# Food and nutrition

Resource kit for high-impact programming

This Guidance Note is part of the resource kit for high-impact programming that provides simple, concise and practical guidance on key areas of the AIDS response. The resource kit is developed by the Joint United Nations Programme on HIV/AIDS. The resource kit can be accessed at http://www.unaids.org/en/ourwork/programmebranch/countryimpactsustainabilitydepartment/globalfinancingpartnercoordinationdivision/.

For more information, please contact highimpact@unaids.org.

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The development of this Guidance Note was led by World Food Programme (WFP) and includes recommendations on nutrition approved by World Health Organization's (WHO) Guidelines Review Committee as well as input from WHO staff. This Guidance Note provides simple, concise and practical guidance on how to integrate food and nutrition into national HIV strategies and programmes. References and links to full guidelines are provided in the last section of the Guidance Note.

# WHAT IS NEW?

- A new joint UNAIDS/PEPFAR/WFP programming guidance for nutrition assessment, counseling, and support (NACS) for adolescents and adults living with HIV https://www.wfp.org/stories/new-programming-guide-highlights-food-and-nutrition-fight-against-hivaids.

- An AIDS and Behavior supplement collecting new, convincing evidence on the role of food security and nutrition in adherence to HIV and TB care and treatment. http://link.springer.com/journal/10461/18/5/suppl/page/1

- Food insecurity has been found to be a critical barrier to adherence to ART and retention in care among HIV-infected adults, HIV-infected pregnant women and their exposed infants, and child and adolescent PLHIV in both qualitative and quantitative studies. Mechanisms explaining the linkages between food insecurity and ART non-adherence include: the exacerbation of hunger, ART side effects in the absence of adequate food and competing resource demands. http://link.springer.com/article/10.1007/s10461-013-0547-4

- Compelling evidence of the role of food and nutrition assistance in helping overcome barriers to accessing care and improving treatment outcomes, adherence and uptake of HIV and TB care. http://link.springer.com/article/10.1007/s10461-013-0547-4 http://link.springer.com/article/10.1007/s10461-014-0870-4

- A review of the barriers to access PMTCT found that socioeconomic factors (i.e. non-disclosure, stigma and partner relations) are some of the most common cited demand side barriers, transportation being the most frequent. http://link.springer.com/article/10.1007/s10461-014-0756-5

- A comprehensive review clearly defining the role of food assistance in mitigating the social and financial consequences of TB at individual and household levels. http://link.springer.com/article/10.1007/s10461-014-0732-0

- A review analysing the effects of integrating food and nutrition assistance in HIV and TB care and treatment programmes on improving adherence and/or treatment completion (eight of ten studies found positive impacts). http://link.springer.com/article/10.1007/s10461-014-0730-2

- A study from Honduras showing that providing food assistance to households, i.e. a food basket and nutrition education, improved adherence to HIV treatment by 20 % (p=0.01) within 6 months among 400 clients with previous sub-optimal adherence. http://link.springer.com/article/10.1007/s10461-014-0786-z

- Growing, evidence-based understanding that post-2015 interventions in the areas of food security, nutrition and social protection for increasing access and adherence should be from an HIV-sensitive lens, linking the continuum of care with health systems, food systems and the community, complementing existing platforms through partnerships and integrated services. http://link.springer.com/article/10.1007/s10461-014-0870-4

## *Introduction*

There is convincing evidence on the relationship between the HIV and tuberculosis (TB) epidemics and malnutrition and food insecurity.[1,2,3,4] As a result, the integration of food and nutritional support as a cost-effective investment in HIV and TB programming is recommended by several organizations and international initiatives, including the World Health Organization (WHO),[5,6,7,8,9] the Joint United Nations Programme on HIV/AIDS (UNAIDS),[10] the World Food Programme,[11,12] the United States President's Emergency Plan for AIDS Relief (PEPFAR)[13] and the Food and Nutrition Technical Assistance Project III (FANTA-3).[14,15]

National HIV strategies should integrate food and nutrition interventions as part of a package of care, treatment and support services for people living with HIV and for TB patients. Programming should be based on the identified gaps and epidemiological data and interventions should be designed by a coalition of stakeholders recognizing the importance of food and nutrition in the HIV and TB responses. Nutritional assessment, counselling and support should be included in the treatment, care and support package. In resource-limited settings, food and nutritional support are key enablers for accessing health services.[2,3,4]

1 Bloem MW, de Pee S., eds. Nutrition and food insecurity in relation to HIV and AIDS and tuberculosis. Food Nutr Bull. 2010;31(Suppl 4):S289–S364 (http://www.ingentaconnect.com/content/nsinf/fnb/2010/00000031/a00404s4, accessed 14 July 2014).

2 de Pee S, Grede N, Mehra D, Bloem MW. The enabling effect of food assistance in improving adherence and/or treatment completion for antiretroviral therapy and tuberculosis treatment: a literature review. AIDS Behav. 2014. doi:10.1007/s10461-014-0730-2.

