important to avoid weakening the nutritional status further. ARVs are vital because they reduce the viral load and the rate at which the body's immunity is destroyed.

To benefit from good nutrition, PLWHA have to:

Regularly monitor their weight. If there is any unintended weight loss over a period of a month, they should seek help from a health worker.

Eat a large enough quantity of food and include a variety of foods in their meals.

Promptly seek health care for any other diseases.

Adopt good personal, food, and water hygiene to prevent infections that can be transmitted through food/water.

Practice a positive life style to maintain physical and emotional health. (e.g. avoid alcohol and smoking, exercise frequently, and seek psychosocial counselling if required).

FAQ Nutrition and HIV/AIDS - RCQHC



[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

SECTION 2

Dietary intake and food access by

PLWHA

1. What are the best foods for PLWHA.

PLWHA need food from all food types. The food types include energy giving foods, body building foods and protective foods.

HIV increases the energy needs of PLWHA. Therefore

PLWHA need to eat foods from all food types in higher quantities and/or more frequently.

PLWHA are advised to reduce the intake of refined sugars like cane sugar, sweetened juices and foods. It is also advisable to limit fats, oils, coffee, tea and sodas. PLWHA should avoid alcohol, smoking, raw eggs, raw fish and



smoking, raw eggs, raw meat and
partially cooked foods.
FAQ Nutrition and HIV/AIDS - RCQHC

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Food groups	Examples of food types	Special preparation considerations
<p>Energy giving foods <i>(Cereals, roots, sweet potatoes, yams, chapatti, bananas and posho, rice, bread, millets. tubers)</i></p> <p><i>(Fats, oils and Ghee, cooking oil, sugars-in small cooking fat, butter, (siagi), margarine, sugar, honey)</i></p>	<p>Matooke, cassava, irish potatoes, maize,</p>	<p>Avoid deep frying.</p>
<p>Body building foods <i>(Legumes and yoghurt, simsim, groundnuts, foods of animal origin) nsenene.</i></p>	<p>Beef, goat, milk, pork, chicken, fish, liver, kidney, beans, peas, until well cooked. soya beans, odii, mukene, nswa,</p>	<p>Cook all animal products until well cooked. Do not eat raw eggs.</p>

<p>Protective foods (Vegetables) ngobe,</p>	<p><i>Nakati, dodo, jobyo, carrots, Avoid cutting vegetables ntula, tomatoes, bbuga, cabbage, sukuma wiki, Avoid cutting vegetables pumpkin, pumpkin leaves, spinach, tomato.</i></p>	<p>before washing them. into very small pieces. Cook immediately. Cook for a short time. Avoid adding a lot of water. Eat immediately after cooking.</p>
<p>Protective foods (fruits) water</p>	<p>Banana, pawpaw, matugunda, Wash properly before melon, mango, guava, eating. passion fruit, pineapple, ntutunu, orange, jambula, tangerine (mangada), apple, jackfruit, tomato, avocado.</p>	<p>Do not eat rotten fruits.</p>
<p>Beverages</p>	<p>Fruit juice, water, tea. Alcohol should be avoided.</p>	<p>Boil drinking water and water for making fruit juice Keep drinking water in a clean covered container.</p>

FAQ Nutrition and HIV/AIDS - RCQHC



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

REMEMBER: No single food can meet all the nutritional requirements of an individual, except breast milk for a baby during the first six months. Therefore it is important to eat adequate and different types of foods in a meal.

2. Why are some PLWHA advised not to take red meat.

Red meat includes beef, goat meat, mutton, and game meat.

Although red meat has many nutrients which are important for the body, there are different reasons why some PLWHA may be advised not to eat it:

- i. Red meats have high fat levels, and eating it may increase the level of fat in the blood. This increases the risk of heart disease, liver complications and high blood

liver complications and high blood pressure and may be of particular concern if one is on ARVs. If a PLWHA has high blood fat levels, s/he needs to trim fat off meat and avoid fatty red meat.

- ii. Some people have problems digesting red meat, especially if taken in large amounts. So they may be advised to reduce the intake of red meat.

Meat digestion can be improved by:

- i. Adequately chewing the meat or using minced meat if available.
- ii. Pounding meat until soft before cooking, especially where minced meat is not available.
- iii. Using spices in marinating and cooking meat. Spices such as raw pawpaw, lemon, ginger and garlic can help to soften the meat.
- iv. Eating meat together with pawpaw.



FAQ Nutrition and HIV/AIDS - RCQHC

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

It is recommended that red meat be limited and replaced with white meat. White meat includes fish, skinless poultry, pork and edible insects.

3. Is it appropriate for PLWHA to be vegetarians.

It is appropriate for PLWHA to be vegetarian if:

They eat all food types required by the body (i.e. energy giving, protective and body building foods). This can be achieved by eating a combination of different plant foods and dairy products.

It is important to eat adequate amounts of body building foods.

Soya foods, legumes and dairy products are a good source of body building foods.

4. What is the difference between an egg from a local chicken and that

local chicken and that
from an exotic chicken.

From the nutritional point of view they are the same.

The nutrients from both eggs, like vitamin A, iron and protein are the same.

It is therefore advisable to eat any egg that is available.

5. Is it true that eating raw eggs is good for PLWHA.

No, it is not true. It is not advisable for PLWHA to eat raw eggs.

A raw egg may contain dangerous organisms (e.g. salmonella or a bacteria that cause infections leading to abdominal pain, nausea and diarrhoea).

To avoid this, the following is recommended:

Prepare an egg until there is no slippery liquid.

If you are making hard boiled eggs, boil for 10 minutes more after the water has started boiling.

FAQ Nutrition and HIV/AIDS - RCQHC



[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Wash utensils used for whipping raw eggs with water and soap before using them again.

Do not buy or use cracked eggs for food. Cracked eggs provide breeding ground for bacteria that may cause diseases.

REMEMBER: PLWHA's bodies have weakened body ability to fight diseases. It is important to avoid anything that may increase the risk of infection.

6. Which milk is better for PLWHA.

Fermented, yoghurt/sour or fresh milk.

All types of milk have important nutrients. One can use any type depending on what is available and preferred.

Fermented milk/yoghurt is beneficial because:

It is easily digested. It helps in the digestion and absorption of other foods.

It may inhibit the growth of oral thrush, which is common among PLWHA.

Some people have an intolerance for fresh milk. They may get diarrhoea, bloating of the stomach, or stomach ache. They are advised to take fermented milk. PLWHA who cannot take either fresh or fermented milk should try other body building foods.

If a PLWHA has diarrhoea, she may need to avoid taking certain drugs with milk or to stop drinking fresh milk until the diarrhoea stops.

7. Which juice is recommended for PLWHA.

Fresh fruit or vegetable juices are good for PLWHA.

They have enzymes that assist in the digestive process.



FAQ Nutrition and HIV/AIDS - RCQHC

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

This conserves vital body energy. One does not feel weighed down after drinking juices.

Fruit or vegetable juices should be freshly and hygienically prepared using clean boiled water.

PLWHA should avoid taking:

Fruit juices that have been kept for long, especially outside the fridge. Their sugars break down into simple sugars. These sugars go to the liver and transform into fat. This may be harmful to the body.

Acidic juices (from fruits like oranges, passion-fruit) in case of a long bout of diarrhoea, or sores in the mouth or the gut.

Processed and ready to drink juices. Most of these juices are not from fruits. They are made from coloured

from fruits. They are made from coloured water, flavour and sugar. Processed juices do not have living enzymes which help in digestion. The nutrients in these juices are usually destroyed due to over processing. Juices sold on the streets in polythene bags.

8. Why is it necessary for PLWHA to drink a lot of water.

Water is an essential nutrient to the existence of humans. It carries most nutrients, gases, enzymes, and wastes of body processes. It also has a role in regulating body temperature.

PLWHA may lose water due to illnesses. For instance, fever may cause loss of water through sweating. Vomiting and diarrhoea may also lead to water loss.

Water helps in cleaning the body of wastes of metabolism, disease, and the toxicity from drugs like ARVs.

FAQ Nutrition and HIV/AIDS - RCQHC



[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Therefore, one needs to drink at least 8 glasses of clean water per day to replace the water that is lost and meet the body's water needs.

Drink clean water to avoid water-borne diseases. HIV-infected people, especially those with low CD4 counts (less than 100) should be very careful with the water they take. It should always be boiled and if possible filtered. Boiling water for 5-8 minutes kills most of the germs.

Beware of bottled water. Not all bottled water is safe for drinking.

Drinking distilled water does not add value over well-boiled and filtered water.

If one has diarrhoea or is vomiting, use oral rehydration solution that contains sugars and salts. It is a better rehydration

crystallisation
fluid
than

9. **Water** **Do red or purple coloured fruits, vegetables or drinks increase blood (haemoglobin).**

Most coloured (red, purple and even yellow and dark green) fruits and vegetables contain nutrients, like vitamins and minerals, in large quantities.

Some of these nutrients are necessary for blood formation.

A wide number of traditional vegetables contain iron that is necessary for making blood. An example of this is rozela plant (hibiscus specie), which is red in colour. It is rich in iron.

Eating a variety of vegetables or fruits of different colours is healthy.

However, not all fruits and vegetables with these colours increases blood (haemoglobin).



FAQ Nutrition and HIV/AIDS - RCQHC

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

REMEMBER: Avoid artificial red or purple coloured drinks. They do not increase blood. They are usually a mixture of water, sugar, artificial flavours and colour.

10. Are fats and oils recommended for PLWHA.

Fats and oils are concentrated and good sources of energy.

They are recommended for PLWHA.

They help in absorption and transportation of fat-soluble vitamins (A, D, E, K). It is important to make fats and oils part of meals.

However, fats and oils should be used in small quantities as they increase total fat levels in the blood. Fats block the blood vessels.

This increases the risk

~~This increases the risk~~

of heart problems.

Reduce intake of fat from whole milk dairy products, chicken skin and fatty meat. They raise fat levels in the blood.

Olive oil, corn oil, flaxseed and canola oil, fats from fish and soyabeans are healthier.

For some ARVs the intake of fats may need to be increased (e.g. saquinavir), while for others fat intake may need to be reduced at the time of taking the drug (e.g. efavirenz or zidovudine).

Check with your counselor, nutritionist, or doctor.

The following is recommended:

Limit the intake of fat during diarrhoea, but resume normal consumption when diarrhoea stops.

Fats and oils are among foods necessary for weight gain. For a PLWHA experiencing weight loss, fats are an important part of one's diet. However, they should be consumed in small quantities if a PLWHA is gaining a lot of weight.

FAQ Nutrition and HIV/AIDS - RCQHC



[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

11. Should PLWHA take sugar.

Sugar provides a concentrated form of energy for PLWHA.

However, sugars like table sugar, regular sodas, fatty desserts, and even some sweetened fruit juices that quickly get broken down to simple sugar should be avoided or taken in small quantities. The liver transforms simple sugars into fat. This may lead to increased levels of fat in the blood.

The following is recommended:

PLWHA can continue taking sugar as part of their diet, but it should be in small quantities.

Adding sugar to drinks or some foods increases energy intake.

This is useful if a PLWHA has lost weight and wants to gain weight.

Sugar intake should be decreased or avoided when one has mouth thrush or sores. The

mouth ulcers or sores. The organisms causing this condition thrive on sugar. After this condition is cured, normal sugar consumption can resume.

12. What is the importance of honey in PLWHA.

Honey, like sugar, is a concentrated source of energy. It helps in weight gain and has small amounts of vitamins and minerals.

Honey contains antioxidants, which get rid of harmful free radicals in our bodies.

Honey also has antibacterial properties, and has been used to relieve/soothe coughs, wounds and burns.

If honey is available, PLWHA can use it, and just like other sugars, it should be in small quantities.

Honey's importance in HIV/AIDS has not been demonstrated.



FAQ Nutrition and HIV/AIDS - RCQHC

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

13. Is tea or coffee bad for PLWHA.

Tea and coffee contain caffeine and other substances that may affect absorption of nutrients. Caffeine (also found in chocolates and cola sodas) interferes with the absorption of iron, especially iron from foods of plant origin.

Coffee and tea have very low nutrient values.

They should be taken in small quantities.

Taking light tea or coffee, and reducing the quantity and frequency helps to reduce caffeine intake.

Avoid taking tea or coffee during meals to reduce interference with iron absorption. If taken, it is advisable to have tea or coffee one hour before or after a meal. Fruit juices or drinks made from boiled spices can be taken instead of tea or coffee.

Coffee and tea should be avoided in case of

Coffee and tea should be avoided in case of dehydration, high blood pressure, and heartburn.

14. Does alcohol have any nutritional value for PLWHA.

Alcohol does not have any nutritional value. PLWHA are advised to avoid taking alcohol because it:

Interferes with the effectiveness of most drugs (including ARVs).

Increases the likelihood of drug side effects and worsens side effects.

Does not have the nutrients needed by PLWHA.

Alcohol has many other negative effects on the body:

Interferes with food intake, digestion, absorption and storage of nutrients (Vitamin A, D, E, K and B) in the body.

Inhibits availability of enzymes, which are important in digestion of food and absorption of nutrients in the body.

FAQ Nutrition and HIV/AIDS - RCQHC



[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Damages cells in the digestive system, which are important in absorption of nutrients.

Prevents the use of absorbed nutrients by interfering with the transportation and storage of these nutrients.

May deplete water and salts from the body.

May cause anaemia as it interferes with absorption and use of vitamins and minerals necessary for blood formation.

Increases the risk of getting chronic diseases such as stomach ulcers, heart diseases and cancers of the breasts, mouth, throat, larynx and liver.

Affects thinking and decision making capacity even in regard to safe sex.

Alcohol weakens the body.

15. Should PLWHA take micro-nutrient supplements. If so, which ones should be taken.

Adequate intake of vitamins and minerals has been linked to slower disease progression and delayed onset of opportunistic infections (OIs).

Vitamins and minerals should MAINLY be obtained through eating a variety of foods, fruits and vegetables. Food provides the best source of micronutrients.

If it is not possible to consume a sufficient quantity and quality of food, or in the case of anaemia or vitamin A deficiency, daily multiple-micronutrient supplement is recommended. Taking multiple micronutrient supplements is preferred to individual micronutrients.



FAQ Nutrition and HIV/AIDS - RCQHC

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Excessive doses of some micronutrients (like vitamin A and D) can be toxic. Some people who take high doses of vitamin C experience intestinal upset or kidney complications. It is advisable to adhere to the Recommended Daily Allowance.

It is important to remember the following:

Supplements are not an alternative to a balanced meal. If taken, they should supplement the food eaten.

Supplements do not treat HIV/AIDS. They improve the immunity of the body to fight against infections.

Get advice from a health professional on which supplements are necessary and the required amount.

It is not common to overdose or consume toxic levels of a nutrient through food intake but

nutrient through food intake but taking supplements may lead to overdose or toxicity.

Other means of supplementation may be recommended by a doctor if the PLWHA is severely deficient and has had infections or other conditions (e.g. mal-absorption, diarrhoea, specific intolerances, severely malnourished).

The diet supplements industry is not well regulated in many countries. What is sold may not contain what is written on the label.

FAQ Nutrition and HIV/AIDS - RCQHC



[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

SECTION 3

ARVs and nutrition

1. Should PLWHA on ARVs eat any special foods.

There are no special foods for PLWHA on ARVs. Like other PLWHA, they need to:

Eat meals with a variety of foods: energy giving foods (carbohydrates and fats), body building foods (proteins) and protective foods (vitamins and minerals).

Eat more food as their bodies require more energy

Take a lot of clean safe water and fresh juice.



FAQ Nutrition and HIV/AIDS - RCQHC

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Some ARVs may require:

Taking with meals (e.g. ritonavir) or before meals (e.g. zidovudine).

That they may be taken with more fats (e.g. saquinavir) or with a limited amount of fatty foods (e.g. zidovudine, efavirenz).

Avoiding some foods. Patients on Indinavir need to avoid grapefruit. Patients on Nevirapine need to avoid St Johns Wort.

Those on Saquinavir should avoid garlic supplements.

In all situations, people on ARVs are advised to avoid alcohol.

Side effects

2. What causes continuous nausea and dizziness among PLWHA.

The nausea may be caused by the HIV/AIDS or

The nausea may be caused by the HIV/AIDS or it may be due to medicines. It is a common side-effect of most ARV drugs. It can also be a side-effect of other drugs taken to treat opportunistic infections.

If it is associated with the drug, nausea normally diminishes in 2 to 6 weeks.

If the symptoms continue after 8 weeks, see a health worker. The health worker will find the offending medicine and may change to another drug if possible or may continue with nutritional management of the symptoms first.

3. Why do some people on ARVs get terrible taste in their mouth.

Some ARV drugs like lamivudine and zidovudine may lead to change in taste. This may go on for weeks.

FAQ Nutrition and HIV/AIDS - RCQHC



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

REMEDIES FOR CHANGE OR LOSS OF TASTE

Try to use flavour enhancers like spices and lemon or rinse the mouth with water.

4. Why is it that people on ARVs increase fat in different parts of the body.

The increased fat is a side-effect of some ARVs like stavudine and lamivudine. Little can be done other than change the drug.

Some people experience this during the start of the treatment, (e.g in the first 6 months) and then stabilise.

However, not every increase in fat is due to ARVs. Sometimes it is due to intake of more energy (carbohydrates, fats and sugars) than the body uses.

One can try to prevent the increased fat levels by:

Dietary management: reducing intake of fats, especially saturated fats like animal fats (ghee, butter, cream, fatty-meat), processed fats/oils, sugars and alcohol.

Eating more fibre (fruits, vegetables, legumes, whole grains)

Maintaining a healthy weight through manageable exercises (jogging and aerobics) or physical activity.

5. Is it true that some of the ARV drugs make people lose shape/fat on arms, legs, and face.

Yes, it is true.

This condition is called lipodystrophy.

Lipodystrophy seems to be associated with some drugs more than others. Drugs like ritonavir and stavudine/d4T) have higher risk of fat loss.



FAQ Nutrition and HIV/AIDS - RCQHC

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

The condition could also be due to low levels of hormones like testosterone or a combination of the drug effects and low hormone levels.

There is very little in terms of diet that can be done to rebuild fat. Your doctor may recommend an early shift to ARVs that are less likely to cause lipodystrophy (like abacavir and tenofovir).

FAQ Nutrition and HIV/AIDS - RCQHC



[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

SECTION 4

Traditional herb therapy

Most traditional herb therapies taken for HIV-related disease and symptoms have not been subjected to formal clinical research. Therefore their effect on the course of the HIV disease is unknown.

Some people report short-term benefits of some of these herbs in soothing or relieving some symptoms. Unlike herbal therapies, ARVs have a demonstrated positive effect on slowing progression of HIV.



FAQ Nutrition and HIV/AIDS - RCQHC

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Some herbs may:

Have restrictions on food intake,

Have negative effects in the body,

Interfere with the effectiveness of drugs one may be taking.

There is nothing wrong with using alternative therapies if:

- i. They are used to supplement rather than replace standard therapy.
- ii. They are not poisonous and do not overburden your system, e.g. liver or kidney.
- iii. There are no significant negative interactions with other medications.
- iv. They have the potential to prevent, alleviate and/or cure symptoms (e.g. lower blood pressure, increase energy, improve digestion, reduce

- improve digestion, reduce severity of diarrhoea, etc).
- v. They are provided by a qualified traditional medicine/alternative medicine practitioner with adequate training background, and preferably who is registered and certified.
 - vi. The medical doctor is continuously informed of what one is taking.

Unfortunately, there is no good information on the toxicity of herbal remedies or their interactions with other medicines.

Therefore a PLWHA should realise that taking herbal therapies may involve some risk.

1. Should garlic be recommended for PLWHA.

Garlic has been found to have ingredients that have antibacterial, antiviral, and anti-fungal functions, particularly in the gut, lungs, throat and mouth. Thus garlic may have some health benefits for PLWHA, but there is no clear medical

evidence on this.

FAQ Nutrition and HIV/AIDS - RCQHC



[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Garlic has been used to manage high fat and bad fat levels in the blood. It may be useful for patients with mild hypertension, and for reducing lipids and fat deposits in the body.

Garlic helps in improving digestion. It can be useful for patients with digestion problems.

It can be added to food when cooking, in drinks, salad or eaten raw. However, taking too much garlic may cause nausea or vomiting. It is recommended to take not more than 6 cloves per day especially when eaten raw.

REMEMBER:

People on the ARV saquinavir should avoid garlic supplements or too much garlic. It reduces the effectiveness of saquinavir.

2. Does Moringa have any nutritional value to PLWHA.

Moringa has some nutrients like vitamin A (beta carotene), calcium and iron. It may be a good source for these nutrients.

Traditionally it is said to have antibiotic activity, and is used to treat different illnesses. Compounds in its leaves and seeds are also said to have purifying effect on water.

Moringa is usually added to food or drinks (like tea).