3 Grede N, Claros JM, de Pees S, Bloem M. Is there a need to mitigate the social and financial consequences of tuberculosis at the individual and household level? AIDS Behav. 2014. doi:10.1007/s10461-014-0732-0.

4 HIarlaithe MO, Grede N, de Pee S, Bloem M. Economic and social factors are some of the most common barriers preventing women from accessing maternal and newborn child health (MNCH) and prevention of mother-to-child transmission (PMTCT) services: a literature review. AIDS Behav. 2014. doi:10.1007/s10461-014-0756-5.

5 Nutrition and HIV/AIDS. In: WHO/Nutrition/Nutrition health topics [website]. Geneva: World Health Organization; 2014. (http://www.who.int/nutrition/topics/hivaids/en/, accessed 14 July 2014).

6 Scoping meeting for the development of guidelines on nutritional/food support to prevent TB and improve health status among TB patients: meeting report. Geneva, 2–4 November 2009. Geneva: World Health Organization; 2010 (http://www.who.int/nutrition/publications/nutandtb_meeting_report.pdf, accessed 14 July 2014).

7 Nutrition and HIV/AIDS list of publications. In: WHO/Nutrition/Nutrition publications/Nutrition and HIV/AIDS list of publications [website]. Geneva: World Health Organization; 2014 (http://www.who.int/nutrition/publications/hivaids/en/, accessed 14 July 2014).

8 Guideline: nutritional care and support for patients with tuberculosis. Geneva: World Health Organization; 2013 (http://apps.who.int/iris/bitstream/10665/94836/1/9789241506410_eng.pdf?ua=1, accessed 14 July 2014).

9 Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection: recommendations for a public health approach. Geneva: World Health Organization; 2013, pp. 172–74 (http://apps.who.int/iris/bitstream/10665/85321/1/9789241505727_eng.pdf. Accessed 14 July 2014).

10 UNAIDS policy brief: HIV, food security and nutrition. Geneva: Joint United Nations Programme on HIV/AIDS; 2008 (http://data.unaids.org/pub/Manual/2008/JC1515_policy_brief_nutrition_en.pdf, accessed 14 July 2014).

11 WFP HIV and AIDS policy. Executive Board Second Regular Session, Rome, 8–11 November 2010. Rome: World Food Programme; 2010 (http://one.wfp.org/eb/docs/2010/wfp225092~1.pdf, accessed 14 July 2014).

12 HIV/AIDS, TB and malnutrition: 'triple trouble'. Rome: World Food Programme; 2008 (http://one.wfp.org/food_aid/doc/HIV_TB.pdf, accessed 14 July 2014).

13 Integration and coordination: nutrition and food security. In: PEPFAR/Home/Press room/Strategy briefs [website]. Washington, DC: US President's Emergency Plan for AIDS Relief; (http://www.pepfar.gov/press/strategy_briefs/138410.htm, accessed 14 July 2014).

14 Food and Nutrition Technical Assistance Project, World Food Programme. Food assistance programming in the context of HIV. Washington, DC: Food and Nutrition Technical Assistance Project; 2007 (http://one.wfp.org/food_aid/doc/Food_Assistance_Context_of_HIV_sept_2007.pdf, accessed 14 July 2014).

15 Nutrition assessment, counselling and support. A user's guide. Module 3: nutrition counselling. Washington, DC: Food and Nutrition Technical Assistance Project; 2013, pp.1–6 (http://www.fantaproject.org/sites/default/files/resources/NACS-Users-Guide-Module3-Dec2013.pdf, accessed 14 July 2014).

The world's food security situation has improved in the last two and a half decades as evidenced by a decline of over 200 million in the total number of people not being able to meet their needs since 1990[16]. The estimated number of people suffering from chronic hunger in 2012–2014 was 805 million, which as a percentage change, is 21% (209 million) lower than the ~1 billion reported in 1990-92[17]. However, progress has been uneven. In 2013, Sub-Saharan Africa had the highest prevalence of undernourishment with modest progress in recent years. Southern Asia and northern Africa showed slow progress. While significant reductions (in the estimated number and prevalence of undernourishment) occurred in most countries of eastern and south-eastern Asia and in Latin America, Western Asia showed no progress[18]. In 2014, South-Eastern Asia and Latin America met the World Food Summit hunger target of halving the number of undernourished people by next year. Latin America and the Caribbean, as a whole, met the MDG1 hunger target.

HIV has dramatic consequences for entire communities, especially where malnutrition and food insecurity are already prevalent. Of the 2 billion people suffering from micronutrient deficiencies, many are in countries with high HIV and TB prevalence, and high levels of undernutrition. In resource-limited settings, where food insecurity affects many households, people are more vulnerable to high-risk sexual behaviour that may increase their risk of HIV transmission. HIV infection then increases vulnerability to undernutrition by exacerbating poverty and food insecurity, as a result of additional expenditures on accessing medical care.

Nutrition is important at all stages of HIV and TB infection. The vicious cycle of undernutrition and HIV, also applies to TB and other infections. In the short term, an individual's appetite is reduced; the ability to consume food and the capability of absorbing ingested nutrients are also reduced. A higher incidence of diarrhoea also leads to nutrient losses, while metabolic changes[19] actually increase energy demand and nutritional needs.[20] While the requirements for people living with HIV and TB are currently under review by WHO, it is understood that the increased morbidity associated with HIV leads to a decreased productivity often reducing one's access to food.[21] This cycle is further worsened by the impact of HIV and TB on household food security and the depletion of household resources. In addition, TB is one of the most common coinfections experienced by people living with HIV. At least one third of the 34 million people living with HIV worldwide is infected with TB,[22] leading to even further increased metabolic stress for those who are coinfected.

16 This refers to the number of people that are estimated to not be able to meet their energy (kcal) needs or are suffering from chronic hunger. It does not refer to those suffering from micronutrient deficiencies nor to those stunted, underweight or wasted, all of which are indicators assessed at the individual level resulting from the inadequate intake of food and/or disease, direct causes of malnutrition.

17 The state of food insecurity in the world. Rome: Food and Agriculture Organization of the United Nations; 2014 (p.4) (http://www.fao.org/3/a-i4030e.pdf, accessed 28 January 2015.

18 The state of food insecurity in the world. Rome: Food and Agriculture Organization of the United Nations; 2013 (http://www.fao.org/docrep/018/i3434e/i3434e00.htm, accessed 14 July 2014).

19 HIV infection increases an individual's energy needs by 10% in asymptomatic adults, 20–30% in symptomatic adults and 50–100% in children with weight loss.

20 Nutrient requirements for people living with HIV/AIDS: report of a technical consultation. Geneva: World Health Organization; 2004 (http://www.who.int/nutrition/publications/Content_nutrient_requirements.pdf, accessed 14 July 2014).

21 Frega R, Duffy F, Rawat R, Grede N. Food insecurity in the context of HIV/AIDS: a framework for a new era of programming. Food Nutr Bull. 2010;31(4):S292–S312.

22 HIV-associated TB facts 2013. Geneva: World Health Organization; 2013 (http://www.who.int/tb/challenges/hiv/tbhiv_factsheet_2013.pdf, accessed 14 July 2014).

In the long term, HIV and antiretroviral therapy frequently lead to metabolic complications including dyslipidaemia and noncommunicable diseases such as an increased risk of cardiovascular disease, obesity, cancer and diabetes. Healthy nutrition is critical for preventing and/or delaying the onset of these conditions and limits their severity and impact on the quality of life for an individual.

Most cases of HIV and/or TB occur in low- and middle-income countries, where patients face limited dietary quality and quantity leading to the inadequate intake of essential nutrients and energy required for a strong immune system. In addition to antiretroviral therapy and treatment for TB, people living with HIV and TB patients who are malnourished especially in food insecure contexts may require food supplements. This would serve to complement their dietary intake enabling them to meet their total micronutrient and macronutrient needs to support nutritional recovery.[8,9]

Evidence shows that people living with HIV who are malnourished when they start antiretroviral therapy are two to six times more likely to die in the first six months of treatment compared to those who have a normal body mass index (BMI).[23,24,25,26,27] For TB patients, studies have shown that a BMI of less than 17 is associated with an increased risk of early death.[28] Food insecurity is also associated with reduced levels of treatment adherence, [29,30,31,32,33] and has negative implications on individual health and programme outcomes. This can also carry negative consequences related to costs when first-line treatment fails necessitating a switch to more costly second-line treatments. A recent publication reviewed the enabling effects of using food and nutrition support to improve adherence and/or treatment completion for ART and TB-DOTS treatment; in 8 out of 10 studies examined, food provision—either in-kind or through cash or voucher—was linked to improved treatment outcomes. The review furthermore detailed both behavioural and biological