Studies on its effect on immunity and use for HIV/AIDS are ongoing. Currently there is no evidence of its medical benefits to PLWHA.

3. Should PLWHA drink aloe-vera.

Aloe-vera has been used for medicinal purpose for years. The plant is said to have antibiotic properties and to strengthen the bodys ability to fight infections. Traditionally it has been used



FAQ Nutrition and HIV/AIDS - RCQHC

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

in the healing of minor wounds and burns.

However, studies are ongoing to assess the benefits of the plant among PLWHA and currently there is no evidence of its medical benefits to PLWHA.

4. Are mushrooms recommended for PLWHA.

Yes PLWHA can eat mushrooms as part of their daily food. They provide some minerals and vitamins.

Mushrooms are useful for maintaining good health. They may be part of a meal for PLWHA. However, some mushrooms are known to be poisonous. Get more information about edible mushrooms.

Mushrooms have been used as traditional herbal medicines in China and Japan for thousands of

China and Japan for thousands of years. In Asia they are commonly used for pain relief and treating diseases like arthritis.

Mushrooms have components that are known to be anti-viral and may have the potential of treating viral infections. However, research into the field is in early stages. Currently there is no evidence that mushrooms have medical benefits for PLWHA.

FAQ Nutrition and HIV/AIDS - RCQHC



[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

SECTION 5

Maintaining body composition

1. Why and how do PLWHA get very thin.

Not every PLWHA loses weight. However, some PLWHA lose 10-20% of their normal weight within a very short period.

Factors that may contribute to weight loss in PLWHA include:

The virus causes changes in the way the body uses and distributes food, especially if the viral load is high. It also causes changes in hormone levels (e.g testosterone) in the body which also may contribute to weight loss.

Inadequate food intake, which may be due to loss of appetite, inability to swallow due to throat infections, depression, lack of food, or side effects of medication.



FAQ Nutrition and HIV/AIDS - RCQHC

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Digestive system infections (diarrhoea, constipation, poor absorption) that may prevent food from being well absorbed. Chronic and severe infections which increase demand for foods, especially energy giving foods. If this demand is not met the body breaks down fat and muscle tissue. Fat loss (lipodystrophy), especially on the face, arms and legs, as a side effect of ARVs (e.g. stavudine and zidovudine).

2. Is it possible for a PLWHA who is losing weight to gain it.

It is possible for the majority of the PLWHA to regain weight. However, how fast a PLWHA gains weight will depend on a number of factors. Causes of weight loss and factors preventing them from

gaining weight
The amount and type of food one eats compared to how much
include.
the body requires and use.

If one takes in more food than is required by the body, one
will gain weight.

If one takes in less food than is required by the body, one
will lose weight.

3. How can PLWHA increase weight if they have been losing it.

They can prevent further weight loss and gain weight by:

- i. Eating meals with foods that are rich in energy (e.g.
fermented products of millet, sorghum, and maize) and body
building foods, especially from animal sources (e.g milk, meat
and eggs).

FAQ Nutrition and HIV/AIDS - RCQHC



[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

- ii. Increasing the amount of food eaten and the number of meals and snacks one has in a day.
- iii. Promptly treating infections/diseases.
- iv. Using ARVs to reduce the viral load in the body.
- vi. Doing mild exercises to help prevent further wasting of muscles.

5. Are there drugs that prevent weight loss and promote weight gain.

Yes, there are such drugs. These drugs:

Facilitate build up of muscle tissue and also cause weight gain.

Cause stimulation of appetite resulting in

Cause stimulation of appetite, resulting in one eating more food.

However, these drugs should only be used on the recommendation of a medical provider and must be used with caution. They are associated with serious side effects (like nausea, joint stiffness, and elevated sugar and fat in the blood).

Since most of these drugs act as artificial hormones, they may interact with other body hormones to cause deficiency levels.

For PLWHA on ARVs, advice from a medical doctor has to be sought before taking these drugs.

These drugs are expensive (cost of between US\$ 15,000-40,000 per year).



FAQ Nutrition and HIV/AIDS - RCQHC

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

6. What information can you give a PLWHA who has too much weight.

Too much weight is harmful, especially if it is too high compared to the height (Body mass index higher than 30).

It is associated with high levels of fat in the blood. This can lead to liver complications, increased risk of heart problems, high blood pressure and diabetes.

For PLWHA on ARVs, high fat levels in the blood may lead to hunchback development.

Therefore it is important for a PLWHA to prevent too much weight gain. The followings can help prevent weight gain:

Limit consumption of foods and drinks that have simple sugars or high fat contents. These include sugar

of high fat contents. These include sugar cane, sweets, sodas, sweetened drinks, fatty meat, full cream milk, ghee, butter and fried food.

Eat more fruits, vegetables, lean meat, steamed foods, and vegetable oils like olive and corn oil.

Take regular body weight measurements to detect unhealthy weight gain early.

Do regular body exercises. They should be on average 30 minutes, 3 times per week.

If PLWHA are on ARVs and do not respond to dietary and exercise management, they should see a health worker. Weight gain could be due to the ARVs they are taking.

Many patients gain weight during the first year on ARVs , which in some cases makes up for weight loss due to untreated HIV.

FAQ Nutrition and HIV/AIDS - RCQHC



[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

7. Why do PLWHA often feel tired (general body weakness).

This may be due to:

HIV infection - Having the virus for a long time causes stress to the body, which makes you feel tired.

Inadequate intake of food that weakens the body.

Anaemia - the count of the blood red cells is low.

Opportunistic infections, especially if one has had a variety of them in the past.

Psychosocial causes like depression and anxiety.

Medication side-effects.

Hormonal changes in the body (e.g. testosterone and thyroid hormone production) caused by HIV infection.

The real cause needs to be assessed before care and support can be provided.

Good nutrition is particularly important for PLWHA. There is no single food that provides all needed nutrients to a human being, (except mothers milk for a baby for the first 6 months).

Therefore it is important for PLWHA to eat a variety of foods for improved quality of life. Eating balanced meals with an adequate amount of food at least 3 times a day and snacks in between meals is necessary for good health and nutritional status of PLWHA.



FAQ Nutrition and HIV/AIDS - RCQHC

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Glossary

Absorption of food- Body process of taking in food through intestines

Antiretroviral Drugs that reduce multiplication of HIV in the body

Anti-oxidants Substances that remove poisonous substances in the body

Bacteria- Germs

Boost To enhance

Chronic diseases- - Diseases that last for a long time

Dietary Anything that relates to diet or food consumed

Digestion The process by which food is broken down to allow easy uptake and utilisation from the intestines by the body

Dehydration - Lack of fluids in the body

Enzymes A chemical substance that occurs naturally in the body to speed up processes necessary for

to speed up processes necessary for

functioning of cells in the body.

Exotic eggs Eggs from chickens that are not local

Haemoglobin substance found in red blood cells, which carries oxygen and contains iron

Immunity Bodys natural resistance to infections

Indigestion The bodys failure to break down food

Metabolism Chemical processes in the body that are necessary for functioning of the body

Nutrition The process involved in taking in food and utilising it in the body.

Opportunistic infections Other infections that affect people living with HIV due to weakened body immunity

Rehydration The process of adding fluids in the body

Therapy - - Treatment

Toxicity The degree of poisonous substances in the body

Viral load- - The amount of HIV in the body per unit of blood

Vegetarian Person who does not eat meat

BIBLIOGRAPHY:

FAQ Nutrition and HIV/AIDS - RCQHC



[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Bibliography

1. COUNSENUETH, 2004. Lishe na Ulaji Bora kwa Watu Wanaoishi na Virusi vya Ukimwi: Majibu ya maswali Yanayoulizwa Mara kwa Mara, Information Series # 3: ver 2.
2. MOH, 2003. National Antiviral Treatment and Care Guidelines for Adults and Children. MOK, Kampala, Uganda.
3. MOH, 2003. National Care and Support for PLWHA in Uganda: Guidelines for Service Providers, MOH/ACP, Kampala, Uganda.
4. UGAN, 2004. Improving the Quality of Life through Nutrition: A Guide for Feeding PLWHA. RCQHC/FANTA, Kampala, Uganda.
5. WHO, 2003. Nutrient Requirements for

5. WHO, 2005. Nutrient Requirements for
People Living with HIV/
AIDS: Report of a Technical Consultation, World Health
Organization, Geneva, Switzerland.



FAQ Nutrition and HIV/AIDS - RCQHC

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

**Nutritional Care and Support for
People Living with HIV/AIDS in
Uganda: Guidelines for Service
Providers**



THE REPUBLIC OF UGANDA

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home](#) [cd3wd](#) [ar](#) [cn](#) [de](#) [en](#) [es](#) [fr](#) [id](#) [it](#) [ph](#) [po](#) [ru](#) [sw](#)

PREFACE

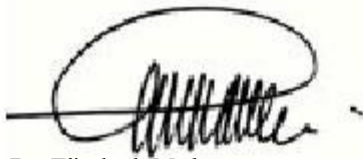
Good nutrition is increasingly being recognised as a key component in the care and support for people living with HIV/AIDS (PHA). These guidelines are meant for use by service providers in sectors such as health, agriculture, gender and development, and local government, among others. They are targeted at service providers who have the primary responsibility of support and care for HIV/AIDS patients.

The guidelines are the result of considerable collective effort of nutritionists and service providers in both the public and private sectors.

The guidelines recognise that most support and care for PHA takes place in their homes, where behavioural change will need to take place. Where possible we have provided the guidelines in a language and format that is user friendly to frontline service providers, and we have used up-to-date knowledge in the area of nutrition and HIV/AIDS. However, it is hoped that stakeholders will adapt these guidelines to suit their environments and to ensure the best care and

~~Support~~
Support for

Finally, we appeal to you to use these guidelines in the routine care and support of PHA. Use them in counseling, in training service providers, in the design of development of programs, and in the evaluation of programs serving PHA.

A handwritten signature in black ink, appearing to read 'Elizabeth Madraa', is written over a horizontal line. The signature is stylized with a large loop at the top and several vertical strokes below.

Dr. Elizabeth Madraa
Programme Manager
STD/AIDS Control Programme
Ministry of Health

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

ACKNOWLEDGEMENTS

The Ministry of Health would like to express its sincere gratitude to the following agencies for their financial and technical assistance: USAID/ REDSO, RCQHC, UGAN, FANTA/AED, WHO/Uganda, WFP, FAO, UNICEF/ ESARO, and UNICEF/Uganda. USAID/Uganda through FANTA/AED funded the production and publication of the initial edition of the guidelines. Special thanks go to RCQHC and the lead consultant, for their technical input, commitment and dedication, which contributed a great deal to the development of the guidelines. Recognition goes to the editorial team for their tireless work in reviewing, compiling and finalizing the document.

We would like to express our appreciation to all those persons who in one way or another contributed to make the guidelines a reality. In particular we appreciate the various representatives from the National Forum for People Living with HIV/AIDS, the Mwanamugimu Nutrition Unit, The AIDS Support Organization (TASO), Line Ministries, AIDS Information Centre, Makerere University, Child Health

Information Centre, Makerere University, Child Health
Development, Mulago Hospital, Nsambya Hospital and Stakeholders for their
time, technical contributions and comments.

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

CONTENTS

PREFACE iii

ACKNOWLEDGEMENTS iv

CONTENTS v

ACRONYMS vi

1. INTRODUCTION 1

1.1 Background 1

1.2 Rationale for the Guidelines 2

1.3 Purpose of the Guidelines 2

1.4 Target Group 3

1.5 How to Use the Guidelines 3

2. NUTRITION AND HIV/AIDS 5

2.1 Introduction to Nutrition 5

2.2 The Link Between Nutrition and HIV/AIDS 5

2.3 Promote Food Diversification Through Use of Local Food Sources 9

3. NUTRITIONAL CARE AND SUPPORT FOR ADULTS WITH HIV/AIDS 15

3.1 Adults with HIV/AIDS 15

3.2 Pregnant and Lactating Mothers with HIV/AIDS 20

4. NUTRITIONAL CARE AND SUPPORT FOR CHILDREN WITH HIV OR BORN TO

HIV POSITIVE**MOTHERS 25**

- 4.1 Infants Born to HIV Positive Mothers 25
- 4.2 Children Infected with HIV 29
- 4.3 Severely Malnourished Children with HIV/AIDS 33

5. NUTRITIONAL CARE FOR PHA TAKING MEDICATION OR HERBAL REMEDIES 37**6. FOOD SECURITY FOR HOUSEHOLDS AFFECTED BY HIV/AIDS 41****7. NUTRITIONAL COUNSELING FOR PEOPLE LIVING WITH HIV/AIDS 45****8. MONITORING AND EVALUATION OF NATIONAL GUIDELINES 51****REFERENCES 53**

- ANNEX 1. Essential nutrients, their functions and local dietary sources 55
- ANNEX 2. Daily energy and protein requirements for adults 59
- ANNEX 3. Safe food handling practices 60
- ANNEX 4. Side effects and recommended food intakes with modern medications 61
- ANNEX 5. Check list for nutrition counseling 63
- ANNEX 6. Indicators for monitoring and evaluation 64
- ANNEX 7. Existing policies, guidelines and current initiatives 66
- ANNEX 8. Nutritional management for symptoms associated with HIV 68

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

ACRONYMS

ACP AIDS Control Programme
AIC AIDS Information Centre
AIDS Acquired Immune Deficiency Syndrome
ANC Antenatal Care
ARV Anti-retroviral
DGLV Dark Green Leafy Vegetables
ESARO East and Southern Africa Regional Office
FANTA Food and Nutrition Technical Assistance
FAO Food and Agriculture Organisation
Hb Hemoglobin
HIV Human Immunodeficiency Virus
HMIS Health Management Information System
IEC Information, Education and Communication
IMCI Integrated Management of Childhood Illness
M&E Monitoring and Evaluation
MOH Ministry of Health
MTCT Mother-to-Child Transmission of HIV
NGO Non-governmental Organisation
DHA People

RNA People

~~PMTCT~~ PMTCT Prevention of Mother-to-Child Transmission of HIV

~~RCV/AIDS~~ RCV/AIDS Regional Centre for Quality of Health Care

REDSO USAID Regional Economic Development Support Office for East and Southern Africa

SARA Support for Analysis and Research in Africa Project

TASO The AIDS Support Organisation

TB Tuberculosis

TBA Traditional Birth Attendants

TWG Technical Working Group

UDHS Uganda Demographic and Health Survey

UGAN Uganda Action for Nutrition Society

UNAIDS United Nations AIDS

UNICEF United Nations Children's Fund

USAID United States Agency for International Development

VCT Voluntary Counselling and Testing

WFP World Food Programme

WHO World Health Organisation

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

1 INTRODUCTION

1.1 Background

Magnitude of HIV/AIDS in Uganda

About two million Ugandans had been infected with HIV by the year 2002, and more than 900,000 had died of HIV-related illnesses. At the end of December 2001 about 530,000 women, 400,000 men and 100,000 children under 15 years were living with HIV/AIDS (STD/ACP/MoH, 2002). In 1990 the prevalence of HIV among the adult population had reached 24% (STD/ACP/MoH, 1990). The high awareness about HIV/AIDS at all levels and positive behavior changes have led to a decline in HIV prevalence to 6.5% in year 2002. The effects of HIV/AIDS have been enormous on families, communities and the nation. About 1.7 million children below 15 years of age have lost one or both parents since the beginning of the epidemic. Key social and economic sectors have lost much of their prime labor force to HIV/AIDS. Unfortunately, HIV/AIDS and high levels of malnutrition combine to

nately, HIV/AIDS and high levels of malnutrition combine to undermine the immunity of most people in the country.

Nutrition Problems in Uganda

Although there has been a decline in HIV/AIDS, the trends in malnutrition have not changed. For optimum nutrition, one needs adequate food security. However, in Uganda, food insecurity results from poverty, intra-regional differences, internal displacement, gender imbalances in food allocation and intra-household food distribution, and lack of knowledge. During the harvest period most households in Uganda have a variety of food items in adequate quantities, and on average consume three meals per day. However, as the dry season progresses, the meals consumed become less varied and families eat two meals or even one meal a day at the onset of the planting season. This aggravates the problem of recurring malnutrition. HIV/AIDS attacks households by reducing labor, agricultural production and income, which then leads to food insecurity. This limits the capacity of af-

Guidelines for Service Providers

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

ected household to access food or quality care and adopt appropriate health and nutritional responses to HIV/AIDS.

According to the UDHS (2001), 39% of children less than five years of age are stunted and 9% of women of reproductive age have chronic energy deficiency. Over 65% of children less than five years of age and 30% of women 15-49 years of age are anemic, while 28% of children and 52% of women are vitamin A deficient. Given these high levels of under-nutrition in Uganda, it is likely that deficiencies of other nutrients such as zinc, selenium, magnesium and vitamin C that are important for the immune function are prevalent in Uganda. Like HIV/AIDS, malnutrition also compromises the immune function and thus increases susceptibility to severe illnesses and reduces survival.

Providing quality care and support for people with HIV/AIDS (PHA) requires addressing their nutritional needs. Provision of good nutrition has been shown to be an effective strategy in the mitigation of the effects of HIV/AIDS. Nutritional care and support should therefore be an integral component of the HIV/AIDS comprehensive care package.

1.2 Rationale for the

1.2 Rationale for the

Guidelines

While Uganda has policies and guidelines for HIV/AIDS prevention and treatment (see Annex 7), they do not provide enough guidance on the nutritional care and support of PHA. Furthermore, the initiatives to provide nutritional care and support for PHA, such as those undertaken by NGOs and AIDS service programmes, are limited in scope and coverage. In addition, the content of the nutrition strategies of different HIV support and service programs are often not harmonised. This is because, to date, information and skills required to guide quality nutritional care and support for PHA in Uganda have not been available. These national guidelines will enable programs and services to provide consistent and sound recommendations and contribute to greater awareness of the importance of nutritional responses to HIV/AIDS.

1.3 Purpose of the Guidelines

These guidelines define the actions that service providers need to undertake in order to provide quality care for and support to PHAs at

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw



various contact points including VCT, antenatal care (ANC), postnatal care, community visits, home-based care, agricultural extension, and education. The guidelines seek to assist the different categories of HIV/AIDS infected/affected people: men, pregnant and lactating

women, adolescents, young children, severely malnourished children, food insecure households/areas, and people on medication. The information herein can also be used to develop communication messages and interventions for care of PHA.

1.4 Target Group

These guidelines are targeted at providers of services for people living with HIV/AIDS in Uganda. The Ugandan service provider

has the obligation to provide the highest quality of care, whether it is institutional or community based. Service providers include counselors, health workers, extension workers, and teachers/trainers.

1.5 How to Use the Guidelines

These national-level guidelines provide a general approach to diverse conditions in Uganda. Each service provider will need to adapt the recommendations to the local context or to the individuals to whom the services are being offered. The guidelines can be used:

- To create messages that advocate good nutrition for all, but particularly for people living with HIV/AIDS.
- To develop more detailed and specific operational guidelines and materials to communicate to caregivers and PHA.
- To provide nutritional and dietary counseling to people living with or affected by HIV/AIDS.

Guidelines for Service Providers

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

- To design monitoring and evaluation systems for nutritional components of HIV/AIDS programs/interventions.

These guidelines can be used in conjunction with the following reference materials:

- *Guide to Ideal Feeding Practices: For People with Increased Nutritional Needs, Care and Support.*
- *Policy Guidelines on Feeding of Infants and Young Children in the Context of HIV/AIDS (2001).*
- *Policy for the Reduction of the Mother-to-Child HIV Transmission in Uganda (2003).*
- *Nutrition and HIV/AIDS: A Handbook for Field Extension Workers.*
- *Feeding Guidelines for People Living With HIV/AIDS: A Handbook for Field Extension Workers.*



Guidelines for Service Providers

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

2 NUTRITION AND HIV/AIDS

2.1 Introduction to Nutrition

The purpose of this section is to introduce the service provider to the basic nutrition knowledge essential in the nutritional care and support of the general population.

Nutrition refers to how food is utilized by the body for growth, reproduction and maintenance of health. Foods contain different nutrients that include water, carbohydrates, proteins (or amino acids), lipids, vitamins and minerals.

Why is good nutrition important.

Good nutrition is essential for:

- Growth, development, replacement and repair of cells and tissues.
- Production of energy. warmth. movement

- Carrying out chemical processes such as digestion, metabolism and maintenance.
- Protection against disease and recovery from disease.

Nutrients that are needed in large amounts, such as carbohydrates, proteins and fat, are macronutrients. Vitamins and minerals, which are needed in smaller amounts, are micronutrients. Both macro- and micronutrients are essential. They are needed in the right amounts and combinations for the body to function properly. Food also needs to be free from infectious organisms and harmful substances.

2.2 The Link Between Nutrition and HIV/AIDS

You need to understand and also educate your clients on the link between HIV/AIDS and nutrition. The following are the key points:

1. The relationship between malnutrition and HIV/AIDS creates a vicious cycle that weakens the immune system.

Guidelines for Service Providers

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

2. Persons with HIV/AIDS are at increased risk of malnutrition through various mechanisms, some of which are not related to food intake.

3. Poor nutrition increases susceptibility to opportunistic infections and may accelerate the progression of HIV/AIDS.

2.2.1 HIV/AIDS has its major impact on the immune system

When HIV attacks a person it impairs the body's natural defense system against disease and infection. The virus may take years to produce illness in a person. However, the effects of the virus on nutrition can occur early in the course of the disease.

When an infected person's defense system is impaired, other germs take advantage of this opportunity, to further weaken the body and cause various illnesses, such as fever, cough, itching, chronic diarrhoea, pneumonia, tuberculosis and oral thrush. The time it takes for HIV infection to become full-blown AIDS depends on the general health and nutritional status before and during the time of

infection.

Many people live with the virus for ten years or more if they maintain good nutrition. As the viral load increases, the infections put extra demand on the immune system and increase the body's need for energy and nutrients. Given the frequent illnesses and malnutrition, the body gradually becomes weaker; weight loss or wasting becomes a serious problem, and diarrhoea occurs more often and lasts longer.

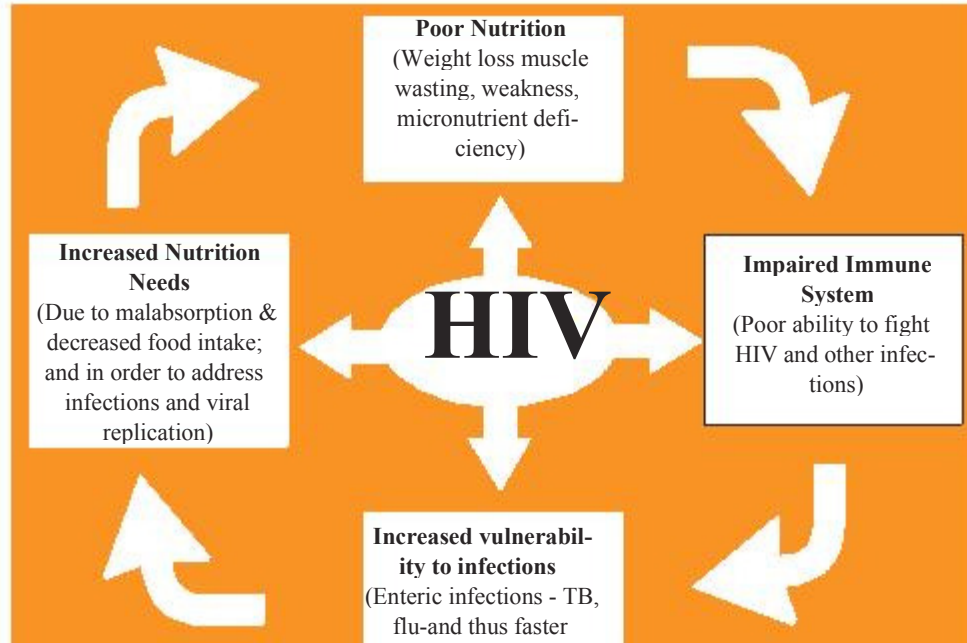
2.2.2 The relationship between HIV/AIDS and malnutrition creates a vicious cycle

Nutrition and HIV/AIDS are strongly related to each other. The relation between them creates a vicious cycle as shown in Figure 1.

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Figure 1. The cycle of malnutrition and infection in the context of HIV/AIDS



progress
to
AIDS)

(Source: RCQHC/FANTA, 2003)

- HIV impairs the immune system, making the body vulnerable to various infections. To handle the HIV infections and the frequent other illnesses the energy and nutrient needs are increased. If these increased needs are not met malnutrition results.
- Malnutrition also contributes to immune impairment, which worsens the effects of HIV and thus encourages more rapid progression to AIDS. Malnutrition therefore can both contribute to and result from the progress of HIV.

Therefore, good nutrition is important because it increases resistance to infection and disease, and improves energy, which makes a person stronger and more productive.

Guidelines for Service Providers

7

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

2.2.3 HIV infected persons are at increased risk of malnutrition

The increased risk of malnutrition in HIV infected persons is due to:

- Reduced food intake as a result of appetite loss and difficulty eating. These may result from infections, side effects of medication, or depression due to fatal illness.
- Poor absorption of nutrients that may be due to recurrent/chronic diarrhoea and HIV caused intestinal cell damage.
- Changes in the way the body uses the nutrients it receives or has stored.
- Chronic infections and illnesses that accompany HIV that may increase the nutrient requirements of the body.

Good nutrition can therefore play an important role in the comprehensive management of HIV/AIDS, as it improves the immune system, boosts energy and helps recovery from opportunistic infections.

2.2.4 Nutritional requirements for PHA

Requirements for adults

PHA need more energy to meet the elevated needs due to infections and changed metabolism. PHA displaying symptoms require between 20-30% more energy, while those who do not display symptoms require 10% more energy. The energy increases remain the same whether or not the HIV-infected person takes ARVs.

The amount of proteins and micronutrients that is needed may not differ significantly from that of a person without HIV. Annex 2 shows the energy and protein requirements for healthy adults, as well as what the requirements would be when the additional needs from suffering from HIV are considered.

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Requirements for children and adolescents

Sick children and adolescents have similarly elevated energy needs. Those displaying symptoms of HIV/AIDS tend to have higher energy needs in the same way as adults.

What you can do:

- Counsel PHA to increase the amount of food they eat. They should eat more than their usual amount of food.
- Counsel PHA to increase the frequency or number of times they eat throughout the day. This can be through small, frequent meals.
- Support PHA to modify their normal diet by recommending the use of nutrient-rich types of food to make up the meals.
- Recommend the consumption of foods fortified with the essential nutrients like vitamin A, iron, the B vitamins, and vitamins K and E.
- Advise on the use of nutritional supplements to complement the

usual
diet.

2.3 Promote Food Diversification Through Use of Local Food Sources

No single food contains all the nutrients the body needs in the right quantities and combinations. Only breast milk contains the combination and quantity needed for a young baby.

A nutritious diet is one that provides a variety of foods in adequate quantities and combinations to supply essential nutrients on a daily basis.

2.3.1 Energy-giving foods

Carbohydrates

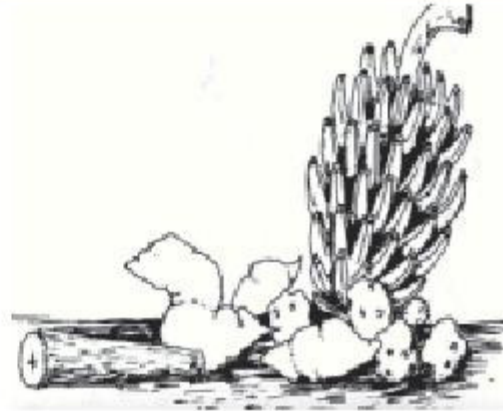
The main sources of carbohydrates in the diet are staples and sugars. Staples are produced locally, or are purchased from local markets.

Guidelines for Service Providers

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Staples make up the bulk of foods for the majority of the population. In Uganda these may vary from region to region. They include matooke, Irish potatoes, sweet potatoes, cassava, posho (made from maize or other flour), sorghum, millet, yams, rice, and bread. Staples form the main part of



the meal and are cheap and readily available.



Staples mainly supply carbohydrates that are important for providing energy. They may also provide

some vitamins and fiber. If we do not eat enough carbohydrates we may crave sweets and fats. Staples alone cannot provide enough of the nutrients the body needs. They need to be eaten in combination with other foods.

Sugars and Sugary Foods

Sugars are also rich sources of energy. However, many organisms like yeast and moulds grow in sugary settings. In Uganda, sugar is normally eaten with other foods. Sugars and sugary foods include honey, jam, table/tea sugar, cakes and biscuits. Sugary foods also include most artificial fruit juices and sodas. Many of these drinks are not rich in other nutrients. Some fruit juices and artificial juices are too acidic and may be too strong for the stomach of a sick person.

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Fats and Oils

Fats and oils are rich sources of energy. One gram of fat provides twice the energy of one gram of carbohydrate. Therefore, people only need fats in small quantities. Fats also add flavor and taste to food, and thus stimulate appetite. They build body cells, help body processes, and are essential for absorption and utilization of fat-soluble vitamins. Excessive consumption of fat, however, predisposes individuals to obesity and coronary heart disease.

Vegetable oils and fats are obtained from corn, simsim, sunflower, cottonseed, shea butter, palm oil and margarine. Animal sources of oils and fats include lard, butter (including ghee), cheese, fatty meat and fish (including fish oil).

Dietary Fiber

We need fiber or roughage in our food. Fiber is important for the movement of the bowels. However, it reduces the absorption of some

nutrients like iron, zinc and other minerals. It is recommended that people at risk of anemia (like pregnant women, young children and PHA) take foods rich in fiber (see Annex 1) with caution. Too much fiber also makes foods for children bulky and may limit the amount of energy and other nutrients that is available in their foods. The best source of fiber is from vegetables and fruits.

2.3.2 Body-building foods

Proteins are referred to as body-building foods. They are essential for cell growth. Proteins support the function and formation of the general structure of all tissues, including muscles, bones, teeth, skin and nails. There are two main types of proteins: plant proteins and animal proteins.

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Plant Proteins

These include beans and peas of different varieties, green-grams, groundnuts, soybeans and simsim. Plant proteins also provide vitamins and minerals.



Animal Proteins

The main animal foods in our country that provide proteins are meat, milk (including products like cheese, yoghurt and fermented milks), fish and eggs. Others include *nseene* (*grasshoppers*) and *white ants*.

Animal proteins are sources of high quality proteins, but also provide vitamins and minerals. Major vitamins provided include the B vitamins, vitamin A, and minerals like iron, calcium and copper (see Annex 1).

Animal products provide additional energy too.

2.3.3 Protective foods

Fruits and vegetables are known as protective foods because they provide vitamins and minerals that are key in strengthening the immune system. Uganda has a variety of vegetables and fruits. Most of these grow in our gardens. They are important part of healthy and nutritious diets. Fruits and vegetables supply vitamins and minerals, which are substances required by the body in small amounts for its normal physiological functions. Vegetables and fruits are also major sources of fiber and roughage required for bowel movement and to prevent constipation.

Vitamins

Some vitamins are water-soluble (e.g. the vitamin B group and vitamin C) and should be consumed continuously as the body does not store



Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw
them but excretes any excess taken. Other vitamins (A, D, E, K) are fat soluble, implying that the vegetables should be prepared with some oil/fats for efficient absorption and use by the body.

Minerals

Minerals are needed for the functioning of immune system. Important minerals include iron, selenium, zinc, iodine and calcium.

Vegetables

Vegetables add taste, flavor and color to our meals.

Common vegetables include: *doodo*, *nnakati*, *malakwang*, *eboo*, *spinach*, *kale (sukuma wiki)*, *pumpkin leaves*, cowpea leaves, carrots, cassava leaves, and



green. Cabbage is a vegetable that is important mainly as roughage. Vegetables contain useful immune substances called beta-carotenes. In many cases, vegetables are seasonal in availability, quality and prices. Vegetables provide nutrients as listed in Annex 1.



Fruits

A variety of fruits grow in Uganda. The deep yellow or orange colored fruits are richer in vitamins, particularly beta-carotenes and vitamin A. Such fruits include avocados, mangoes, pawpaws, pumpkin, passion fruit pineapple and jackfruit. Oranges, lemons and other citrus fruits are rich sources of vitamin C. Like vegetables, most fruits in Uganda are seasonal.

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

2.3.4 Water

Water is an important component of the body and its functions. People should drink boiled and filtered water if possible. Mineral water is another option for those who can afford it.

Water is also found in tea, soups, milk, juices and fruits. However, one should not rely on tea, coffee and alcoholic drinks as sources of water, as they can interfere with absorption of nutrients and may interact poorly with medicines.

Tea and coffee should be taken in moderation. Alcohol can damage the ability of the body to fight disease. Alcohol should be either avoided or taken in very small quantities. Some alcoholic beverages like beer contain a lot of sugar and yeast that may be harmful to a sick person. Alcohol can also interact with medicines to create uncomfortable or dangerous side effects.

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

3 NUTRITIONAL CARE AND SUPPORT FOR ADULTS WITH HIV/AIDS

This section provides the nutrition and dietary recommendations for the care and support of adults with HIV/AIDS in Uganda.

3.1 Adults with HIV/AIDS

Why is nutritional care important for adults with HIV/AIDS.

Adult men and women with HIV/AIDS may suffer from loss of appetite, difficulty eating and poor absorption of nutrients. This compromises their nutrition and results in deteriorating health. Counseling and supporting them to take simple actions to improve their nutrition can improve their health. Attainment of good nutrition will contribute to the adoption of a positive attitude, which normally improves the quality of life for adults with HIV/AIDS.

The elderly have special nutritional problems due to the effects of

aging, e.g. loss of teeth, poor absorption, poor appetite, hypertension and diabetes. HIV/AIDS infection makes these problems worse.

The nutrient needs of adolescents are high. They should eat quality foods to satisfy their large appetites. Adolescent girls should take iron and folic acid supplements. Young girls who become pregnant are at particular risk of developing nutrient deficiencies if they have HIV/AIDS. They need additional nutrients for their baby's growth as well as their own and to boost their immunity.

The following facts are key:

- An HIV infected adult will need between 10-30% more energy or 300 to 800 additional kilocalories.
- To keep healthy, adults with HIV/AIDS need to do light exercises.
- Adults with HIV/AIDS should use anti-retrovirals (ARVs) if possible.
- Early identification and treatment of symptoms or conditions that affect a patient's appetite or ability to eat can improve nutritional status.

Guidelines for Service Providers

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

IMPORTANT: MANY HIV POSITIVE ADULTS MAY NOT DISPLAY SYMPTOMS; THESE ADULTS STILL NEED EXTRA ENERGY AND NUTRITIONAL CARE. In most cases adults with HIV/AIDS that show symptoms will display the following symptoms:

- I. Decreased weight. HIV infection may, among other factors, be a cause of weight decrease among PHA. As a service provider you may need to support PHA to improve their nutritional status by preventing weight loss.
- II. Changes in body shape, e.g. changes in fat deposition (shape). You may have to support PHA to do exercises, or refer them for specialized medical care or for ARVs.
- III. Frequent disease episodes or loss of immunity to diseases. You may have to advise on illness prevention to improve their quality of life.

What you can do

I. Support adults living with HIV/AIDS to access information on nutrition and HIV/AIDS. Assist in linking them to organizations/ services where they can get dietary information or support.

- Keep yourself updated on correct nutrition and HIV information.
 - Read widely.
 - Attend meetings/seminars where HIV/AIDS care and support issues are being discussed.

- Provide adults with HIV/AIDS with guidance or with materials (pamphlets, literature) that may assist in nutritional care.

- Refer adults with HIV/AIDS to places that provide care and support, like nutrition; medical care; or psychosocial, economic and spiritual support. These places include TASO, AIC, other AIDS Support Organizations, NGOs, and religious groups.

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

II. Encourage adults with HIV/AIDS to periodically check their nutritional status.

- Encourage adults with HIV/AIDS to periodically (at least every two months) check their weight. If possible they should have their hemoglobin level determined and recorded.
- Accurately record the weight, height and other records of each adult living with HIV/AIDS in an exercise book. Encourage them to show the records to service providers with whom they may come into contact.

If a client has weight loss of more than 10% in the last three months, their diet intake and history of illness should be assessed and appropriate action taken.

If hemoglobin levels are less than 11 mg/dl the client should be encouraged to seek medical care immediately. They should be put on iron supplements and counseled on increased use of foods rich in iron, vitamin A and B12.

III. Support adults with HIV/AIDS to know how to prevent weight loss, or gain weight in case of loss.

● Counsel adults with HIV/AIDS to increase their energy and nutrient intake, through:

- Increasing the amount and the frequency of eating meals rich in energy, protein and plenty of fruits and vegetables.
- Eating nutritious snacks between meals as often as possible.
- Eating foods that are fortified with essential micronutrients like vitamins A, C, E, K and iron.

Energy and Protein Intake

Remember adults living with HIV/AIDS need 10-30% additional energy and may need additional proteins in their meals.

Micronutrient Supplements

should contain multiple micronutrients or multivitamins. The most important micronutrients in fighting HIV are selenium, zinc, beta-carotenes, vitamin A, vitamin E, and vitamin C.

Guidelines for Service Providers

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

- Using micronutrient supplements in consultation with a doctor.
If clients prefer this option, discuss the costs of this option to relative the cost of food-based approaches.

- Help adults with HIV/AIDS make meal plans using locally available foods to meet their nutrition needs. The counselor should consider food accessibility, availability, affordability, preservation and storage. The counselor should also consider fuel needs of the client, as well as tastes and preferences of the client, household and community. The meal plan should also consider whether the client is taking medication or has infections.

- Encourage the client to drink at least eight glasses of water per day.

- Advise adults with HIV/AIDS to seek prompt treatment for HIV-related conditions, particularly those that affect food intake such as fever, oral thrush, ulcers/sores in the mouth, diarrhoea, vomiting, nausea and loss of appetite.

- Advise your clients to avoid habits that may interfere with their food intake, absorption and utilization. These include consumption of alcohol, smoking, drug abuse, and drinking tea or coffee.
- Advise caregivers of elderly PHA to regularly supervise their meals to ensure adequate food consumption.

IV. Support adults with HIV/AIDS to address conditions that may affect their body shape.

- Develop a plan with adults with HIV/AIDS and encourage them to engage in physical activities. Exercise helps to prevent loss of muscle, helps strengthen the body and stimulates appetite. If loss of muscle persists even after exercises, the client should be referred to a doctor.
- If taking ARVs, it is important to assess whether the changes in body

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Examples of exercises

- *Walking, aerobics, jogging, stair climbing, hiking, skipping, etc.*
- *Light physical exercises in the home*
- *Weight lifting exercises*

shape (composition) are a side effect of the drugs. Clients should see a doctor for advice.

V. Support adults living with HIV/AIDS to prevent and treat illnesses that could reduce their food intake, or affect their nutritional status and health.

- Counsel adults with HIV/AIDS to:
 - Seek prompt treatment for all opportunistic infections and conditions that might undermine nutrition, including fever, oral thrush, sores/ulcers in the mouth, diarrhoea, nausea, vomiting and loss of appetite.
 - Practice food and water safety and personal hygiene, e.g. wash hands before handling food, thoroughly cook animal products, boil drinking water, wash fresh fruits and vegetables in clean water and store food appropriately (see Annex 3 for details).
 - Follow guidelines, as provided in Annex 8 for nutritional management of symptoms associated with HIV/AIDS
 - Get dewormed twice a year.

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

- Practice safer sex (Abstain, Be Faithful, use Condoms) in order to avoid re-infection.
- Suggest nutritional interventions that will increase nutrient intake such as: having more frequent meals, using mashed food, and increasing the intake of liquids. Refer to Guide to Ideal Feeding Practices for further information.
- Refer your clients to services that offer ARVs to be assessed whether they meet the criteria to start on them.
- Encourage adults with HIV/AIDS to have a positive attitude towards the illness and life: it can make a difference to their health.

3.2 Pregnant and Lactating Mothers with HIV/AIDS

Why is nutritional care for pregnant and lactating mothers infected with HIV important.

Good nutrition is important for the health and reproductive performance of women as well as for the survival and development of their children. A woman's nutritional status prior to and during pregnancy determines the risk of MTCT and also influences her own health. Pregnant and lactating mothers who are infected with HIV are at a higher risk of malnutrition and mortality. This is due to the extra demands for energy and nutrients exerted by pregnancy, lactation, and HIV. To preserve their health and nutritional status they require additional food to meet the extra demands for nutrients during pregnancy and those imposed on the body by the HIV infection.

Unfortunately in Uganda, many women become pregnant when they are already malnourished. They are often malnourished prior to HIV infection as well. If the woman is HIV positive then the effects of malnutrition and HIV increase her vulnerability to health dangers associated with pregnancy and childbirth.

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Your role as service provider is therefore to provide pregnant and lactating mothers with quality nutritional care and support. This will minimize the impact of the disease on their nutritional status, delay disease progression, and allow them to remain productive and able to take care of themselves and their family.

What you can do

1. Support pregnant and lactating mothers to seek early diagnosis for HIV infection.

- Counsel pregnant and lactating mothers on the need for early diagnosis of HIV infection. Knowing their HIV status helps them to:
 - Take care of themselves more thoroughly.
 - Prevent infection or re-infection by having safer sex.
 - Seek nutritional support that is more specific to their needs.
- Refer women interested in knowing their HIV status to an institution that offers VCT services.

- Counsel women on the need to seek early and periodic antenatal and postnatal care.
 - Advise women to receive and comply with antenatal care (e.g. frequent weight monitoring, micronutrient supplementation, STD and hemoglobin screening).
 - Encourage them to utilize PMTCT services if available.