23 Zachariah R, Fitzgerald M, Massaquoi M, Pasulani O, Arnould L, Makombe S, Harries AD. Risk factors for high early mortality in patients on antiretroviral treatment in a rural district of Malawi. AIDS. 2006;20(18):2355–2360.
24 Paton NI, SAngeetha S, Earnest A, Bellamy R. The impact of malnutrition on survival and CD4 count response in HIV-infected patients starting antiretroviral therapy. HIV Med. 2006;7(5):323–330.
25 van der Sande M, et al. Body mass index at time of HIV diagnosis: a strong and independent predictor of survival. J Acquir Immune Defic Syndr. 2004;37(2):1288–1294.
26 Weiser SD, et al. The association between food insecurity and mortality among HIV-infected individuals on HAART. J Acquir Immune Defic Syndr. 2009;52(3):342–349.
27 Weiser SD, Frongillo EA, Ragland K, Hogg RS, Riley ED, Bangsberg DR. Food insecurity is associated with incomplete HIV RNA suppression among homeless and marginally housed HIV-infected individuals in San Francisco. J Gen Intern Med. 2009;24(1):14–20. doi:10.1007/s11606-008-0824-5.
28 Zachariah R, Spielmann MP, Harries AD, Salaniponi FM. Moderate to severe malnutrition in patients with tuberculosis is a risk factor associated with early death. Trans R Soc Trop Med Hyg. 2002;96(3):291–294.
29 Young S. Wheeler AC, McCoy SI, Weiser SD. A review of the role of food insecurity in adherence to care and treatment among adult and paediatric populations living with HIV and AIDS. AIDS Behav. 2013. doi:10.1007/s10461-013-0547-4.
30 Monitoring and evaluation directorate. Antiretroviral therapy scale up in Ethiopia: successes and challenges. Addis Ababa: Ethiopia HIV/AIDS Prevention and Control Office (HAPCO) Plan; 2009.
31 Au JT, Kayitenkore K, Shutes E, Karita E, Peters PJ, Tichacek A, Allen SA. Access to adequate nutrition is a major potential obstacle to antiretroviral adherence among HIV-infected individuals in Rwanda. AIDS. 2006;20(16):2116–2118.
32 Kalichman SC, Pellowski J, Kalichman MO, Cherry C, Detorio M, Caliendo AM, Schinazi RF. Food insufficiency and medication adherence among people living with HIV/AIDS in urban and peri-Urban settings. Prev Sci. 2011;12(3):324–332.
33 Franke MF, et al. Food insufficiency is a risk factor for suboptimal antiretroviral therapy adherence among HIV-infected adults in urban Peru. AIDS Behav. 2010;15(7):1483–1489. doi:10.1007/s10461-010-9789-6.

components of the effects achieved, which enabled people to overcome important barriers such as food insecurity or side effects of treatment, in addition to reducing risk-taking behaviour.[34]

Thus, food and nutrition interventions can be effective in protecting investments by improving treatment success and mitigating the consequences that HIV and TB have on people's livelihoods by reducing the risk of early mortality among people initiating antiretroviral therapy; supporting nutritional recovery and offsetting the side effects of treatment; helping overcome barriers to treatment adherence and improving retention in care; and mitigating the effects of infection on lost income and treatment expenses.

Food and nutrition activities should not be implemented in isolation, but, rather, should complement other interventions at both the health sector and community levels. As part of a comprehensive package, food and nutrition activities are intended to support other interventions and make the overall response more cost effective.

## 1. Key elements

Food and nutrition interventions should:

- Be aimed at improving treatment outcomes and avoiding new infections by:
  - Facilitating treatment success through enhancing nutritional recovery as well as increased access and retention to care and reducing loss to follow-up (treatment, care and support and prevention of mother-to-child transmission).
  - Providing support to reduce negative coping behaviours through mitigation and safety nets (food or cash/voucher assistance) and livelihoods support (farming activities, food for work).
- Be aligned with the country strategy and prevailing context.
- Be aligned to the latest UNAIDS and WHO guidelines (see section below on guidelines).

Treating malnutrition includes prescription of specialised nutritious foods that provides the nutrients required for rebuilding tissues (such as muscle and fat mass) and restoring bodily functions.[35] Treatment initiation and adherence support may require specific foods to manage side effects (such as nausea or a lack of appetite) in addition to a transfer (food, cash or vouchers) that offsets the out-of-pocket or opportunity costs of accessing treatment and compensates the individual for the loss of income while she or he is ill.

34 de Pee S, Grede N, Mehra D, Bloem MW. The enabling effect of food assistance in improving adherence and/or treatment completion for antiretroviral therapy and tuberculosis treatment: a literature review. AIDS Behav. 2014. doi:10.1007/s10461-014-0730-2.

35 de Pee S, Semba RD. Role of nutrition in HIV infection: review of evidence for more effective programming in resource-limited settings. Food Nutr Bull. 2010;31(4):S313–S344.

Choosing the right food is also important. Ready-to-use therapeutic foods (RUTF) and ready-to-use supplementary foods (RUSF) that were developed for children are often used for adults, although they are thought to be less acceptable. Due to the higher caloric needs, adults must consume greater quantities of these products, which they may find too sweet or monotonous. While scant, recent evidence suggests that these RUTFs are acceptable and, when available, these are consumed by adults[36] resulting in effective nutritional recovery.[37] Fortified blended foods are sometimes used for adults instead of or in addition to RUTF or RUSF. There is no standard or right food, however—the choice depends on the patient's requirements and nutritional status, the availability and cost of different products, the local habits and preferences as well as the programmatic requirements.

## Improving adherence

A holistic and comprehensive care approach that includes various healthcare, welfare and social support services. These should focus on both the medical and socioeconomic determinants of access and adherence, and can combine health-service, community and household delivery platforms.