II. Support pregnant and lactating mothers to monitor their nutritional status.

- Ensure that every pregnant mother has an antenatal card to record weight changes during pregnancy.
- Educate mothers infected with



Guidelines for Service Providers

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

HIV about the importance of periodic nutritional status monitoring (e.g. weight and height):

- To know whether they are gaining adequate weight (as in pregnancy) or are losing weight at a rate that is detrimental to their health.
 - To be able to plan appropriately so that they may address their dietary needs.
- Assess the nutritional status of women (using anthropometric measurements) and plot it on the antenatal card.
 - If a pregnant mother has a weight gain that falls below the recommended range, it may indicate a possible medical problem (e.g. an opportunistic infection) or inappropriate energy intake, and/or food insecurity. Women gaining less than one kilogram per month in **the second and third trimester should be referred to a health unit immediately where they can receive more care.**
 - Discuss with the pregnant mother to identify the

probable causes of insufficient gestational weight gain and work with her to figure out the best course of action to promote weight gain.

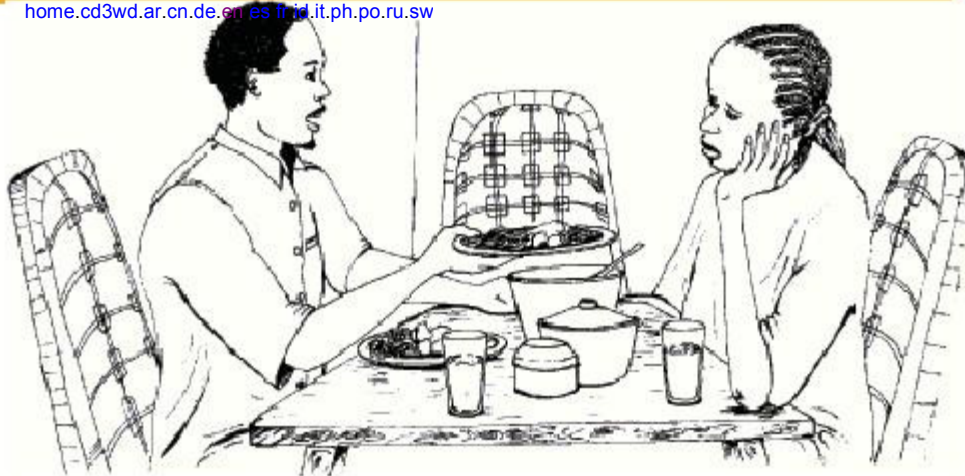
- A lactating mother who is HIV positive should not lose weight.
- Screen for paleness of inner eyelids and palms or for hemoglobin levels. Any signs of anemia (or Hb <11 mg/dL) should be referred for immediate treatment. The best treatment will include food-based approaches and iron supplementation.

III. Support pregnant and lactating mothers to consume enough food to meet their energy and nutrient needs.

- Find out the foods the woman has been eating and assess whether the intake is adequate. Pregnant and lactating mothers should follow all the guidelines for food intake given in section 3.1 above. If there are any factors that may limit intake, help the mother address them.

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw



- Encourage pregnant and lactating mothers to consume foods rich in micronutrients and go to ANC services for guidance on micronutrient supplementation.
- Ensure that lactating mothers get vitamin A supplementation at delivery or at least within the first eight weeks of delivery.

- Encourage pregnant and lactating mothers to get prompt treatment for malaria, including presumptive treatment and prevention by using treated mosquito nets. Advise on prevention of hookworm infestation and regular deworming.

IV. Support pregnant and lactating mothers to prevent illnesses that may affect their nutritional status or their ability to eat.

- Advise pregnant and lactating mothers to:
 - Seek early treatment for infections such as fever, malaria, and diarrhoea to minimize the impact on mother's nutritional status.
 - Go for deworming every six months. During pregnancy deworming is done in the second and third trimester.
 - Maintain physical activity and exercise as much as possible. This improves appetite and helps build body mass.
- Support women to practice food safety and hygiene, in order to avoid

Guidelines for Service Providers

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

food-borne illnesses (see Annex 3).

- Refer mothers to reproductive health services where they can get family planning support as well as STD and HIV prevention and counseling.

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

4

NUTRITIONAL CARE AND SUPPORT FOR CHILDREN WITH HIV OR BORN TO HIV POSITIVE MOTHERS

This section provides the nutrition and dietary recommendations for the care and support of children with HIV or born to HIV positive mothers in Uganda.

Children born to HIV positive mothers are more likely to be born with low birth weight compared to children born to HIV negative mothers. As they grow, they are more likely to experience growth failure and malnutrition and are at increased risk of death. In addition, factors related to inadequate care due to the deteriorating health of the mother may worsen the malnutrition. Therefore, children born to HIV positive mothers need special attention, feeding and support. This group includes infants and young children, HIV infected children and severely malnourished HIV infected children. For further guidelines you may want to refer to the sources listed in

may want to refer to the sources listed in Annex 7.

4.1 Infants Born to HIV Positive Mothers

Your objective as a service provider is to explain to mothers the importance of knowing their HIV status and to provide the information they need so as choose the most appropriate feeding option. This will help reduce the risk of HIV transmission and death from inappropriate feeding.

What you can do

1. Support mothers/caretakers to choose the best infant feeding option available to her in order to reduce the risk of MTCT.

- Explain that knowing one's HIV status is important if one is to make the best feeding choice for the health of her baby.

Guidelines for Service Providers

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Some Advantages of Knowing the HIV Status of a Mother Are:

- Being able to choose the best option of infant feeding so as to reduce the risk of MTCT.
- Being able to seek support services that would prevent MTCT also during labor and delivery.
- Being recruited to other services that may prolong the life of the mother like the ARVs programme or TB programme.

- Explain that there are only two recommended feeding alternatives: **exclusive breastfeeding or exclusive replacement feeding**. Exclusive breastfeeding means feeding the baby on breast milk alone without giving anything else, not even water. Exclusive replacement feeding means that the baby is given alternative feeds alone, e.g. cow's milk. No breast milk is given.

- Explain that mixed feeding is not recommended because it increases the risk of HIV transmission through breastfeeding. Mixed feeding means that other feeds or water are given while breastfeeding continues.
- Counsel on the risks and benefits of both breastfeeding and replacement feeding.

Benefits of Exclusive Breastfeeding

- Breast milk contains everything a baby needs, including water, energy, proteins and micro-nutrients.
- Breast milk provides antibodies and vitamins to protect baby from infections.
- Breast milk is easy to provide to the child, and less costly.
- It gives emotional benefits to the mother and baby.
- It has contraceptive benefit for the mother.
- Breast milk is always available, while substitutes may not be.
- It is culturally appropriate.

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Risks of exclusive breastfeeding:

- ▀ HIV can be passed to the infant through breast milk.
- ▀ Breastfeeding can drain the strength of the mother and expose her to infections.

Benefits of replacement feeding

- ▀ Replacement feeding reduces the risk of transmission of HIV from the mother to the infant.
- ▀ The mother's body reserves are not depleted and this means she is at a lower risk of death.

Risks of exclusive replacement feeding

- ▀ There is a higher risk of other non-HIV infections for the infant.
- ▀ Other foods do not transfer mother's protective antibodies and vitamins.
- ▀ Foods are expensive, and fuels for boiling the water

and making the foods also drain resources.

- If foods are not prepared properly, they can cause diseases that lead to malnutrition.
- If the mother does not breastfeed it breaks confidentiality and may increase stigma for the infected mother.

II. Support mothers/caretakers in whatever feeding option they may choose.

- Assess whether the mother has any preference for either exclusive breastfeeding or exclusive replacement feeding.

If the mother chooses the exclusive breast feeding option:

- Help mother to apply good breastfeeding practices like positioning of the baby during breastfeeding and attachment of the baby to the breast. Good breastfeeding practices are essential for prevention of breast problems like mastitis.

Guidelines for Service Providers

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

- Ensure that breast-feeding is on demand, that is, as often as the child wants to feed, at least eight times a day or, whenever the mother wants to feed the child.
- When the mother is ready to stop breastfeeding she needs to take the child off the breast immediately once she decides to do so. She should continue expressing the breast milk and giving the baby until the baby is used to using the cup and spoon, and the replacement milk.
- Advise her to breastfeed exclusively for not more than six months.
 - Advise mothers how and when to wean their babies to other foods. Demonstrate to mothers/caretakers the preparation of the



- food
of
the
- Advise the mother to seek health care when the baby does not breast feed well or is sick, or when the mother has breast problems such as cracked nipples, painful or swollen breasts or sores on her breast.
 - Discourage mixed feeding.

If the mother chooses the exclusive replacement feeding option:—

- Verify adequacy of resources and skills needed to sustain replacement feeding.
- The baby is getting enough of the replacement foods at least eight times a day.
- Emphasize the importance of small but frequent meals.

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

- Help mother/caretaker identify ways of meeting the baby's micronutrient needs if the selected replacement feed is animal milk.
- Demonstrate the preparation of the foods the mother/caretaker has chosen.
- During every contact you have with the client, help the mother/caretaker prepare the baby feeds (amounts change as the baby grows).
- Stress the importance of using clean water and clean containers for replacement feeding. If water is used, the client should boil and filter the water.
- Help mother/caretaker know when and where to seek medical care and other social support if the child has feeding problems or is ill.
- Although the mother has chosen exclusive replacement feeding, she may be tempted to breastfeed. She should be made aware of risks of mixed feeding.

4.2 Children Infected with HIV

Why is nutritional care of HIV infected children important.

HIV infected children are more likely to experience growth failure and are at greater risk of death. They are more susceptible to common childhood illnesses such as diarrhoea, acute respiratory infection (ARI), malaria, neurological problems and general growth retardation. They are also at increased risk of malnutrition due to poor appetite, inability to suck, swallowing difficulties, and nausea. As such, HIV infected children should be given special attention to ensure they receive adequate amounts of both macro- and micronutrients. They also need adequate care.

What you can do

I. Support mothers/caretakers to provide children infected with HIV with nutritious diets and to address factors that result in decreased food intake.

- Counsel mothers/caretakers on feeding recommendations as provided on the counseling cards developed by the Ministry of Health (see Annex 7).

Guidelines for Service Providers

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

For infants aged 0-6 months:

- Refer to section 4.1 above

Dietary needs for children with HIV

- A body infected with HIV needs more energy, proteins and micronutrients.
- To get additional energy and nutrients, children should be fed more often, eating snacks between meals.
- Frequent eating of fruits and vegetables should be encouraged.
- Use of foods fortified with micronutrients can also add quality to our foods.

For children who are 6-24 months old:

- Promote foods and fluids that are rich in energy and nutrients.
 - Give porridge enriched with any of the following: milk, oil, sugar, groundnut/simsim paste, bean powder or soya-bean flour.
 - Give semi-solid food enriched with any of the foods mentioned above, but also

- Add a small amount of oil/margarine to the child's food.
- Give the baby mashed fruits and vegetables such as ripe bananas, pawpaws, avocados and pumpkins as frequently as possible.
- Continue giving animal milk.
- Support the mother/caretakers to:
 - Provide nutritious food according to the weight and age of the child, and increase the food portions as the child grows older.
 - Feed the child frequently (five to six times per day) and provide nutritious snacks in between meals.
 - Make sure that the child's food is prepared appropriately.
- Review the child's diet at every contact to ensure appropriate feeding.
- Help mothers to practice active and responsive feeding, including small but frequent meals, feeding the child patiently, not forcing the child to eat, and feeding the child the food she/he likes.
- Assess and promote good hygiene and proper food safety and handling.

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

- Encourage mothers to seek health support if the child is either not growing well, has eating problems, has sores/ulcers in its mouth, or gets opportunistic and other infections, such as malaria/fever, diarrhoea and respiratory infections.
- Promote continued adequate dietary care and support during and after illness.
- Create awareness about psychological and socio-economic support that households with HIV/AIDS infected children can access in their locality.

For children who are more than two years old:

- Encourage the mother to ensure that children consume adequate food to meet their increased energy needs. Consult the previous section and the previous chapter for more information on how to ensure meeting of increased energy needs.
- Develop a plan in consultation with the mother for feeding the child that includes sources of adequate protein and

that includes sources of adequate protein and micronutrients.

II. Support mothers/caretakers to use essential child survival services.

- Ensure that each child has a Child Health Card. These can be accessed at health facilities.
- Assess children for complete and up-to-date immunization. Immunize or refer children whose immunization is not up-to-date.
- Assess whether children are receiving vitamin A supplementation and undergoing regular deworming. If these have not been done in the last six months, provide the service or refer the children to where they can get the services.
 - Advise mothers/caretakers to always take their children to outreach services or health units nearest to them to receive all immunizations and vitamin A supplementations.

Guidelines for Service Providers

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

- Ensure that all immunizations and vitamin A supplementation have been recorded on the Child Health Card.

- Counsel mothers/caretakers about importance of taking their children for monthly growth promotion and monitoring.

- **HIV infected children brought for growth monitoring should be weighed accurately.**
 - ▀ The weights should be plotted accurately against the ages on the Child Health Card.

 - ▀ 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 a suitable intervention.

 - ▀ Nutritional counseling should be given to all mothers/ caretakers irrespective of the growth

status of the child.



- Encourage mothers/caregivers to keep the Child Health Card properly. The Child Health Card should be brought each time the child is brought to the health unit or for weighing, to ensure that there is continuous plotting of the weight on the same card.

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

4.3 Severely malnourished children with HIV/AIDS

Why is nutritional care of severely malnourished HIV infected children important.

Severely malnourished children with HIV/AIDS are about five times more likely to die than uninfected children. Such children rarely respond to conventional nutritional rehabilitation and 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 mothers/caretakers take children for growth monitoring and seek health care and support for children who are not growing well so that they do not become severely malnourished.

What you can do

- Be aware of signs of severe

malnutrition:

- ▀ Look out for visible severe wasting, especially of the trunk and buttocks.
- ▀ Look out for oedema (swelling) of both feet.
- ▀ Look for anemia, pallor of the palms and mucus membranes.
- ▀ If possible, weigh the child and plot the weight on the Child Health Card.

Categorise Severe Malnutrition Using the Table

Weight-for-height (%)	Weight-for-age (%)	Oedema	
		Present	Absent
70-79%	60-80%	Kwashiorkor	Underweight
Less than 70%	Less than 60%	Marasmic Kwashiorkor	Marasmus

Guidelines for Service Providers

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

- Check for and attend to complications that might lead to death:
 - ▀ If the child has a very low body temperature (below 35 °C), keep the child warm.
 - ▀ If the child is dehydrated or has diarrhoea, give an oral rehydration solution to replace lost fluids.
 - ▀ If the child has hypoglycemia (characterized by drowsiness and stupor), give a glucose solution (use intravenous fluids in moderation).
 - ▀ Provide broad-spectrum antibiotics to all children with severe malnutrition.
 - ▀ Start feeding children with foods that can provide 75 kcal per kg per day at least within two hours of admission.



- Counsel the mothers/caretakers on the need for referral and urgently refer children with severe malnutrition to the hospital or an appropriate nutritional rehabilitation institution.



- When in a hospital or a Nutritional Rehabilitation Centre, severely malnourished children should be managed according to the following recommended guidelines: *The Management of Severe Malnutrition in Uganda*.

- After discharge:
 - Encourage the mother/caretaker to feed the child frequently with energy and nutrient-dense food.
 - Encourage the mother/caretaker to involve the child in play and stimulation in order to foster the child's development.
 - Advise the mother/caretaker to take the child for regular follow-up to ensure the child completes immunization, receives 6-monthly vitamin A and undergoes monthly growth monitoring.

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

- ▀ Severely malnourished children with HIV/AIDS who are not on ARVs should be referred to providers of anti-retroviral therapy services if such services are available.

Guidelines for Service Providers

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

5

NUTRITIONAL CARE FOR PHA TAKING MEDICATION OR HERBAL REMEDIES

Why is nutritional care of PHA on medication or herbal remedies important.

People with HIV/AIDS may take several types of medications, including anti-retroviral drugs (ARVs) and herbal remedies, to treat various infections. Some of them also use micronutrient supplements such as iron, vitamin A or multivitamins.

Medications can interact with certain nutrients, reducing their efficiency. For example, isoniazid, which is used in the treatment of tuberculosis, inhibits metabolism of vitamin B6 and may cause vitamin B6 deficiency. Similarly, the antibiotic tetracycline inhibits absorption of calcium, magnesium, zinc and iron.

Medications may also have side effects like nausea, vomiting,

Change of taste, loss of appetite and diarrhoea. These side effects can lead to reduced absorption of food, poorer nutritional intake and weight loss. Some medications, such as ARVs, can cause metabolic side effects that may result in increased risk for other nutrition-related conditions such as heart and bone disease.

Food may also have a negative effect on the absorption, distribution, metabolism and excretion of medication. Both macro- and micronutrient malnutrition may reduce the efficiency of the medicines. It is therefore important to be aware of food-drug interactions in order to minimize detrimental side effects.

What you can do

I. Support PHA with information to prevent food-drug interactions and to mitigate the side effects of medications and herbal remedies.

Guidelines for Service Providers

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

- Keep yourself up-to-date about information on food and drug interactions.
 - Read widely and always take note of the instructions found on drug packages. Consult health professionals, nutrition experts and herbalists.
 - Attend seminars, conferences, workshops and meetings where HIV/AIDS care and support issues are being discussed.
- Provide PHA with information, education and communication materials that address dietary issues related to medication.
- Provide PHA with contacts where they can get further information on the interaction between food/nutrition and drugs.
- Identify and use appropriate channels to effectively disseminate information and create awareness on nutritional challenges associated with use of medications. Channels might include health care facilities, pharmacists, ASOs, and

PHA networks.

II. Support PHA to meet their drug and food obligations to prevent negative effects of food-drug interactions and to mitigate harmful side effects.

- Advise PHA on the drugs that should be taken with or without food (refer to Annex 4 for specific food-drug interactions).
- Help PHA to devise a meal plan and drugs timetable to minimize the side effects of the medication.
- Emphasise the need to closely follow instructions for medication as prescribed and to continue the medication for its full course.
- With your client, monitor the effects of medication (including ARVs) on his/her health and nutritional status.

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

ARVs and Nutrition

- ARVs lower the viral load of the infected person and improve nutritional status, assuming that good nutrition is practiced.
- Changes in body composition for PHA on ARVs may include buffalo neck, excessive fat deposition and redistribution to the belly or breast.
- Some forms of fat that are risk factors for heart disease are increased in PHA on ARVs.
- Some ARVs cause anemia in both adults and children.
- There is need to periodically assess the Hb levels, fat levels, and blood sugar.

- Counsel clients that not all symptoms are necessarily due to side effects of drugs. Prompt treatment is necessary for any infections, allergies and other conditions.
- Take note of any side effects and action taken regarding

effects! Record this on the client's medical record.

- All abnormal reactions should be referred to a health worker.
- Counsel your client on the use of herbal remedies and emphasize the need to seek medical advice from a health care facility.

The above recommendations also apply to children on ARVs and other medication.

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

6

FOOD SECURITY FOR HOUSEHOLDS AFFECTED BY HIV/AIDS

Why is food security important for households affected by HIV/AIDS.

Household food security means that all people in the home, including young children, have access to adequate amounts and quality of food throughout the year. To achieve this, households must not only have the ability to produce, purchase or store food but must also have adequate knowledge on how to use the food.

HIV/AIDS increases the risk of food insecurity through its impact on productive labor, income and food stores. Illness and death due to the disease reduce household labor, and labor of healthy members is often shifted to caring for sick household members. Any earnings and savings are diverted to meet health care and funeral costs. HIV/AIDS thus affects all three components of food security: availability,

accessibility and utilization.

Food insecurity may lead people to adopt risky survival strategies such as: sex for food and money, child labor, crime and drug abuse. All these factors may increase the spread of HIV/AIDS. Food insecure populations are often the most vulnerable to the disease and its impacts.

Many people living with HIV/AIDS may be unable to follow food and nutrition recommendations due to their inability to access the foods required.

What you can do

1. Improve your knowledge of the household's dietary practices and the underlying factors that might prevent PHA from improving their food security.

Guidelines for Service Providers

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

- As a service provider, you should have knowledge of the community where you work in the following areas:
 - ▀ The HIV/AIDS burden on the community
 - ▀ Food production patterns in the community and in households with PHA (types, quantities, and seasonality)
 - ▀ Access to health, social and financial services
 - ▀ Division of labor in households of PHA
 - ▀ The utilization of food available to the households (preparation, processing, preservation, storage, purchasing and marketing)
 - ▀ Food consumption patterns (number and timing of meals, distribution of food among household members, and socio-cultural factors)
 - ▀ Coping mechanisms for insecurity (food for work, food aid and migration)
- Assess food security in households affected by HIV/AIDS.
 - ▀ Availability (ability to produce and purchase, donations, diversity of foods available, and

- of foods available, and
 - amount of food)
 - Accessibility (whether every member of the household gets adequate food in terms of quantity and variety).
 - Utilisation (preparation, processing, preservation, storage, and marketing).
- Assess households for constraints and challenges met in adopting recommended practices.
 - Help households to identify food security strategies that are effective and sustainable within their context of labor, social support, and financial resources.

II. Support households affected by HIV/AIDS to implement effective and sustainable food security strategies.

- Encourage households to improve food security by growing a variety of foods and rearing animals like chickens and rabbits.

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

- Collaborate with agricultural extension officers to provide advice on how to improve agricultural productivity using new crop breeds and new technologies to reduce labor requirements.
- Encourage families to start income generating activities (IGAs) to enable families to remain financially secure and conserve family integrity. IGAs may be on-farm or off-farm. Households may link up with micro-finance institutions to support production.
- Help households reallocate their household food expenditures so as to increase purchase of nutritious foods.



- Help members of the households adjust routine tasks to accommodate nutritional care and support for PHA.
- Encourage households to distribute food according to the different nutritional needs of members.

III. Link household members to food assistance services in the community.

- As a service provider you should be aware of services offered to strengthen food access and availability among households affected by HIV/AIDS.
 - You should know what they offer, the criteria used to target recipients, and when they offer the services.
 - You should have reading materials (or samples) from these services that you can leave or share with the client, or be able to communicate the important information from those materials.

Guidelines for Service Providers

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

- Work with programme managers operating food assistance services in area.
 - Agree on criteria for participation in services and establish formal links to avail referrals.

- Refer eligible beneficiaries/clients to these services that may provide food support to them or their family.
 - You may need to give a referral note that is acknowledged by the programmes.
 - If there are food programmes that provide replacement foods or weaning foods, households with HIV-infected pregnant or lactating mothers may be referred to those programmes.

- Inform clients about food security social networks in the community, such as:
 - Groups which assist households affected by HIV/AIDS to grow food or to harvest.
 - Groups that collect food and distribute it to families affected by HIV/AIDS.

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

7 NUTRITIONAL COUNSELING FOR PEOPLE LIVING WITH HIV/AIDS

Why is nutritional counseling for PHA important.

Counseling is an integral part of the nutritional care and support of PHA. Good counseling can result in positive changes in nutrition related behavior and help improve the quality of life of PHA. However, most of the service providers in Uganda are not trained counselors; therefore they need basic counseling skills.

When counseling your goal is to help the client to:

- Assess his/her needs clearly in the context of his/her living situation.
- Identify the alternatives he/she has for correcting a problem or meeting

a need.

- Address the constraints that may affect choice of the alternatives.
- Make the best choice depending on his/her circumstances.
- Understand the pros and cons of each option and take responsibility for choices made.
- Express their innermost fears/feelings or concerns and develop the confidence to address them.
- Develop a positive attitude towards achieving behavior change.

You should give preference to individual counseling through a one-to-one talk. Group counseling is of value if you do not know the HIV infection status of most members of the group.

Guidelines for Service Providers

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw



When counseling a client, you should impart information and advice on diet, nutrition, and healthy eating. You should also help the person deal with feelings and reactions to the HIV infection. The following are some basic counseling tips that you will find useful:

- Always treat the client with respect.
- Listen carefully and actively to the client's situation/concerns. Avoid insincere sympathy. Empathise with the client's situation.
- Ask open-ended questions to elicit detailed responses and dialogue with

- the client
- Praise and affirm the things that the client is doing right.
 - Allow the client the opportunity to make decisions on her/his choices on the way forward.
 - Maintain professional conduct and emotional stability during all counseling sessions.
 - Maintain privacy and confidentiality.
 - Always be conscious of issues that may require referral.

What you can do

I. Create an environment conducive for counseling.

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

- Make seating available for counseling. Ensure that there is space to guarantee privacy.
- Develop a positive attitude. Remember people are able to make choices that fit with their circumstances; they just need our support.
- Set aside the time for counseling to avoid rushing.
- Establish rapport with the client:
 - Welcome the person;
 - Greet the person in a kind and friendly way;
 - Introduce yourself and let the client also introduce him/herself;
 - Ask general questions about the patient's feelings, health and welfare.
- Reassure clients of confidentiality.

II. Assess the needs of the client, and provide information to help decision-making.

- Make the client feel comfortable to tell their story and express their needs and wants during the counseling session.
- Empathise with clients, especially those in shock, depressed or frightened.
- Pay attention to special needs or fears of some groups, e.g. pregnant women, adolescents, and school children.
- Interviews/assessments should be conducted in a nonjudgmental manner to elicit more accurate responses (e.g. be aware of body language, both yours and the person you are counseling).
- Remember to be an active listener and be sensitive to changes in mood.

Guidelines for Service Providers

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

- Communicate nutrition information according to the client's needs and what they already know. Explain why you are giving that information.

III. Help the client to make practical decisions.

- Request the client to use the information provided to make the correct decision.
- Help the client come up with a plan that will work given the context.
- Review cultural values and beliefs as well as any family or community factors that may affect his/her decision.
 - Be aware of traditional practices and beliefs that may influence the client's choices in particular situations.
- Help the client make informed decisions. For example, use a list of local, affordable and accessible foods to show the client how much extra food he/she

needs to eat.

- Make sure the client understands who else is affected by his/her decisions and what implication these decisions may have.
- If you give information that encourages behavior change, suggest one change at a time, and make sure that the recommendations are realistic given the client's circumstances.

IV. Support the client to implement the decisions they have made to address nutrition concerns.

- Help the client recall what has been discussed and agreed upon to ensure they know exactly what they need to do. You may role-play if necessary.
- Help the client build confidence that they know how to implement the decisions made.

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

- Help the client consider who else may support the decisions made.
- Praise and reaffirm those things that the client is doing right, to help build self-confidence and motivation.
- Work out a follow-up plan with the client, including return dates and where to seek support in case there is need.

Guidelines for Service Providers

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

8

MONITORING AND EVALUATION OF NATIONAL GUIDELINES

Why is monitoring and evaluation important.

Systematic assessment, analysis and documentation of the progress in the implementation of major activities related to nutritional care and support are essential. Monitoring and evaluation can generate information regarding the extent to which the main objectives of the guidelines are being met. It can also improve efficiency of the users of the guidelines.

Monitoring and evaluation (M&E):

- Allows for improvements in interventions.
- Provides stakeholders with information regarding progress in use of food and nutrition as an important component in the

comprehensive care and support for people living with HIV/AIDS.

- Allows the sharing of results and lessons learned with other programs and supplies the information to advocate for increased support for nutritional care and support programmes.
- Creates awareness about improvements in nutritional status that can be achieved through behavior change as recommended by the guidelines.

Your role in monitoring and evaluation will be to assess and report to what extent you and other programmes in the locality have incorporated recommendations from the guidelines in your/their activities. You will also assess and report to what extent these recommendations have resulted in improved dietary patterns and nutritional status of PHA.

Guidelines for Service Providers

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

- By participating in monitoring and evaluation of the national guidelines, you will be contributing to answering three key questions:
 1. Are the Guidelines aiding you in the delivery of nutritional care and support to PHA. Which elements are working well, which are not, and what are the gaps.
 2. Are the guidelines improving the nutritional status and quality of life of PHA.
 3. Are there measurable dietary behaviour changes among PHA.

What you can do

- Keep accurate records of all your clients including their weights, food intake behaviors, symptoms and treatments. Aggregate this data and report it to your managers as often as possible.
- With key stakeholders and related

programs/interventions and the key indicators to be used.

- Preferred indicators (see Annex 6) relate to associated behavior changes, for example: feeding frequency, diet diversity, increased protein and energy intake, continuous weight monitoring, and use of dietary approaches to counter symptoms that affect nutrition (nausea, diarrhoea, and thrush).
- Monitor the availability and accessibility of the national nutrition/HIV guidelines to other service providers within your sector and in other sectors including in the private sector, NGOs, and government.
- Report on the use of the guidelines or associated materials in the nutritional care and support of PHA.

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

REFERENCES

FANTA, 2001. HIV/AIDS: A Guide for Nutrition, Care and Support. Food and Nutrition Technical Assistance Project, Academy for Educational Development, Washington DC. www.fantaproject.org

FAO/WHO, 2002. Living Well with HIV/AIDS: Nutritional Care and Support for People Living with HIV/AIDS. Food and Agriculture Organization and World Health Organization, Rome/Geneva. www.fao.org

MAAIF, 1997. Feeding Guidelines for People Living With HIV/AIDS: A Handbook for Field Extension Workers. Ministry of Agriculture, Animal Industry and Fisheries, Entebbe, Uganda.

MAAIF, 1997. Nutrition and HIV/AIDS: A Handbook for Field Extension Agents. Ministry of Agriculture, Animal Industry and Fisheries, Entebbe, Uganda.

MOU/DSA, 2001. South Africa National Guidelines on

MOH/KSA, 2001. South African National Guidelines on Nutrition for People Living with TB, HIV/AIDS and Other Chronic Debilitating Conditions. Ministry of Health, South Africa.

MOH, 2001. Policy Guidelines on Feeding of Infants and Young Children in the Context of HIV/AIDS, Ministry of Health, Kampala, Uganda.

MOH, 2001. Policy for the Reduction of the Mother-to-Child HIV Transmission in Uganda, Ministry of Health, Kampala, Uganda.

MOH, 1999. The Management of Severe Malnutrition in Uganda: A Guide for Health Workers. Ministry of Health, Kampala, Uganda.

NAP+ 2002. Food for People Living with HIV/AIDS. Network for African People Living with HIV/AIDS. Nairobi, Kenya.

Piwoz, Ellen G. and Elizabeth A. Preble, 2000. HIV/AIDS and Nutrition: A Review of the Literature and Recommendations for Nutritional Care and

Guidelines for Service Providers

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Support for Sub-Saharan Africa. Support for Analysis and Research in Africa (SARA) Project. Washington DC.

RCQHC/FANTA, 2003. Handbook: Developing and Applying National *Guidelines on Nutrition and HIV/AIDS. Regional Centre for Quality of Health Care, Kampala, Uganda.* www.fantaproject.org

RCQHC/FANTA/LINKAGES, 2003. Nutrition and HIV/AIDS: A Training *Manual. Regional Centre for Quality of Health Care, Kampala, Uganda.* www.fantaproject.org

RCQHC/LINKAGES, 2002. Nutrition Job Aids: Regions with High HIV *Prevalence. Regional Centre for Quality of Health Care, Kampala, Uganda.* www.linkagesproject.org

RCQHC/USAID, 2003: Counseling Mothers on Infant Feeding for the *Prevention of Mother-to-Child Transmission of HIV: A Job Aid for Primary Health Care Workers. Regional Centre for Quality of Health Care, Kampala,*

Uganda.

STD/ACP/MoH, 1999. 1999 HIV/AIDS Surveillance Report, Ministry of Health, Kampala, Uganda.

STD/ACP/MoH, 2002. 2002 HIV/AIDS Surveillance Report, Ministry of Health, Kampala, Uganda.

Uganda AIDS Commission, 2003. The Overarching HIV/AIDS Policy for Uganda. *Kampala, Uganda.*

UDHS, 2001. Uganda Demographic and Health Survey, 2000/2001, Uganda Bureau of Statistics, Entebbe, Uganda.

WHO/BASICS/UNICEF, 1999. Nutrition Essentials: A Guide for Health Managers. *BASICSII, Washington DC.*

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

ANNEX 1

Essential nutrients, their functions and local dietary sources

SPECIFIC NUTRIENT	ROLE	DIETARY SOURCES
Carbohydrates (sugars and starches)	<ul style="list-style-type: none"> Provide energy and promote body function 	cereals such as maize and rice starchy roots such as cassava, sweet potatoes, Irish potatoes and yams starchy fruits such as <i>matooke & bbogoya</i> sugars from sugar cane, ripe fruit, milk, and honey
Fats and Oils	<ul style="list-style-type: none"> Provide a concentrated source of energy Form 	cooking oil, cooking fats (including ghee, Kimbo, and Cowboy) and Blue Band

	<p>essential structure of cells of the</p>	<p>margarine fatty animal foods such as meat, chicken, milk and fish fatty vegetable foods, such as groundnuts and soybeans</p>
<p>Proteins</p>	<ul style="list-style-type: none"> Promote cell growth and repair 	<p>PLANT: legumes and pulses (such as beans, cowpeas, garden peas, pigeon-peas and groundnuts) ANIMAL: milk and milk products like yogurt (bbongo) and cheese</p>

VITAMINS

<p>Vitamin A</p>	<ul style="list-style-type: none"> Promotes maintenance of epithelial cells, mucous membranes, & 	<p>yellow/ orange fruits and vegetables (such as mangoes, pawpaws, carrots, and pumpkin)</p>
-------------------------	---	--

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

SPECIFIC NUTRIENT	ROLE	DIETARY SOURCES
	the health and integrity of the skin ♦ Supports immune system and provides resistance to infections ♦ Promotes growth ♦ Ensures good vision	yellow sweet potatoes dark green leafy vegetables (DGLVs) (including doodo, <i>nnakati, bbugga, and sukuma wiki</i>) milk, eggs, liver, full cream milk, Blue Band margarine
Vitamin B1 (Thiamin)	♦ Involved in producing energy for the body ♦ Supports appetite & central nervous system functions	whole grain cereal, such as roasted and cooked maize, legumes and oil seed fish, liver, milk and eggs
Vitamin B2 (Riboflavin)	♦ Contributes to energy production in the body	fish, liver, meat, milk and eggs whole grain cereals and legumes DGLVs
Vitamin B3 (Niacin)	Enables energy production in the body ♦ Supports	whole grain cereals fish, meat, chicken & eggs

	<ul style="list-style-type: none"> Supports appetite and general functions
Vitamin B6	<ul style="list-style-type: none"> Facilitates metabolism & absorption of fat and proteins. (especially white beans), avocado and DGLVs maize, potatoes, and water melons Promotes Red blood cell (RBC) formation fish, meat, and chicken
Vitamin B12	<ul style="list-style-type: none"> Contributes to synthesis of new cells fish, meat, chicken, eggs and milk Maintains nervous system.
Vitamin C	<ul style="list-style-type: none"> Contributes to bone formation citrus fruits such as guavas, lemon and oranges Improves the absorption of non-haem iron tomatoes, red and green peppers, Irish potatoes, yams, matooke, and fresh milk Improves resistance to infections Serves as an anti-oxidant Helps protein metabolism
Vitamin D	<ul style="list-style-type: none"> Required for mineralization of bone and teeth produced by the skin on exposure to sunlight milk, cheese, butter, eggs, & liver

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

SPECIFIC NUTRIENT

ROLE

DIETARY SOURCES

Blue Band margarine
fatty fish, especially
mpuuta and mukene

Folic acid(Follate) Supports synthesis of liver and fish

new cells, especially RBCs DGLVs, legumes, oil seeds,
and gastro-intestinal cells groundnuts

Vitamin E

- Acts as an anti-oxidant, DGLVs, legumes and pulses,
by preventing the breakdown of fat and
other cells
- whole cereals, and oil seeds
(such as groundnuts)
butter, liver, egg yolk, and
milk

MINERALS

Zinc

- Supports immune system DGLVs, legumes and pulses,
function and resistance to whole cereals, and oil seeds
infections (such as groundnuts), and
- Promotes wound healing garlic
- Metabolizes vitamin A butter, liver, egg yolk, milk,
(as an antioxidant) meat, chicken, and fish

Selenium	<ul style="list-style-type: none"> ♦ Serves as an antioxidant preventing the breakdown of fat and other body cells 	<p>milk, liver, egg yolk, meat, and other body</p> <p>roasted and boiled maize, brown rice, and brown maize flour</p>
Magnesium	<ul style="list-style-type: none"> ♦ Assists muscle and nerve function and release of energy 	<p>DGLVs, legumes and pulses, whole cereals, nuts, avocado and potato stems</p>
Iron	<ul style="list-style-type: none"> ♦ Promotes oxygen exchange in the blood ♦ Serves as a coenzyme 	<p>meat, liver, kidney, eggs and milk</p> <p>DGLVs, legumes and pulses, whole cereals, nuts, avocado, Irish potatoes, and fish</p>
Protein -rich food supplements	<ul style="list-style-type: none"> ♦ Provide a concentrated form of essential amino acids 	<p>Commercially available under different trade names.</p>

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

SPECIFIC NUTRIENT

ROLE

DIETARY SOURCES

Fibre

- Makes foods bulky, unprocessed plant giving a feeling of satiety, foods leading to less consumption of energy, and thus reduce the likelihood of obesity. Aids in rapid transit of food in the intestinal tract; assisting normal & healthy intestinal and bowel function

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

ANNEX 2

Daily energy and protein requirements for adults

Group of people	HIV Negative		HIV Positive*	
	Energy (kcal/day)	Protein (g/day)	Asympomatic (Not displaying symptoms) (kcal/day)	Sympomatic** (Displaying symptoms) (kcal/day)
Adults				
Average active male	2,430	57	2,670	2,910-3,160
Women				
Average active	2,170	48	2,400	2,600-2,820
Pregnant	2,460	55	2,710	2,950-3,200
Lactating	2,570	68	2,830	3,080-3,340

Children				
6-11 months	730	10	800	880-950
1-3 years	1,250	25	1,380	1,500-1,630
2-5 years	1,500	26	1,650	1,800-1,950
5-10 years	1,800	35	1,980	2,160-2,340
Boys				
10-14 years	2,360	64	2,600	2,830-3,070
15-18 years	2,800	84	3,080	3,360-3,640
Girls				
10-14 years	2,040	62	2,240	2,450-2,650
15-18 years	2,100	65	2,310	2,520-2,730

* HIV positive adults may also require increased protein and micronutrients, but research has not yet proven this.

** HIV positive adults displaying symptoms will require between 20-30% additional energy depending on the progression of the disease.

Guidelines for Service Providers

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

ANNEX 3

Safe food handling practices

Washing of hands thoroughly before preparing, handling, and eating food and after using the toilet or changing diapers or nappies. Use running water and soap.

Washing and keeping of food preparation surfaces, utensils and dishes always clean.

Washing all fruit and vegetables with clean water before eating, cooking or serving.

Avoiding letting raw food come into contact with cooked food.

Ensuring all food is cooked food thoroughly, especially meats and chicken.

Avoiding storing cooked food unless one has access to a refrigerator.

Keeping of food covered and stored away from insects, flies, rodents and other animals.

Using safe water for drinking, cooking and cleaning dishes and utensils.
This means using only boiled or bottled water.

Not eating moldy, spoiled or rotten foods.

Not eating raw eggs or foods that contain raw eggs.

Serving foods immediately after preparation especially if food cannot be kept hot.

Not using bottles with teats to feed infants, instead use a cup (and spoon).

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

ANNEX 4

Side effects and recommended food intakes with modern medications

Medication	Purpose	Recommended Potential side to be taken	Potential side effects
Sulfanamides: Antibiotic for treatment of pneumonia Sulfamethoxazole Cotrimoxazole, and toxoplasmosis (Bactrim, Spectra)	With food		Nausea, vomiting, abdominal pain
Rifampin	Treatment of TB	On an empty stomach at least 1-2 hrs before meals	Nausea, vomiting, diarrhoea and loss of appetite
Isoniazid	Treatment of TB	On an empty stomach at least 1-2 hrs before meals	May cause reactions with foods such as bananas

			<p>bananas, avocados, caffeinated beverages, chocolate, sausage, liver, smoked fish, yeast and yoghurt. May interfere with vitamin B6 metabolism and therefore require vitamin B6 supplement.</p>
Quinine	Treatment of malaria	With food	Abdominal or stomach pain, diarrhoea, nausea, vomiting, lower blood sugar

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Medication	Purpose	Recommended to be taken	Potential side effects
Sulfadoxine and pyrimethamine (Fansidar)	Treatment of malaria	With food and continuously clean boiled water if	Nausea, vomiting. Not recommended for women who are breastfeeding.
Chloroquine	Treatment of malaria	With food	Stomach pain, diarrhoea, loss of appetite, nausea, vomiting. Not recommended for women who are breastfeeding.
Fluconazole	Treatment of candida (thrush)	With food	Nausea, vomiting, diarrhoea. Can be used during breastfeeding.
Nystatin	Treatment of thrush	With food	Infrequent occurrence of diarrhoea, vomiting

Zidovudine	Antiretroviral With food	vomiting, nausea, nausea, vomiting.
Nevirapine	Antiretroviral With food	Sedative effect, diarrhoea, nausea, rash.

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

ANNEX 5

Check List for Nutrition Counseling

This checklist can be used to assess your counseling against the counseling tips.

Did you	YES	NO
Greet the client.		
Introduce him/herself to the client.		
Treat the client with respect and acceptance.		
Listen carefully and actively, and with empathy to the clients needs and concerns.		
Make eye contact when talking to the client.		
Take note of the verbal and non-verbal cues from the client.		
Ask open-ended questions.		
Praise and reaffirm the things the client is doing right.		