Strategies for increasing adherence include:

1. Linking clinical services with community-based food and nutrition services. PEPFAR recognizes the linkages between clinical services and income, food and nutrition support, with care and treatment for people living with HIV/AIDS.

2. Strong linkages with other sectors including social protection, nutrition and food security, and education.

3. Targeted food and nutrition support accompanied by counselling to improve treatment knowledge and preparedness, as well as to mitigate the impact of HIV on the household.

Malnourished PLHIV, especially in food-insecure contexts, may require food supplements, in addition to antiretroviral therapy, to ensure that appropriate foods are consumed to support nutritional recovery[1]. In Haiti, food assistance was associated with improved food security, increased BMI and improved adherence to clinic visits at 6 and 12 months[2]. Most studies have found that providing food to food-insecure patients when they initiate antiretroviral therapy or TB treatment improves adherence to antiretroviral therapy[3].


1. Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection. Geneva: World Health Organization; 2013 (http://apps.who.int/iris/bitstream/10 665/85321/1/9789241505727_eng.pdf?ua=1 ).
2. Ivers LC, Jerome G, Freedberg KA. Food assistance is associated with improved body mass index, food security and attendance at clinic in an HIV program in central Haiti: a prospective observational cohort study. AIDS Res Ther. 2010;7(33):1–8.
3. De Pee S, Grede N, Mehra D, Bloem MW. The enabling effect of food assistance in improving adherence and/or treatment completion for antiretroviral therapy and tuberculosis treatment: a literature review. AIDS Behav. 2014;Mar 12.


36 Bahwere P, Sadler K, Collins S. Acceptability and effectiveness of chickpea sesame-based ready-to-use therapeutic food in malnourished HIV-positive adults. Patient Prefer Adherence. 2009;3:67–75.

37 Bahwere P, Deconinck H, Banda T, Collins S. Effective therapeutic feeding with chickpea sesame-based ready-to-use therapeutic food (CS-RUTF) in wasted adults with confirmed or suspected AIDS. World J AIDS. 2011;1:169–181. doi:10.4236/wja.2011.14025.

Malnourished people need to be assessed carefully before selecting a specific product or combination of products. The product is meant to complement the existing diet of a particular target group with special nutritional needs. WHO guidelines[8,9,38] should be used to determine the increased dietary needs of people living with HIV and TB patients, taking into account whether they are asymptomatic, symptomatic and/or malnourished.

## 2. Focus populations

Careful consideration should be given to target populations to ensure that finite resources are used in the most cost-effective manner.[25]

- *People living with HIV and patients on TB treatment.* Nutritional assessment (anthropometry, clinical and dietary assessment), education, counselling and support should be provided as an integral component of treatment and care and should be provided throughout the patient's life (for people living with HIV) or for as long as they are on treatment for TB.
- *People living with HIV who are undernourished.* Specialized nutritious food should be provided to those wasted and with bilateral pitting oedema until anthropometric criteria (e.g. BMI or mid-upper arm circumference) show recovery regardless of the household food security status. Two subsequent monthly assessments above the predefined cut off (e.g. the entry criteria) are sometimes used to determine exit from the food support. In other cases, separate exit criteria are set for mid-upper arm circumference or BMI. The discharge criteria used by nutritional recovery programmes are described elsewhere.[39]
- *Infants.* Food and nutrition security challenges are particularly detrimental to children's development. In the context of HIV, optimal infant feeding in line with the 2013 WHO guidelines is necessary to reduce mother-to-child transmission of HIV, to maximize the chance of HIV-free survival and to optimize the growth and development of HIV-exposed and HIV-positive infants.[40]
- *Households that care for a person receiving antiretroviral therapy or TB treatment.* In a food insecure and low-income setting, the benefits of support given to households affected by TB and HIV are well-known, as evidenced by cash transfer programmes

38 Essential nutrition actions: improving maternal, newborn, infant and young child health and nutrition. Geneva: World Health Organization; 2013 (http://apps.who.int/iris/bitstream/10665/84409/1/9789241505550_eng.pdf?ua=1, accessed 14 July 2014).

39 Food and Nutrition Technical Assistance Project, World Food Programme. Food assistance programming in the context of HIV. Washington, DC: Food and Nutrition Technical Assistance Project; 2007 (http://one.wfp.org/food_aid/doc/Food_Assistance_Context_of_HIV_sept_2007.pdf, accessed 14 July 2014).