Provide interventions that were acceptable, affordable and feasible for the client.		
Communicate the nutrition information with regard to the clients level of knowledge, and cultural values and beliefs.		
Provide practical and realistic suggestions/recommendations to the client.		
Maintain professional contact during the counseling session.		
Discuss follow up with the client.		

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

ANNEX 6

Indicators for monitoring and evaluation

Incorporation and application of guideline information and recommendations into programmes, services, and other delivery points

Most of these indicators can be disaggregated (broken down) by type of program, intervention or service if that information is useful.

Accurate inclusion of key information and recommendations from guidelines in programmes, services or other activities. One way to define this indicator is the percentage (or number) of programmes/services that include key recommendations from the guidelines. ¹

Percentage/number of counsellors, service providers, etc. trained in information and recommendations from the guidelines.

Percentage/number of VCT programmes that include nutritional

- Percentage/number of private sector companies with additional care and support activities.
- Percentage/number of home-based care programmes that include nutritional care and support.
- Percentage/number of hospitals offering nutritional care and support.
- Knowledge levels of key implementers (counsellors, etc.) in guideline information. The indicator could be defined as the percentage of key implementers with knowledge of three key recommendations from the guidelines. ²
- Coverage: Approximate number of beneficiaries receiving inputs from programmes, services, etc. that incorporate guideline recommendations.
- Knowledge levels of the target audience (PHA, primary caregivers). This could be defined as the percentage of beneficiaries from programmes/services receiving the guidelines who know three key recommendations from the guidelines. ³

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

	<p>Effectiveness of communication of guideline recommendations. This can be defined as percentage of counsellors scoring higher than 75 percent on a nutrition counselling checklist. ⁴</p>
Behaviour change by PHA	<p>Frequency of eating Dietary diversity: number of different types of foods consumed Protein intake Energy intake Practice of recommended dietary responses to symptoms (nausea, diarrhoea, thrush, etc.) Timing of meals to manage food-drug interactions</p>
Impact on health, nutrition, well-being of PHA ⁵	<p>Weight or weight-for-height Body-mass index (BMI) Physical activity Ability to perform basic work activities Frequency and severity of opportunistic infections Frequency and severity of symptoms Ability to eat</p>

¹This can be measured by identifying a few specific, key recommendations from the guidelines and then looking at how many programs/services include them. (To avoid having to measure all programs, a random sample of those institutions receiving the guidelines could be used.)

²One way to measure this is to identify three key recommendations or points of information and then check the knowledge of a sample of implementers.

³Again, this could be measured by identifying key recommendations and checking the knowledge of a sample of beneficiaries.

⁴This can be used for counselling situations and may involve using a counsellor checklist to assess the communication of nutritional care information.

⁵While these are all indicators that nutritional care and support is expected to improve, using them to evaluate the impact of nutritional interventions can be problematic because a) there are many confounding factors that can affect these indicators more strongly than nutrition does, and b) over the long run the health and nutritional status of PHA is often declining, and nutritional interventions may just reduce the severity of the decline. Therefore, additional tools may be needed to measure this level of impact.

Guidelines for Service Providers

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

ANNEX 7

Existing Policies, Guidelines and Current Initiatives

Policies that address the care and support of PHA in Uganda include:

The HIV/AIDS Policy of 1999. This policy addresses prevention of HIV/AIDS, mitigation of the adverse impact HIV/AIDS on the health and socio-economic aspects; information, education and communication for behavioural change; and monitoring and evaluation of HIV/AIDS related activities.

Policy Guidelines on Feeding of Infants and Young Children in the Context of HIV/AIDS. These guidelines address key issues regarding infant feeding in the context of HIV/AIDS.

The Policy for Reduction of the Mother-to-Child HIV Transmission in Uganda of 2003. This policy addresses key issues related to prevention of mother to child transmission (MTCT) of HIV, as follows: antiretroviral therapy in reduction of MTCT: voluntary counseling and testing (VCT): infant

feeding support for mothers and infants and other interventions for reduction of MTCT.

The Food and Nutrition Policy of 2003. This provides a framework for addressing nutrition issues in the country.

Existing initiatives and interventions include:

The Parliamentary Committee on HIV/AIDS, which represents national-level commitment and advocacy for HIV/AIDS programmes.

The Uganda AIDS Commission. It was established by an Act of Parliament in 1992 to coordinate HIV/AIDS activities in the country.

World AIDS Day, which is observed annually to pay tribute to those who have died from the pandemic and to show solidarity for those infected and affected by HIV/AIDS. World AIDS Day is also used to sensitise the population about initiatives in prevention, care and support of PHA.

Capacity development of service providers in a comprehensive package on HIV/AIDS care and management, including nutrition.

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Quality assurance of services provided in the health sector including nutrition and infant feeding in the context of HIV/AIDS.

Government sector HIV/AIDS control units: there are 13 government Ministries with HIV/AIDS control units. AIDS Information Centres (AICs) are also a government initiative.

The AIDS Support Organization (TASO), which is the leading NGO offering care and support for PHAs.

National Forum for People Living with HIV/AIDS.

International agencies like WHO, UNAIDS, UNICEF, WFP, FAO and USAID.

Guidelines for Service Providers

67

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

ANNEX 8

Nutritional Management for Symptoms Associated with HIV

Illness	Food	Care and Nutrition Practices
Anorexia (appetite loss)	<p>Try to stimulate appetite by eating favorite foods.</p> <p>illness, seek medical attention</p> <p>Eat small amounts of food more frequently.</p> <p>Select foods that are more energy dense.</p> <p>Avoid strong smelling foods.</p>	<p>If loss of appetite is due to seek medical attention for treatment.</p>
Diarrhea	<p>Drink lots of fluids to Prevention</p> <p>avoid dehydration (soups, diluted fruit juices, boiled water).</p> <p>Drink juices such as</p>	<p>Drink plenty of clean boiled water.</p> <p>Wash hands with soap and water before handling,</p>

passion

fruit, serving citrus (orange, serving or storing foods.

avoid) because it may irritate the stomach.

Consume foods rich in fiber to help you retain after defecation.

fluids (millet, banana, Treatment

peas and lentils).

Eat starchy foods like rice, maize, sorghum, potato, cassava and blended foods like corn-soy blend.

For protein, eat eggs, four teaspoons sugar and a chicken or fish.

Drink light teas (herbal), boiled water.

Boil or steam foods, avoid fried foods.

preparing,

or storing foods.

Wash hands with soap and water after using a toilet or

latrine or cleaning a child

after defecation.

Treatment

Drink more fluids to

prevent dehydration. Prepare rehydration solutions using

oral rehydration salt packets or a home-made solution of

one liter of boiled water,

four teaspoons sugar and a

half teaspoon of iodized salt

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Illness	Food	Care and Nutrition Practices
Diarrhea	<p>Consume fermented foods like porridges, yogurt; symptoms such as severe <i>rampuku</i>.</p> <p>Consume easily digestible foods high in carbohydrates, like rice, bread, millet, maize porridge, potato, sweet potato, crackers.</p> <p>Eat small amounts of food frequently and continue to eat following illness to recuperate weight and nutrient loss.</p> <p>Eat soft fruits and vegetables like bananas, squash, matooke, mashed sweet potato, mashed carrots.</p> <p>Drink nonfat milk if there :-</p>	<p>Go to a health center if dehydration (low or no urine output, fainting, dizziness, shortness of breath, bloody stools, high fever, vomiting, abdominal pain or diarrhea) persist for more than 3 days.</p>

is
fructose.
problem
with
*Foods to avoid or
reduce intake:*

Some dairy products,
such as milk.

Avoid caffeine (coffee
and teas) and alcohol.

Reduce intake of fatty
foods.

Avoid excessively fried
foods and extra oil,
lard or butter.

Limit intake of
gas-forming food such
as cabbage, onions,
carbonated soft drinks
(sodas).

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Illness	Food	Care and Nutrition Practices
Fever	<p>Eat soups that are rich in foods that give energy and nutrients, like maize, potatoes and carrots.</p> <p>Drink plenty of liquids.</p> <p>Drink teas from lemon, guava and gum tree.</p> <p>Drink more than usual (morning, afternoon and beyond thirst).</p>	<p>Drink fluids to prevent dehydration, particularly clean and boiled water.</p> <p>Bathe in cool water.</p> <p>Rest.</p> <p>Take 2 aspirin or panadol with a meal three times a day</p> <p>evening) if available.</p> <p>Continue to eat small frequent meals as tolerated.</p> <p>Go to the health center in case of:</p> <ul style="list-style-type: none"> Fever that last several days and is not relieved with aspirin Loss of consciousness Severe body pain Yellow eyes Severe diarrhea Fits

Nausea and Vomiting

Eat small and frequent meals.

Eat foods like soups, unsweetened porridge and fruits like bananas. after eating; wait at least 20 minutes to eat dry foods like crackers to calm the stomach.

Drink herbal teas and lemon juice in hot water.

If available, drink ginger root: crush ginger in cold water, boil in water for 10 minutes; place in a covered container; strain ginger and drink liquid.

Avoid spicy and fatty foods.

Avoid caffeine (coffee

Avoid having empty stomach, nausea is worse if nothing is in the stomach.

Avoid lying down immediately

after eating; wait at least 20 minutes to avoid vomiting.

Rest between meals.

Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Illness	Food	Care and Nutrition Practices
Nausea and Vomiting	and tea) and alcohol. Drink liquids, such as clean boiled water.	
Thrush	Eat soft mashed foods, such as carrot, scrambled for eggs, mashed potatoes, bananas, soups, porridge. Eat cold or room temperature foods. Avoid spicy, salty or sticky foods; these may irritate mouth sores. Avoid sugary foods; these cause yeast to grow. Avoid strong citrus fruits and juices which may irritate mouth sores. Avoid alcohol. Drink liquids.	Seek medical attention for treatment. If available, use a spoon or cup to eat small amounts of foods. Tilt head back when eating to help with swallowing. Rinse mouth with boiled warm salt water after eating to reduce irritation and keep infected areas clean so yeast cannot grow.
Anemia	Eat	If

	<p>Iron</p> <p>more as animal products one iron table. (Eggs, fish, meat and liver) green leafy rich vegetables (collard greens, spinach), fruits and vegetables, legumes (beans, lentils, groundnuts), nuts, oil seeds and fortified cereals.</p> <p>Take iron supplements.</p>	<p>if available, adults take Best if taken with a source of vitamin C such as tomatoes or orange juice to help with absorption. Drink fluids to avoid constipation.</p> <p>Treat malaria and hookworm.</p>
<p>Muscle Wasting</p>	<p>Increase food intake by increasing quantity of</p>	<p>Eat small frequent meals. Eat soft liquid food if mouth</p>

Guidelines for Service Providers

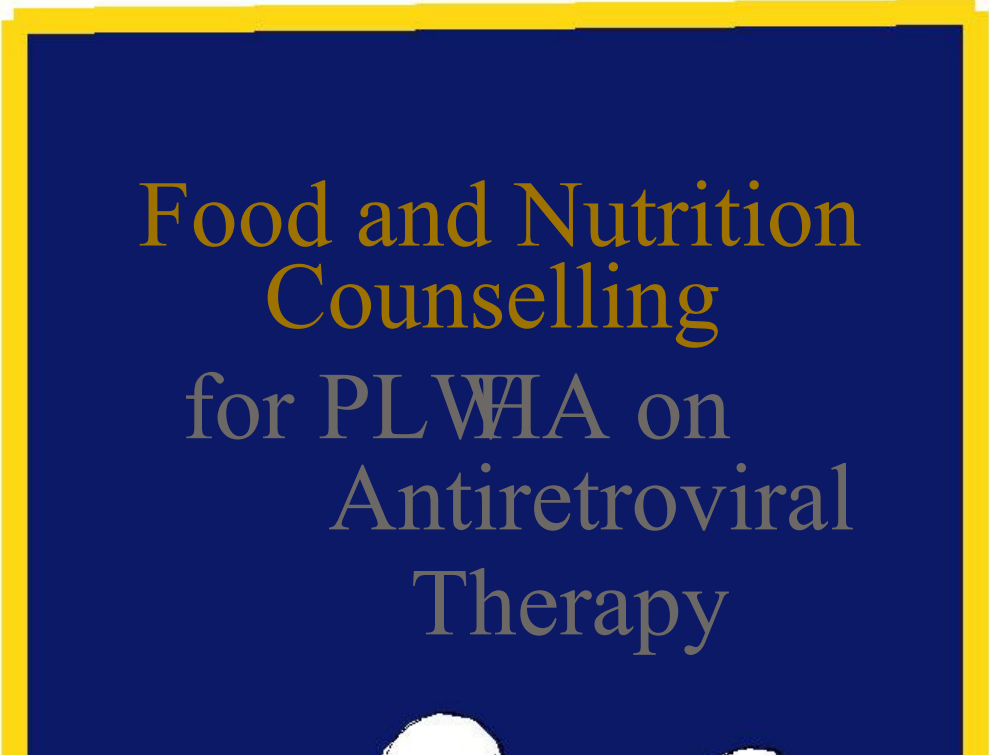
Nutritional Care and Support for People Living with HIV/AIDS in Uganda

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

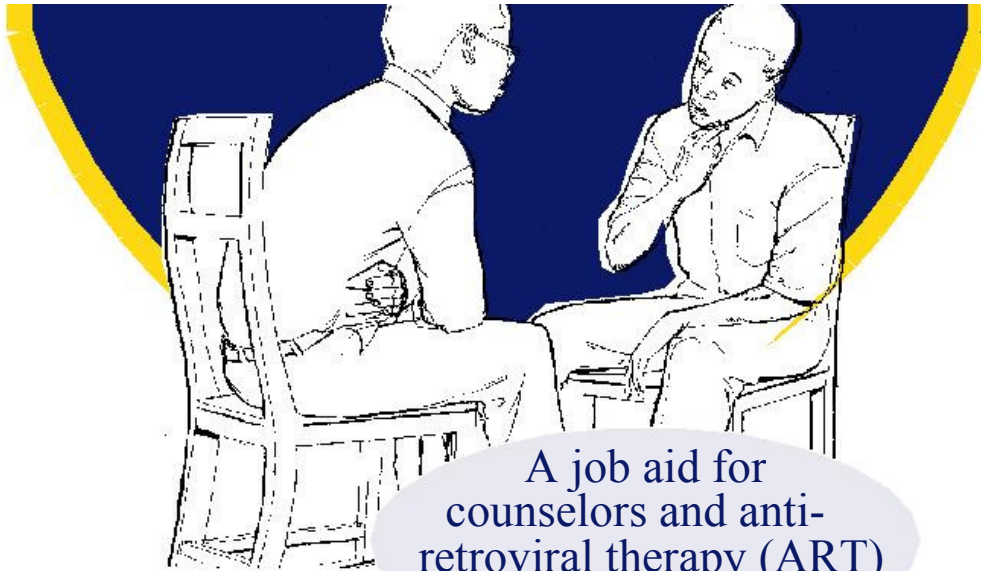
Illness	Food	Care and Nutrition Practices
Muscle Wasting	food and frequency of sores present. consumption. Improve quality and quantity of foods by providing a variety of foods.	Increase protein in diet. Slowly introduce fat in the diet. Increase intake of starchy foods in cereals and other staples. Use fortified foods.
Constipation	Eat more foods that are high in fiber content, such as maize, whole-wheat bread, green vegetables and washed fruits with the peel remaining. Drink plenty of liquids. Avoid processed or refined foods.	Avoid using cleansing practices, such as enemas and medications. Drink plenty of fluids including the boiled water.
Bloatedness/ Heartburn	Eat small frequent meals. Avoid gas-forming	Eat long enough before

	<p>AVOID gas-forming foods sleeping so food can digest. (cabbage, bean). Drink fluids.</p>	
<p>Tuberculosis</p>	<p>Consume foods high in protein, energy, iron and vitamins.</p>	<p>Seek medical attention immediately. Consult medical personnel about taking food with medications. If taking isoniazid for treatment, take a Vitamin B6 supplement to avoid deficiency of this micronutrient.</p>
<p>Loss of Taste and/or Abnormal Taste</p>	<p>Use flavor enhancers, e.g. salt, spices, herbs and lemon. Chew food well and move around mouth to stimulate receptors.</p>	

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw



Food and Nutrition
Counselling
for PLWHA on
Antiretroviral
Therapy



A job aid for
counselors and anti-
retroviral therapy (ART)
service providers

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Food and Nutrition Counseling for PLWHA on Antiretroviral Therapy is a publication of Regional Centre for Quality of Health Care (RCQHC), Kampala - Uganda. Technical support for development of this publication was provided by Food and Nutrition Technical Assistance (FANTA) and LINKAGES projects.

RCQHC is a regional quality of health care capacity development institute largely supported by REDSO/ESA in Nairobi and Makerere University, Kampala.

FANTA is supported by the Regional Economic Development Service Office/East and Southern Africa (REDSO/ESA) and the Office of Health, Infectious Disease and Nutrition of the Bureau for Global Health at the U.S. Agency for International Development (USAID), under terms of Cooperative Agreement No. HRN-A-00-98-00046-00 awarded to the Academy for Educational Development (AED).

LINKAGES project

LINKAGES project is supported by the Regional Service Office/East and Southern Africa (REDSO/ESA) and GH/HIDN of the Economic Development United States Agency for International Development (USAID), under the terms of Cooperative Agreement No. HRN-A-00-97-00007-00.

The opinions expressed herein are those of the authors and do not necessarily reflect the views of USAID.

October 2004

For copies of this book contact:

Regional Centre for Quality of Health Care,
Makerere University Medical School,
P O Box 29140, Kampala -Uganda,
Tel. 256-41-530888, Fax 256 530876

Job aid for counselors - RCQHC



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Acknowledgments

This publication is a product of the Regional Centre for Quality of Health Care (RCQHC). A number of people and organisations contributed to the development of this booklet. The content was drafted by the RCQHC, FANTA, LINKAGES projects, Mary Materu of CONSENUTH in Tanzania and Gakenia Wamuyu Maina of IPH. Additional comments were given during a national workshop held to review the materials in Jinja, May 2004.

Appreciation is expressed for technical input from participants of the Jinja 2004 workshop, specifically, Karen Kyampaire Apophia and Denis Okwar of ACDI/VOCA; Sande Julius of AIC Uganda; Phoebe Nabongo of Infectious

Disease Institute, Mulago; Mulindwa Rwabaingi of Joint Clinical Research Centre; Mary Butamanya and Sheila Nyakwezi of Mildmay; Ursula Wangwe of Ministry of Health; Magero Jacinta of NACWOLA; Faith Akiiki of National Forum of PLWHA; Maria Nanyonga and Resty Ingabire of Nsambya Home Based Care; Joy Elizabeth Ogutu of PATCH CONSULT; Samalie Bananuka of STD/ACP Ministry of Health; Penninah Namusi, Hellen Ekideit and Juliana Nyombi of TASO; Peter Ddamulira of THETA; Lilian Nakato of Uganda HIV/AIDS Control Project; and Irene Kiiza of Livelihood Security Program- World Vision. Gratitude is also due to Dr. Joel Okullo, Director of the RCQHC in Uganda for the leadership provided in helping us produce this booklet.

The RCQHC also appreciates the review comments provided by Tony Castleman, Lora Iannotti, Dorcas Lwanga, Robert Mwadime, Sandra Remancus, and Liz Thomas of AED



Job aid for counselors-RCQHC

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Abbreviations and Acronyms

AIDS Acquired Immuno-Deficiency Syndrome

ARVs Anti-retroviral Drugs

HIV Human Immune Virus

OIs Opportunistic Infections

ORS - Oral rehydration Solution

PLWHA Persons Living With HIV/AIDS

WHO World Health Organisation

Job aid for counselors - RCQHC



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Table of contents

Acknowledgements.....	ii
Abbreviations and acronyms	iii
Introduction.....	v
Booklet use.....	vi
General notes to the job aid user	vii
Section 1 - Preparation for ARV and Nutrition Counseling Session.....	1
Section 2 - Counselling.....	

Section 2 - Counselling clients about Food and Nutrition Implications of ARVs.....	3
Section 3 - Helping clients develop a drug-food timetable	10
Section 4 - Helping clients follow dietary recommendations and the drug-food timetable.....	14
Section 5 - Helping clients maintain a healthy weight	16
Section 6 - Helping clients maintain a healthy body composition.....	20
Section 7 - Counselling clients during home visits.....	23
Reference Charts.....	26
Glossary.....	32



Job aid for counselors-RCQHC

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Introduction

This job aid provides step-by-step information to help counselors and service providers to effectively counsel on nutrition and HIV for PLWHA on ARVs.

Using this job aid will enable counselors to help PLWHA on ARVs:

- a) Understand the food and nutrition implications of drug regimens.
- b) Identify appropriate and possible nutrition actions to:
 - Promote effective treatment,
 - Ensure adherence to drug regimens,
 - Manage side effects, and
 - Minimize

- MINIMIZE
negative
effects
- c) Implement the best nutrition actions and make necessary adjustments to dietary practices.
on
nutritional
status.