40 World Health Organization, Joint United Nations Programme on HIV/AIDS, United Nations Population Fund, United Nations Children's Fund. Guidelines on HIV and infant feeding 2010. Principles and recommendations for infant feeding in the context of HIV and a summary of evidence. Geneva: World Health Organization; 2010 (http://whqlibdoc.who.int/publications/2010/9789241599535_eng.pdf, accessed 14 July 2014).

and income support activities carried out in Bangladesh,[41, 42] Ethiopia,[43] Malawi[44] and Mexico.[45] These transfers may be provided for a finite period of time as a sustainable way to prevent the development of negative coping behaviours and to support initial treatment adherence.[3] Although some programme implementers tie household assistance to food security status, any indicator used for targeting will at best represent a proxy for the assessment of the past and present status and cannot fully predict the potential prevention of any deterioration of food security status (which is often the objective of household support). In addition, this kind of support should be provided for a finite period of time, thereby ensuring the effective use of resources. The support is meant to prevent households from engaging in negative coping behaviours, not as a long-term solution to food insecurity or poverty, which should be addressed instead through broader social protection mechanisms.

- *Other households affected by HIV.* These may include households headed by children and those hosting orphans or other vulnerable children. These households may receive longer-term support.

41 Ahmed AU, Quisumbing AR, Hoddinott JF. Relative efficacy of food and cash transfers in improving food security and livelihoods of the ultra-poor in Bangladesh. Washington, DC: International Food Policy Research Institute; 2007 (http://www.un.org.bd/pub/unpubs/Relative%20efficacy%20of%20food%20and%20cash%20transfers%20in%20improving%20food%20security%20and%20livelihoods%20of%20the%20ultra-poor%20in%20Bangladesh.pdf, accessed 14 July 2014).

42 Ahmed SM, Masud Rana AKM. Customized development interventions for the ultra poor: preliminary changes assessment of health and health seeking behaviour (CFPR/TUP 2002 to 2004). CFPR/TUP Working Paper series no. 7. Dhaka: BRAC Centre; 2005 (http://research.brac.net/workingpapers/health_change.pdf, accessed 14 July 2014).

43 Doocy S, Teferra S, Norell D, Burnham G. Credit program outcomes: coping capacity and nutritional status in the food insecure context of Ethiopia. Soc Sci Med. 2005; 60(10):2371–2382.

44 Miller C, Tsoka M, Reichert K. Impact evaluation report: external evaluation of the Mchinjii social cash transfer pilot. Washington, DC: Centre for International Health and Development; 2008 (http://www.bu.edu/cghd/files/2010/10/Miller-C-2008-Impact-Evaluation-of-the-Mchinji-Social-Cash-Transfer1.pdf, accessed 14 July 2014).

45 Fernald LC, Gertler PJ, Hou X. Cash component of conditional cash transfer program is associated with higher body mass index and blood pressure in adults. J Nutr. 2008;138(11):2250–2257. doi:10.3945/jn.108.090506.

## 3. Data requirements

Data are needed to justify the selection of interventions, in order to analyse any existing gaps and to set targets. Information in the following categories may be required:

**Table 1.**
**Data requirements for food and nutrition programmes**

| | |
|---|---|
| Epidemiology | ▪ Demographic information (i.e. population size, rural/urban, poverty rates)<br>▪ Prevalence and incidence of the HIV and TB among the general and focus populations (rural/urban, regional, etc.)<br>▪ Drivers and factors associated with the epidemic (i.e. biomedical, behavioural, social, structural, etc.)<br>▪ New sources of infection<br>▪ Food security indicators, better if related to people affected by the epidemics<br>▪ Nutrition information, better if related to related to people living with HIV on ART and TB patients |
| Policy | ▪ National ART and TB Policy<br>▪ HIV and TB national strategic plans<br>▪ National poverty, food security, nutrition and social protection policies, amongst other<br>▪ Nutritional protocol and guidelines |
| Programmatic | ▪ Existing programmes (treatment of malnutrition amongst people living with HIV and TB patients, nutritional counselling and assessment, prevention of mother-to-child transmission, safety nets for people affected by HIV/TB, etc.)<br>▪ In-service training on nutrition support for ART and DOTS patients for health workers<br>▪ Existing monitoring and evaluation systems<br>▪ National targets<br>▪ Global Fund concept note<br>▪ Stakeholder analysis (i.e. list of key players)<br>▪ Coverage<br>▪ Service providers<br>▪ Acceptability and availability of food products |
| Financial | ▪ Costs (see the national strategic plan for the specific country)<br>▪ Funding availability and sources |

To maximize the impact of interventions, it is necessary to know the context. This can be achieved through an analysis of the nutritional and food security situation and gaps. The goal of such an assessment is to understand problems faced by people living with HIV and TB against the background of the nutritional and food security status of the broader population. This analysis can then be used to justify the proposed food and nutrition interventions.

### Examples of questions to ask when conducting an assessment

- Are nutritional policies and guidelines in place, and if so, are they up to date? Do the HIV and/or TB national policy or strategy address nutrition? What are the nutritional needs of people living with HIV and TB patients? Does the national nutrition policy or strategy address these needs?
- How high is mortality in the first six months of treatment? Is it higher than in comparable contexts?
- What proportions of people living with HIV or TB patients on treatment are lost to follow up or show poor adherence? What seem to be the main reasons for the failure to adhere?
- Are poverty reduction/food security/social protection policies in place, and if so, are they up to date? Do the HIV and/or TB national policy or strategy address food insecurity and other socio-economic vulnerabilities? What are the needs of people living with HIV and TB patients? Does the poverty reduction/food security/social protection policy or strategy address these needs?
- Are areas of high food insecurity also areas of high HIV prevalence and TB incidence? (If so, broader safety nets may be useful in slowing the spread of HIV.)
- What evidence is there that the livelihood of households affected by HIV or TB deteriorates severely and leads to negative coping behaviours, thus increasing the risk of HIV transmission?
- What percentage of people living with HIV or TB patients attending health facilities for the first time show signs of wasting, bilateral pitting oedema and/or micronutrient deficiencies?
- Are there any food and nutrition programmes already in place for people living with HIV or TB patients? If so, are these operating at the health sector or the community level? Are they integrated and aligned with the national HIV or TB policy or strategy? What is their coverage? Are they aligned with each other? Who are the main implementing partners?

## 4. Implementation challenges

The most common challenges for the financing, implementation and scale up of food and nutrition programmes include a lack of defined nutrition policies and protocol, inadequate human resources and personnel, weak monitoring systems, a lack of infrastructure as well as lack of awareness of the importance of food and nutrition within the HIV/TB response and limited coordination between stakeholders and governmental agencies.

Barriers to access include living in remote rural areas, a fear of stigma and discrimination, a lack of awareness and education and a lack of integration between nutrition services and programmes related to the prevention of mother-to-child HIV transmission, child health services and HIV and TB services.

## 5. Main activities

Interventions proposed by a coalition of food and nutrition stakeholders should meet the identified needs, fill existing gaps, be justified by evidence and research and be related to other activities. For example, nutrition should be described as an enabler for treatment success or income transfers to affected households should be described as a way to improve adherence to treatment and to reduce the number of cases lost to follow-up. These interventions should also have a realistic budget sufficiently detailed to allow for an assessment of the costs of activities. Finally, they need to assess impact by including monitoring and evaluation activities from the planning stage and include indicators that allow for the assessment of the impact of the strategy.

Suggested actions for the design of food and nutrition interventions are described below:

- *Action 1.* This includes standard nutritional assessments and counselling for all people living with HIV and TB. Anthropometric measurements—such as BMI for adults, mid-upper arm circumference or weight-for-height for children and mid-upper arm circumference for pregnant and breastfeeding women—may be used.
- *Action 2.* People found to be malnourished (severely or moderately wasted and/or with bilateral pitting oedema) should receive specialized nutritious foods for a time-limited period to enhance nutritional recovery. This support is provided until anthropometric target are reached. Nutritional assessment and counselling (based on the individual's specific situation) should continue in order to monitor the nutritional status, address any potential nutritional issues that remain and to prevent or address new issues that may arise. When possible, it is advisable that programmes also provide a finite income transfer in the form of food, vouchers or cash to the household to reduce the sharing of the individual ration among family members.
- *Action 3.* People living with HIV and TB patients might not be malnourished, but individual and affected households may exhibit vulnerability, such as food insecurity. It is critical, therefore, to establish linkages and referral systems between clinical and community-based programmes.. Where appropriate and needed, food support which can be in the forms of in-kind, cash and voucher can be provided to food insecure people living with HIV and TB patients and their families, including households hosting orphans and vulnerable children, to mitigate the immediate economic consequences of HIV and TB and therefore prevent them from adopting negative coping mechanisms..This is particularly important when productive members of the household are sick, when the household is hosting orphans or other children made vulnerable by HIV and when the household is headed by elderly people, women or children. Communities may also provide additional education and counselling, psychosocial support and referrals to livelihood activities.
- *Action 4.* Other important elements of a successful approach include operational research and a solid monitoring and evaluation system with good food and nutrition indicators. These are critical for assessing the extent to which interventions contribute to addressing the problems identified during planning.
- *Action 5.* Crosscutting issues of gender, human rights and equity should be integrated into and addressed through all programme activities (see section 8).

## 6. Monitoring and evaluation

Monitoring and evaluation is crucial to ensuring the cost-effective use of resources, to report outcomes, to improve programmes including their implementation and to generate new evidence from operational research activities. For food and nutrition activities in the context of HIV and TB, implementing organizations are currently using a variety of indicators. PEPFAR has developed extensive monitoring and evaluation guidance for HIV[46]. Additionally, WHO and PEPFAR, through stakeholder consultations, have identified a set of globally harmonized M&E indicators for nutrition and HIV activities that has been reviewed by the Monitoring Evaluation Reference Group (MERG). These indicators assess whether nutritional assessment is carried out routinely, whether a food supplement is provided to individuals found to be severely or moderately wasted and/or those with bilateral pitting oedema, whether counselling is provided and whether people who are malnourished recover from malnutrition. Furthermore, food and nutrition interventions should be linked to measures of mortality, adherence and loss-to-follow-up.