Job aid for counselors - RCQHC



home.cd3wd.ar.cn.de.es.fr.id.it.ph.po.ru.sw

Booklet Use

Who should use this job aid.

Counselors, ARVs service providers and household caregivers.
The job aid can also be used by pharmacists.

When should this job aid be used.

It can be used:

To prepare a client for ARV treatment,
To counsel clients who are taking ARVs,
During subsequent follow-up and home visits to ARV clients.
The job aid can also be used in training counselors and ARV service providers.

How should this job aid be used.

1. Review the entire job aid to get familiar with the contents.
2. Prior to the counselling session, carefully go through the section relevant to the client. Ensure references and other materials needed for the counselling session are available.
3. Use the job aid during the counselling session when the need arises.
4. Refer to the job aid to discuss drug-food interactions and appropriate responses.
5. For training purposes, provide copies of the job aid to trainees.



Job aid for counselors-RCQHC

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

General Notes to the Job Aid User

1. Be drug-specific in recommendations While some general principles apply to drug-food interactions, different drugs have different interactions with food and nutrition. Different interactions require different responses. All recommendations should be based on a clear understanding of the specific requirements of the drugs a client is taking.
2. Keep up-to-date about drugs being used and their interactions with food, if any. Do not rely on a single static source of information, especially as new drugs and findings emerge. Incorporate the new information in your counselling messages and sessions.

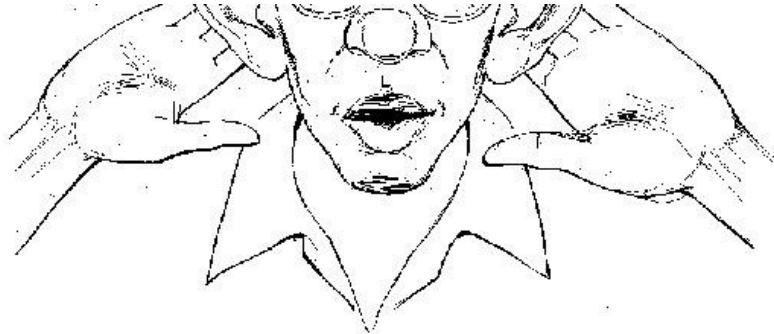
- 3. Learn from your clients experiences about what works in**
easing side effects and ensuring drug effectiveness. However,
keep in mind that different clients will have different reactions
and preferences.
4. When a client changes to a new ARV combination, provide
information about possible food interactions, side effects and
recommended responses. Support clients during the
adjustment period. Help them identify options to meet any
nutrition requirements.
5. In addition to supporting nutrition actions, refer clients to
medical care whenever necessary. For example, in cases of:
Severe or persistent side effects
Opportunistic infection.
Medical care is also needed when a client fails to respond to a
drug.
6. Be client-centered during counselling sessions. Listen and
take note of the clients concerns.

Job aid for counselors - RCQHC



[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)





A good counselor is a good listener



Job aid for counselors-RCQHC

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

SECTION 1

Preparation for ARV and Nutrition Counselling

Counselling Session

Materials: Before counselling begins, make sure the following materials are available in the counselling room/area:

1. Chart on the nutritional implications of ARVs and other drugs commonly used by PLWHA (see Reference Chart 1).
2. Information on dose requirements for ARVs and other drugs used by PLWHA.
3. Chart on common ARV side effects and recommended nutritional management (see Reference Charts 1 and 2).

Job aid for counselors - RCQHC



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Understand the possible interactions between the specific ARVs and other drugs the client is taking and food and nutrients.

Use information provided by the clients doctor, drug information included with the medications, and available reference materials (e.g. Reference Charts 1 and 3 included in this booklet).

1. For each drug being taken, identify interactions with food and nutrition that may occur.
2. Identify any foods or dietary practices (including meal timing) that should be recommended given the clients ARV combination. Identify foods or dietary practices that should be reduced or stopped.
3. Identify side effects and drug interactions that may require nutritional management.

4. Consider non-ARV drugs the client is taking.
5. Identify any special effects caused by multiple drugs the client is taking.
6. Consider herbal or food-based supplements the client may be taking which may interact with drugs (e.g., garlic supplements and saquinavir).



Job aid for counselors-RCQHC

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

SECTION 2

Counselling Clients about Food and Nutrition

NUTRITION

Implications of ARVs

Before or during initiation of ARVs

1. Explain the benefits of good nutrition for PLWHA who are on ARVs. Good nutrition:
 - a. Strengthens the bodys ability to fight diseases, reduces opportunistic infections, and may slow progression of HIV to AIDS.
 - b. Complements ARVs actions.
 - c. Helps improve the effectiveness of medication and side effect management.
2. Explain how HIV affects the nutrition of PLWHA.
 - a. HIV/AIDS increases the bodys nutrition requirements.

Job aid for counselors - RCQHC



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

- b. HIV/AIDS leads to opportunistic infections which are often associated with increased body nutrition requirements and food intake.
 - c. Symptoms of infections and side effects of drugs taken by PLWHA like ARVs may reduce food intake. Increased body nutrient requirements coupled with poor food intake will lead to a poor nutritional status.
3. Explain that there may be interactions between food and ARVs.
- a. ARVs may have side effects that can reduce food intake, absorption of nutrients and adherence to the drugs.
 - b. Some ARVs affect the availability, absorption and utilization of nutrients in the body.
 - c. Some foods when taken with ARVs may reduce drug effectiveness and worsen the side effects of ARVs.
 - d. Careful selection of food and well-planned meals can help minimize drug side effects and also improve adherence to, and effectiveness of, ARVs.

4. Ask the client if s/he knows the drugs s/he is taking. Explain that knowing the drugs helps:
 - a. To ensure the client complies with the recommended timing and dosage. Drugs need to be taken as prescribed.
 - b. To identify possible food and drug interactions associated with each drug.
 - c. In making a daily routine for taking drugs and meals to maximize effectiveness of the drugs, ensure good nutrition, and minimize side-effects.

5. Explain the dietary recommendations for each of the drugs the client is taking. All drugs require the client to:
 - a. Drink a lot of clean (boiled) water. Everyone should drink at least 8 glasses or 4 big cups each day.
 - b. Avoid taking alcohol.



Job aid for counselors-RCQHC

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Specific food recommendations for first-line ARVs are:

Zidovudine is best taken on an empty stomach. For example, early in the morning, 30-60 minutes before the morning meal (breakfast), and in the evening, 30-60 minutes before the evening meal. If the client experiences stomach irritation, the drug can be taken with food, e.g., breakfast and/or dinner. But it should NOT be taken with a high fat meal. If taken with food, the client should limit the amount of fat/oil in the meal.

Nevirapine does not have dietary restrictions. It can be taken with or without food. Clients taking it should avoid St. Johns Wort, a yellow-flowered plant (Latin name of *Hypericum perforatum*) sometimes used as a remedy for depression.

Lamivudine can be taken with or without food.

Efavirenz can be taken with or without food. But it should NOT be taken with a high fat meal. If taken with food, the client should limit the amount of fat/oil in the meal.

Stavudine can be taken with or without food.

Note: For drugs other than those above, refer to Reference Chart 1.

6. Emphasize the importance of using clean and safe water when taking medicines.
 - a. HIV makes an individual more vulnerable to infections.

Using clean and safe water is important to avoid water-borne infections.
 - b. Some ARVs call for drinking plenty of water to avoid side effects. For example, when taking indinavir, one should drink at least 1500 ml. of water (6 glasses of water or 3 big cups of water) to avoid complications that may affect important body organs like the kidney.

7. Explain to clients that taking some drugs may lead to side effects that may affect food intake or nutrition. See Table 1 below and Reference Chart 1.

Job aid for counselors - RCQHC



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Table 1 Side effects of commonly used ARVs

If the client is taking:	S/he may experience side effects:
Zidovudine (ZDV)	Loss of appetite, anaemia, nausea, vomiting, fatigue, constipation, fever, headaches, changed taste, weight gain.
Nevirapine (NVP)	Nausea, vomiting, fever, weight loss.
Efavirenz (EFZ)	High blood fat levels, loss of appetite, nausea, vomiting, diarrhoea, flatulence, dizziness.
Lamivudine (3TC)	Nausea, vomiting, diarrhoea, anaemia, tiredness, abdominal pain, loss of appetite.
Stavudine (d4T)	Nausea, vomiting, diarrhoea, fever, loss of appetite, lipodystrophy, abdominal pain.

8. Explain to the client the importance of telling a medical doctor about side effects. These may be a sign of an opportunistic infection or other problems requiring medical

treatment.

9. Inform the client that s/he may not experience any or all of the above side effects. Not everyone experiences these side effects. When one does experience side effects, they usually stop after about six weeks when the body gets used to the drugs.
10. Explain that most side effects of ARVs can reduce food intake and utilization by the body. This may weaken ones nutritional status.
11. Explain that some clients experience increased appetite, which can lead to weight gain. The weight gain may or may not be desired depending on the clients body weight.
12. Discuss simple dietary actions that can be taken to alleviate some common symptoms and side effects. See Table 2 below and Reference Chart 2.



Job aid for counselors-RCQHC

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Table 2 Nutritional management of common side effects

If the client experiences	Encourage him/her to:
Anorexia (Loss of appetite) <ul style="list-style-type: none"> o Drink small sips of fluids. 	Eat small and frequent meals (5 or more times a day). <ul style="list-style-type: none"> o Eat favourite foods. o Select foods that are rich in energy. o Avoid strong smelling foods if they negatively affect appetite.
Change or loss of taste <ul style="list-style-type: none"> o Use flavour enhancers such as salt, spices, or lemon. o Chew food well and move it around in mouth to stimulate receptors. o Clean mouth every morning. 	
Constipation	<ul style="list-style-type: none"> o Eat foods high in fiber content such as whole cereals, fresh

	<ul style="list-style-type: none"> vegetables o Drink plenty of liquids. o Avoid processed or refined foods. o Exercise regularly.
Diarrhoea	<ul style="list-style-type: none"> o Drink plenty of fluids. o Continue eating during and after illness. o Prepare and drink rehydration solution regularly. o Avoid fried foods.
Fever	<ul style="list-style-type: none"> o Drink plenty of fluids. o Eat foods rich in energy and other nutrients: Groundnuts and simsim paste, millet/maize, porridge with soya and milk.
Flatulence (gas)	<ul style="list-style-type: none"> o Avoid gas-forming foods, like beans, cabbage, broccoli, and cauliflower.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Nausea or vomiting	<ul style="list-style-type: none"> o Eat small quantities of food at frequent intervals. o Drink after meals and limit intake of fluids with meals. o Avoid having an empty stomach. o Avoid lying down immediately after eating. o Eat small quantities of dry, lightly salty foods to calm the stomach. o Rest between meals.
Dry mouth	<ul style="list-style-type: none"> o Rinse mouth with clean warm salty water. o Avoid very hot foods, sweets, and drinks with a lot of caffeine like coffee, strong tea, and sodas.
Pale hands and fingernails (sign of anaemia)	<ul style="list-style-type: none"> o Eat foods like animal meats, dark green leafy vegetables like spinach

	<p>spinach and dodo.</p> <ul style="list-style-type: none"> o Increase the intake of fruits like oranges and mangoes after meals. o Reduce the intake of tea and coffee immediately after meals. o Take iron supplements, tablets or other formulations with advice from your medical doctor. o Ensure you are treated for malaria and hookworms or other parasites.
Increased appetite (when weight gain is not desired)	<ul style="list-style-type: none"> o Eat a variety of foods and limit high fat, sugary, or sweetened foods.



Job aid for counselors-RCQHC

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

13. Explain that not all symptoms experienced are due to ARVs or other drugs.
- a. Presence of some symptoms may be due to HIV infection or opportunistic infections. For example, diarrhoea may be caused by a bacterial infection. In this case nutritional management is the same, but medical care should be sought for the underlying infection immediately.
 - b. Dietary management of these symptoms is not meant to cure them; it only helps to reduce negative effects on nutritional status.
 - c. Inform the client that it is important that they inform their health provider about all symptoms. This will help in identification of other infections that may be contributing to the persistence of symptoms.

Job aid for counselors - RCQHC



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

SECTION 3

Helping clients develop a drug-food

.. . . 1 1

timetable

Before or during initiation of ARVs

1. Review the clients existing dietary practices by considering the following:
 - a. Foods available to the client.
 - b. Types of foods in meals and how they are prepared.
 - c. Schedule of meals and snacks (schedule over a 24 hour period).
 - d. Food preferences and any foods avoided (and reasons, including allergies).
 - e. Persons responsible for deciding what the client eats and its preparation.
 - f. Any other issues or practices the client brings up.



Job aid for counselors-RCQHC

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

2. Discuss and identify with the client how existing dietary practices can either be maintained or improved to help ensure good nutrition, comply with instructions for taking the drugs, and minimize side effects. Discuss how to manage drug interactions with various foods in terms of selection, preparation and timing of meals.
3. Inform the client of any foods that should be avoided and increased, based on the specific drugs the client is taking. Focus on local foods available to the client.
4. There are also some foods that should be avoided or taken in small quantities by all clients on ARVs:

Foods to be avoided or Why. taken in small quantities when taking ARVs	
o	Reduces

Alcohol	effectiveness of drugs. Can cause dangerous side effects.
o Too much coffee/tea	Increases drug loss and interferes with and absorption of some nutrients.
o Undercooked meats and raw eggs	Can cause food borne illnesses.
o Expired tinned products	Can cause food borne illnesses.
o St Johns wort	Reduces the effectiveness of some drugs.
o If taking saquinavir, avoid garlic supplements or eating too much garlic	Reduces the effectiveness of saquinavir.

5. Discuss with the client what constraints s/he faces in accessing food or in following identified dietary practices for the ARVs s/he is taking. Consider constraints such as:

Job aid for counselors - RCQHC



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

- Income.
 - Seasonal variations.
 - Food allocation within the home, decision-making about food choices and preparation.
 - Reduced capacity to eat due to infection symptoms.
 - Reduced capacity to prepare food due to infection symptoms.
 - Knowledge about nutritional needs (adequate and right meals).
 - Psychosocial factors (e.g. depression or anxiety).
 - Food related traditional practices and taboos.
 - Stigma-related constraints.
 - Constraints due to conflict, war, domestic violence or other environmental factors.
 - Other constraints raised by the client.
6. Help the client to identify options to improve access to needed foods and identify dietary practices that are possible and meet

the nutritional needs caused by the ARVs he/she taking.

- a. Discuss with the client possible ways to address the constraints identified above.
- b. Seek alternative foods and behavior changes that are possible and practical at individual or household level to meet food intake requirements of ARV combination.
- c. Inform the client of services that can support improved diet and nutrition. When possible, provide referrals.

Depending on the clients situation, link him/her to support services like food aid programs, income generating programs, services to strengthen livelihoods, nutrition assessments, PLWHA support services, and counselling and peer support groups.



Job aid for counselors-RCQHC

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

7. Identify and discuss with the client the need to change eating patterns to promote effectiveness of ARVs.
 - a. Increased frequency (like having snacks in between meals)
 - b. Timing of the meals in relation to taking of the drugs
(including when to take beverages like tea and coffee)
 - c. Food preparation (like limiting the amount of fat/oils)

8. Help the client to make a drug-food timetable.
 - a. Develop a daily meal and drug plan together. It should specify what drugs and types of foods to take at what time of the day. (The meal planner tool can be used for this process.)
 - b. Discuss with the client how to maintain and follow the timetable.
 - c. If possible, encourage the client to identify within the family a source of support who can be involved in developing the drug-food timetable and in following the timetable at home.

9. Allow time to discuss any questions, concerns or issues the client may raise.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

SECTION 4

Helping clients follow dietary recommendations and the drug-food

timetable

During follow-up sessions (once the client is on ARVs)

1. Assess how the client is following recommendations for drug and food intake and nutritional practices.
 - a. Ask the client to explain the timing of food and drug intake.

Assess whether the client is following the drug-food timetable. Support as appropriate.
 - b. Review drug-food interactions and recommended actions that are needed.
 - c. Let the client discuss any problems experienced or other issues of concern.
 - d. Remember that reactions to drugs, needs and preferences will differ from client to client.



Job aid for counselors-RCQHC

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

2. Let the client explain any dietary responses that are proving impossible to follow.
 - a. Consider economic, seasonal or social changes that have occurred since ARVs were started that may require different foods to be used.
 - b. As needed, together with the client identify alternative food options for any recommendations s/he is unable to follow.

3. Ask about any symptoms or side effects experienced, actions taken, and their effect.
 - a. Ask the client what dietary actions s/he took to manage the side effect. As needed, review and recommend dietary actions, using Table 1 and Reference Charts 1 and 2.
 - b. Assess whether the symptoms in any way contributed to failure to follow instructions for taking drugs.
 - c. Ask whether the client sought medical care for any side effects. If not, and if the side effects are still present, recommend the client seek medical care.

4. Assess whether any symptoms or reactions may be due to opportunistic infections rather than a drug side effect (e.g. persistent diarrhoea).
 - a. If so, refer client for medical assessment and treatment.
 - b. Recommend that the client continues with nutritional management of the symptom, in addition to the medical treatment.
5. Emphasise the importance of correctly following instructions for taking drugs and accompanying dietary practices. Even if the client is feeling much healthier, continuing the treatment regimen is important.
6. Allow time to discuss any questions, concerns or issues the client may raise.



[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

SECTION 5

Helping clients
maintain

a weight healthy

Before or during initiation of ARVs or during follow-up sessions

1. Weigh the client
 - a. Compare current weight to previous weight.
 - b. For clients who are underweight, experiencing unintended weight loss, or who want to increase their weight, refer to nos. 2 - 8 below.
 - c. For clients who are overweight and clients who are experiencing unintended and undesired weight gain, refer to no. 9 below.



Job aid for counselors-RCQHC

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

2. If the client is experiencing unintended weight loss or is not increasing weight, ask the client to describe his/her daily food intake.
 - a. Assess whether energy intake is adequate. Try to get a sense of the adequacy of the clients intake. Consider whether the client is eating a sufficient quantity of energy giving foods. General indicators that a client is getting sufficient amounts of food are:
 - i. Eating at least 3 meals a day.
 - ii. Eating meals that contain a variety of foods. These include energy giving foods, body building foods, protective foods (fruits and vegetables) and lots of water and juices. (Refer to Answers to Frequently Asked Questions for examples of food types.)
 - iii. Eating snacks in between meals, especially those that are high in energy like porridge or bananas.
 - iv. Increasing intake of energy, either by increasing quantities of food taken during meals or by increasing the

- frequency of meals and snacks. Determine this by comparing current and previous intakes in terms of quantity and frequency.
- b. Asymptomatic PLWHA require 10% more energy than the recommended daily allowance for HIV-negative individuals of the same age, sex, and physical activity level. Symptomatic clients require 20-30% more energy than the recommended daily allowance for HIV-negative individuals of the same age, sex, and physical activity level.
3. If intake of energy giving foods is estimated to be inadequate, assess the reason(s):
- a. If due to drug-related side effects (such as nausea and loss of appetite) discuss with the client whether dietary management can help. Counsel (refer to Table 2 and Chart 2). If needed, modify the food-drug timetable to enable increased intake.

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

- b. If dietary management of side effects is not effective and side effects continue, refer the client to a medical doctor. The doctor may prescribe appetite stimulants for appetite loss; anti-emetics (to prevent vomiting) for nausea or vomiting; or anti-diarrhoea medications.
- c. If drug-related side effects are not the issue and food is available in the household, but dietary intake is inadequate, then counsel the client on increased energy intake.
 - i. Increase the amount of food consumed.
 - ii. Increase the frequency of meals and snacks.
 - iii. Increase intake of energy giving foods.
 - iv. This may require helping the client identify appealing, available and affordable foods.
 - v. If needed, modify the food-drug timetable to enable increased intake.
- d. If the client lacks access to sufficient food, help him/her identify options to increase access to food (see nos. 5 and 6 in Section 3). It may be necessary to link the client to

programs providing supplements, food assistance, or other goods and services if possible.

4. If dietary intake is adequate and the client has correctly followed instructions and complied with the drug schedule but weight is still low, assess the possibility of opportunistic infections or other illnesses that may be affecting nutrient absorption or utilization. If OIs or other illnesses are:
 - a. Present, then counsel on dietary management (as in Reference Chart 2) and refer to a medical doctor.
 - b. Not present, and the reason for weight loss is not known, refer the client to a medical doctor for assessment.

5. If dietary intake is estimated to be adequate and OIs and side effects that affect nutrient absorption are not present, it is possible the weight loss is the result of metabolic changes or other problems. In this case, refer the client to a medical doctor.



Job aid for counselors-RCQHC

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Remember to provide the client with information about maintaining adequate food intake.

6. Counsel clients to do moderate physical exercise (three to four times a week) when possible. This is useful for building muscles. If the client experiences difficulties exercising, refer him/her to a physiotherapist if available.
7. If improved diet as a result of counselling fails to increase weight, refer the client to a medical doctor for further assessments.
8. If the client is severely malnourished, urgently refer to a hospital or an appropriate nutritional rehabilitation institution. WHO guidelines should be followed to screen clients for severe malnutrition if personnel trained in the screening are available. In a hospital or nutritional rehabilitation institution, the national guidelines, Management of Severe Malnutrition in Uganda, should be followed to manage the malnutrition.

9. For overweight clients and those experiencing unintended and undesired weight gain:
 - a. Ask the client about his/her daily food intake. If intake of fat and/or energy is higher than recommended, help the client to identify ways to reduce consumption of high-fat and high-energy foods, especially those not rich in other nutrients.
 - b. Encourage the client to eat a variety of foods.
 - c. Encourage the client to continue with physical activity such as house work or other work, and to exercise regularly through recreational activities or walking.
 - d. If weight increase may be due to metabolic changes fully or partly, (e.g. if weight has increased rapidly despite little change in dietary intake), refer the client to a medical doctor for assessment and treatment.

10. Allow time to discuss any questions, concerns or issues the client may raise.

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

SECTION 6

Helping clients maintain healthy body composition

During follow-up sessions (once the client is on ARVs)

1. As needed, refer the client to medical services to test for unhealthy impacts of ARVs on nutrient levels and body composition.
 - a. If taking zidovudine or lamivudine, refer for an anemia test.
 - b. Clients taking efavirenz or other protease inhibitors may require testing for blood fat levels (cholesterol and triglycerides).
 - c. Clients on stavudine or zidovudine may require tests for bone health.
 - d. For clients on other ARVs, use Reference Chart 1 and the



Job aid for counselors-RCQHC

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

doctors advice to identify possible negative impacts that require testing.

2. If the client is experiencing nutrient metabolism issues like high blood fat levels and anaemia, discuss nutritional responses in addition to any medical responses needed.
3. If the client has anaemia, assess whether the anaemia is associated with inadequate intake of foods rich in iron (or high intake of iron binding foods).
 - a. If an iron-deficient diet is a likely cause of anaemia:
 - i. Recommend the client take iron supplements (not more than 60 mg elemental iron per day for adults) and folic acid (400 g per day).
 - ii. Advise the client to eat foods rich in iron like meat (including fish and chicken), dark leafy vegetables (including spinach, dodo, nakati), and fruits rich in vitamin C like mangoes, oranges.

- b. If the diet is adequate in iron, refer the client to a medical doctor for assessment. Certain ARVs can cause anaemia through mechanisms other than poor nutrient utilization or nutrient deficiencies.
4. If the client has high blood fat levels:
- a. Assess dietary fat intake:
 - i. Assess whether the client is having adequate energy intake.
 - ii. If the client has adequate energy intake and can access adequate energy intake from non-fat sources, counsel the client to limit consumption of foods rich in saturated fats, like butter, ghee, egg yolks.
 - iii. If dietary counseling does not reduce the blood fat levels, refer for medical care. The client may require drug therapy or possibly a change in ARV regimen.
 - b. Counsel the client on exercises that she/he can undertake, based on his/her health status and environment.



[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

5. If the client is experiencing changes in body shape, e.g. loss of fat in any body part other than the stomach, increased breast size, buffalo humps (distribution of fat between the shoulders):
 - a. Counsel the client that there may not be an effective cure for the condition.
 - b. Refer the client to a medical doctor.
 - c. Encourage the client to do exercises.

6. Allow time to discuss any questions, concerns or issues the client may raise.



Job aid for counselors-RCQHC

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

SECTION 7

Counselling clients during home visits

Before or during initiation of ARVs or during follow-up sessions

1. Follow actions according to the type of session planned for the visit (from Section 1-6 above).

2. Explain to household members the importance of good nutrition and the clients specific food and nutrition needs. Discuss with them the types of foods that will help the client maintain his/her health and promote effective treatment.

3. Assess conditions in the household that affect diet and drug adherence:
 - a . Hygiene conditions.
 - b . Food production.
 - c . Income sources and levels.

Job aid for counselors - RCQHC



[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

- d. Knowledge of household members.
 - e. Food preparation and storage.
 - f. Who makes decisions about food and who prepares food.
 - g. Stigma issues.
 - h. Psycho-social issues.
 - i. Food allocation within the home.
4. If there are conditions that prevent clients from following drug and food recommendations, discuss with the client and household members to identify options to address these conditions. For example:
- a. If hygiene conditions are poor, suggest ways to improve cleanliness of food preparation, safety of water, and the personal hygiene of client and of those preparing food.
 - b. In case of limited access to needed foods, discuss kitchen gardens or other sources of additional food production.
 - c. If poor income is preventing the household from accessing sufficient food, refer if possible to available income generating

- and food assistance services.
- d. If stigma within the household is affecting the clients food allocation or appetite, provide counselling to reduce stigma. Emphasize the role household members can play in supporting the client. Suggest that eating with other household members may help increase the clients appetite.
5. Through discussion with client and household members, identify possible options to improve the content of the clients diet for management of drug-food interactions if needed.
- a. Share information with household members about the clients food and drug intake requirements.
 - b. Discuss options such as:
 - i. Adjusting meal timings to coordinate with the clients drug timings and to allow more frequent meals by the client.
 - ii. Changing food preparation as needed to create more



Job aid for counselors-RCQHC

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

desired or digestible meals for the client.

iii. Adjusting the types of foods purchased with the money allocated for food in order to meet nutritional requirements of the client.

6. Seek input from household members about ways to ensure that the client correctly follows drug and dietary recommendations.
 - a. Other household members can play important roles in supporting the client.
 - b. For example, a household member (including an older child) can take responsibility for seeing that the client correctly follows instructions for taking drugs and recommended food intake.
7. Allow time to discuss any questions, concerns or issues the client or other household members may raise.

Reference Materials:

Reference Chart 1: Recommended Food Intake and Side
Effects for ARVs and other
Medications

Reference Chart 2: Nutritional Management of Common
ARV Side Effects

Reference 3: Interactions between Medications and
Food/Nutrition

Reference 4: Glossary

Job aid for counselors - RCQHC



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Reference Chart 1: Recommended Food Intake and Side Effects for ARVs and other Medications

Medication Purpose		Recommended to be taken	Possible side effects
Abacavir (ABC)	Antiretroviral	Can be taken without regard to food.	Nausea, vomiting, fever, allergic reaction, anorexia, abdominal pain, diarrhoea, anaemia, rash, hypertension, pancreatitis, dyspnea, weakness, insomnia, cough, and headache.
Didanosine(ddl)	Antiretroviral	With water only, 1 hour before or 2 hours after eating. Avoid alcohol. Do not take with juice. Do not take with antacid containing	Anorexia, diarrhoea, vomiting, pain, headache, weakness, insomnia, rash, dry mouth, taste loss, constipation, anaemia, fever, dizziness, and pancreatitis.

		aluminum or magnesium.	
Efavirenz	Antiretroviral	Can be taken with food, but do not take with a high fat meal. Avoid alcohol.	Elevated blood cholesterol levels, elevated triglycerides levels, nausea, dizziness, anorexia, rash, vomiting, diarrhoea, dyspepsia, abdominal pain, flatulence.
Indinavir (IDV)	Antiretroviral 1 hour	before or 2 hours after meal. Drink at least 1,500 ml of fluid daily. Do not drink grapefruit juice, it may lower the level of medicine in the blood.	Nausea, abdominal pain, headache, kidney stones, taste changes, vomiting, regurgitation, diarrhoea, insomnia, ascites, weakness and dizziness. May increase the risk of lipodystrophy.
		Avoid St. Johns wort.	



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Medication	Purpose	Recommended to be taken	Possible side effects
Lamivudine (3TC)	Antiretroviral	Can be taken without regard to food. Avoid alcohol.	Headache, dizziness, diarrhoea, abdominal pain, nasal symptoms, fatigue, pancreatitis, anaemia, insomnia, muscle pain, cough and rash.
Lopinavir	Antiretroviral	Can be taken without regard to food. Avoid St Johns wort.	Abdominal pain, diarrhoea, weakness, nausea. May increase the risk of lipodystrophy and or diabetes.
Nelfinavir	Antiretroviral	With meal or light snack. Avoid St Johns wort.	Diarrhoea, flatulence, abdominal pain, and rash. May increase the risk of lipodystrophy.
Nevirapine(NVP)	Antiretroviral	Can be taken	Nausea, vomiting, rash,

		without food. Avoid St Johns wort. fever, headache, skin	reactions, fatigue, stomatitis, abdominal pain, drowsiness, paresthesia. High hepatotoxicity.
Ritonavir	Antiretroviral W	With meal if possible. Nausea, vomiting, Avoid St Johns diarrhoea, wort.	hepatitis, jaundice, weakness, anorexia, abdominal pain, fever, diabetes, headache, dizziness. May increase the risk of lipodystrophy.
Saquinavir	Antiretroviral W	With meal or light Mouth ulceration, taste snack within 2 hours changes, nausea, of a high-fat meal vomiting, abdominal pain, and high-calcium diarrhoea, constipation, meal. Avoid garlic flatulence, weakness, rash supplements and and headache. May St Johns wort.	increase the risk of lipodystrophy.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Medication Purpose	Recommended	Possible side effects
Stavudine(d4T) Antiretroviral	Can be taken without regard to diarrhoea, peripheral neuropathy, chills and consumption of fever, and alcohol.	Nausea, vomiting, anaemia, headaches, rash, bone marrow suppression, pancreatitis. May increase the risk lipodystrophy.
Tenofovir (TDF) Antiretroviral	Take with food.	Abdominal pain, headache, fatigue and dizziness.
Zidovudine (ZDV)	Antiretroviral Better to take without food, but if vomiting, bone marrow it causes nausea or suppression, headache, stomach irritation, fatigue, constipation, take with a low fat meal. Do not take with a high fat meal. Avoid alcohol.	Anorexia, anaemia, nausea, dizziness, dyspnea, muscle pain and rash.

Isoniazid	Treatment of 1 hour before or 2 hours after meals.	Anorexia and diarrhoea. May cause possible reactions with foods such as bananas, beer, avocados, liver, smoked pickled fish, yeast and yogurt. May interfere with vitamin B6 metabolism and require vitamin B6 supplementation. Avoid alcohol.	
Rifampin	Treatment of On an empty stomach 1 hour and loss of appetite.	before or 2 hours diarrhoea after meals. Avoid alcohol.	Nausea, vomiting,



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Medication	Purpose	Recommended to be taken	Possible side effects
Fluconazole	Treatment of candida (thrush)	With food.	Nausea, vomiting, diarrhoea. Can be used during breastfeeding.
Nystatin	Treatment of thrush	With food.	Infrequent occurrence of diarrhoea, vomiting, nausea.
Sulfonamides: Sulfamethoxazole, Cotrimoxazole and (Bactrim), (Septra)	Antibiotic for treatment of pneumonia and toxoplasmosis	With food	Nausea, vomiting and abdominal pain.
Chloroquine	Treatment of malaria	With food	Stomach pain, loss of appetite, nausea, vomiting. Not recommended for breastfeeding women.

Quinine	Treatment of malaria With food		Abdominal pain, diarrhoea, nausea, vomiting, lower blood sugar.
Sulfadoxine and Pyrimethamine (Fansidar)	Treatment of malaria	With food and continuous drinking of clean boiled water	Nausea, vomiting, taste loss, and diarrhoea. Not recommended if folate deficient. Not recommended for women breastfeeding.

Source: Adapted from FANTA 2001, Pronsky et al. 2001, Nerad 2003, Castleman et al. 2003, and WHO 2003.

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Reference Chart 2: Nutritional Management of Common ARV Side Effects

Side Effect	Recommended Nutritional Management	Avoid
Anorexia or Eat	<ul style="list-style-type: none"> o small and frequent meals. o Eat favourite foods. o Select foods that are rich in energy. o Take multivitamins. 	<ul style="list-style-type: none"> o Avoid strong smelling foods.
Nausea or Eat vomiting	<ul style="list-style-type: none"> o small quantities of food at frequent intervals. o Drink after meals and limit intake of fluids with meals. o Limit salt intake and eat dry foods to calm the stomach. o Sip oral rehydration solution (ORS) if vomiting. o Rest between meals. 	<ul style="list-style-type: none"> o Avoid having an empty stomach for too long. o Avoid lying down after eating.
Change or loss of taste or	<ul style="list-style-type: none"> o Use flavour enhancers such as salt, spices lemon. o Chew food well and move around in mouth to stimulate receptors. 	
Constipation or Eat		

Constipation of foods high in fiber content.	<ul style="list-style-type: none"> o Drink plenty of fluids. o Exercise regularly according to capacity. 	<ul style="list-style-type: none"> o Avoid refined foods, processed
Diarrhoea	<ul style="list-style-type: none"> o Drink plenty of fluids (clean boiled water). o Avoid fried foods. o Continue eating during and after illness. o Prepare and drink ORS regularly. o Eat banana or potatoes to replace potassium and sodium. o Take soluble fibre foods (like oranges, mangoes, oats, and legumes). o If diarrhoea is severe check for lactose intolerance. Decrease intake of dairy products and see if diarrhoea improves. Lactose intolerance is often temporary. o Seek medical care if there is blood in the diarrhoea. 	<ul style="list-style-type: none"> o Avoid alcohol. o Reduce the amount of dietary fat if taking nelfinavir.
Fever	<ul style="list-style-type: none"> o Drink plenty of fluids. o Eat energy and nutrient dense foods. o Eat small, frequent meals. 	



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Side Effect	Recommended Nutritional Management	Avoid
Flatulence		o Gas-forming foods, such as beans, cabbage, broccoli, and cauliflower.
Dry mouth	o Rinse mouth with clean water (warm with a pinch of salt). o Maintain good oral hygiene. o See a health worker if you have problems swallowing or have spots in the mouth.	o Very hot foods, sweets, drinks with alot of caffeine, like coffee and tea, and some sodas.
Anaemia (pale/white palm or finger nails)	o Eat foods rich in iron like animal meat (especially liver), fish, chicken, and kalo, spinach, dodo (amaranths leaves), and lima beans. o Increase the intake of fruits like oranges, mangoes after meals. o Take iron supplements.	o Taking tea and coffee immediately after meals.

<p>High Cholesterol o Eat a low fat diet.</p>	<p>o Eat fruits like oranges, mangoes, pawpaw, and vegetables like nakati, dodo, sukuma wiki, spinach, daily. o Exercise regularly according to capacity.</p>	<p>o Limit intake of foods rich in cholesterol (like egg yolks, red meat) and saturated fat (ghee, fatty meat/ muchomo, potato chips, cheese, chocolate) and saturated fats and processed hard fats.</p>
<p>High Triglycerides</p>	<p>o Eat fruits, vegetables, and whole grains daily. o Avoid alcohol and smoking. o Exercise regularly according to capacity.</p>	<p>o Limit sweets and excessive carbohydrate and saturated fat intake.</p>

Sources: 1) Castleman, T, E. Seumo-Fosso, and B. Cogill. Food and Nutrition Implications of Antiretroviral Therapy in Resource Limited Settings. Washington D.C.: FANTA Project, Academy for Educational Development, 2003.

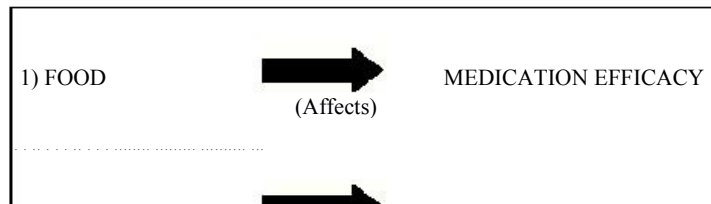


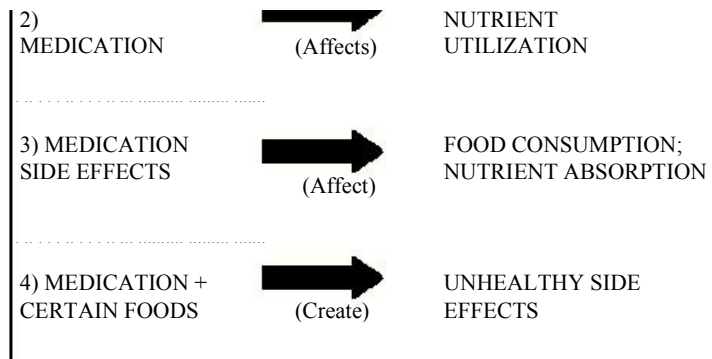
home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

- 2) HIV/AIDS: A Guide for Nutrition, Care and Support. FANTA, Academy for Educational Development, 2001.
- 3) Improving the Quality of Life Through Nutrition: A Guide for Feeding People Living with HIV/AIDS. Uganda MoH/AIDS Control Program. Uganda, 2004.
- 4) Pronsky, Z., S.A . Meyer, and C. Fields-Gardner. HIV Medications Food Interactions. 2001.
- 5) American Dietetic Association. Manual of Clinical Dietetics. Chicago, 2000.

Reference 3:

Interactions between Medications and Food/Nutrition





Source: Castleman, T, E. Seumo-Fosso, and B. Cogill. Food and Nutrition Implications of Antiretroviral Therapy in Resource Limited Settings. Washington D.C.: FANTA Project, Academy for Educational Development, 2003.



Job aid for counselors-RCQHC

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)

Reference 4: Glossary

Absorption of food - Body process of taking in food through intestines

Antiretroviral drugs - Drugs that reduce the multiplication of HIV in the body.

Anorexia An illness that results in loss of desire to eat hence weight loss

Asymptomatic Without signs

Bacterial infection Infection from germs

Dietary - Anything that relates to diet or food consumed

First line antiretroviral drugs - First recommended combination of ARV
drugs for PLWHA.

Medication efficacy - The ability of a drug to carry out its function, i.e. to

control or cure an illness.

Metabolism - Chemical processes that change food into living matter to produce energy

Non-adherence - Terminating consumption of the medication before completing the full course; or failure to follow medication schedules, doses, or other directions.

Nutrition - The process involved in taking in food and utilising it in the body.

Opportunistic infection - Infections that affect people living with HIV due to a weakened body immunity

Side effects After effects of taking a drug

Symptomatic With signs

Psychosocial - Related to mental well-being

[home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)





Produced by Regional Centre for Quality of Health Care,
Makerere University Medical School, P O **B.O Box** 29140, Kampala -Uganda,
tel. 256-41-530888, F **Box** 256 530876, W **Website** www.rcqhc.org
Technical support: FANTA and LINKAGES projects,
Financial support: USAID/REDSO/ESA.



home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Plan your meal

Plan your meal to include at least one of the foods from the following groups:

Energy giving foods
- Cereals, bananas, roots and tubers.
- Fats, oils and sugars in small quantities.

Body building foods (Legumes and foods of animal origin)

Protective foods (Vegetables and fruits)



Remember

to:

Eat more food to increase energy intake

Eat at least three main meals plus snacks between meals.

Have main meals that include foods from each group.

Prepare, handle, serve and store all foods in a hygienic way.

Drink at least four big cups (1.5 litres) of water throughout the day.

Food groups	Examples of food choices	Special preparation considerations
Energy giving foods: Matooke, cassava, irish potatoes, maize, Avoid deep frying. Cereals, bananas, roots and tubers	sweet potatoes, yams, chapati, posho, rice, bread, millets.	
Fats, oils and sugars- in small quantities	Ghee, cooking oil, cooking fat, butter, (siagi), margarine, sugar, and honey.	
Body building foods: Beef, goat, milk, pork, chicken, fish, liver, Legumes and foods of animal origin	nswa, kidney beans, peas, yoghurt, simsim, wele, cooked kidney, groundnuts, soya beans, mukene. Do not eat raw eggs. Odil, nsenene.	Cook all animal products until
Protective foods: Vegetables	Nakati, dodo, jobyo, carrots, ntula, tomatoes. Avoid curing bbuga, ngobe, cabbage sukuma wiki, pumpkin, pumpkin leaves, spinach, tomato. Cook immediately after cutting.	Avoid cutting into very small pieces. Cook for a short time. Avoid adding a lot of water. Eat immediately after cooking.
Protective foods: fruits Banana, pawpaw, matunguda, Water melon, mango, guava, passion fruit, pineapple, papawintutumu, orange, jambula, tangerine (mangada), apple, pineapple, jackfruit, tomato, avocado.	Wash properly before eating.	Do not eat rotten fruits.
Water and beverages	Fruit Juice and water.	Boil drinking water and water for making fruit juice. Keep drinking water in a clean covered container.

Snacks may include: Bread (slice or bun), cassava, popcorn, biscuits, kabalagala, an egg, groundnuts, muchomo, fruit.



Developed by Regional Centre for Quality Health Care, Makerere University School of Public Health, Kampala-Uganda
 2016-2018. All rights reserved. www.rcqhc.org
 Health Insurance: PAN T.A. and N.KAG projects.
 The United Nations Children's Fund (UNICEF)