**Table 2.**
**Harmonized indicators for nutrition and HIV[47]**

| **Nutrition care and HIV** | |
|---|---|
| Impact | **Undernutrition in people living with HIV.** The number and proportion of people living with HIV in care and treatment identified as undernourished* at any point during the reporting period. |
| Outputs | 1. Provision of therapeutic or supplementary food to undernourished people living with HIV:<br>▪ The number and proportion of undernourished people living with HIV that received therapeutic or supplementary food at any point during the reporting period. |
| | 2. Nutritional assessment for people living with HIV:<br>▪ The number and proportion of people living with HIV in care and treatment that were nutritionally assessed during the reporting period. |
| | 3. Nutrition counselling for people living with HIV:<br>▪ The number and proportion of people living with HIV in care and treatment that were nutritionally assessed through anthropometric measurement who also received nutritional counselling at any point during the reporting period. |
| **Prevention of mother-to-child HIV transmission and infant feeding** | |
| Impact | **12-month infant HIV-free survival.** The percentage of infants born to HIV-positive women in prevention of mother-to-child transmission programmes who are alive and HIV-negative at 12 months of age. |

46 Planning and reporting: next generation indicators reference guide. Washington, DC: US President's Emergency Plan for AIDS Relief; 2009 (http://www.pepfar.gov/documents/organization/81097.pdf, accessed 14 July 2014).

47 Heap AN. Harmonized indicators for nutrition and HIV. Washington, DC: United States Agency for International Development; 2012 (http://www.healthqual.org/sites/default/files/Summary%20-%20Harmonized%20Indicators%20for%20Nutrition%20and%20HIV%20Final%202%2012.pdf, accessed 14 July 2014).

| | |
|---|---|
| Outputs | 1. Maternal nutritional status in postnatal care:<br>▪ The number and percentage of HIV-positive women who have a mid-upper arm circumference < 220 mm at the first postnatal visit. |
| | 2. Infant nutritional status:<br>▪ The number and percentage of HIV-exposed infants with acute malnutrition** at the 12-month follow-up visit. |
| | 3. Infant feeding status:<br>▪ The percentage of HIV-exposed infants who are exclusively breastfed at 3 months of age.<br>▪ The percentage of HIV-exposed infants who receive replacement feeding at 3 months of age.<br>▪ The percentage of HIV-exposed infants who receive mixed feeding at 3 months of age. |
| **Food access and HIV** | |
| Impact | **Food security for people living with HIV.** The number and proportion of people living with HIV receiving care and treatment services whose households have poor access to food based on the household hunger scale.[48] |
| Outcomes | 1. Per capita expenditures in HIV-affected households:<br>▪ The percentage change in average per capita household expenditures among HIV-affected households. |
| | 2. Percentage of total expenditures spent on food in HIV-affected households:<br>▪ The average percentage of total expenditures that are spent on food in HIV-affected households. |
| | |
| Outputs | 1. Referral to food security services:<br>▪ The number and percentage of HIV care and treatment clients vulnerable to food insecurity who are referred from clinical facilities to food security services. |
| | 2. Receipt of food security services:<br>▪ The number and percentage of HIV-affected households that receive food security services including in-kind, cash, vouchers. |

* Undernourished refers to those who are in a nutritional state that is suboptimal. In such a state, health and growth may be limited. Undernourishment may be due to illness that impairs nutrient intake and metabolism or result from the inadequate intake of macronutrients, micronutrients or both.[8]

** Moderate acute malnutrition in children is defined as weight-for-height Z-scores between –3 and –2 from the median WHO child growth standards without oedema.

48 Ballard, Terri, J. Coates, A. Swindale, M. Deitchler. Household hunger scale: indicator definition and measurement guide. Washington, DC : Food and Nutrition Technical Assistance II Project (FANTA II), FHI 350; 2011 (http://www.fantaproject.org/sites/default/files/resources/HHS-Indicator-Guide-Aug2011.pdf, accessed 21 August 2014).

## 7. Approaches to costing

It is critical that the requested funds are based on a thorough assessment of the resources and associated costs required. Budgets need to be as detailed as possible and based on actual costs (e.g. through price quotations) or, where these data are not available, comprehensive and documented assumptions (e.g. through previous programme experience).

In a food and nutrition context, costs are dependent on the following factors:

- the type of intervention (e.g. nutritional support for people living with HIV on antiretroviral therapy, support for orphans and other vulnerable children and food and nutritional support in the context of the prevention of mother-to-child transmission programmes);
- the duration and entry/exit criteria and the number of beneficiaries;
- the distribution model (e.g. in kind transfers or vouchers);
- the existing infrastructure (i.e. distribution mechanisms through which the food and nutrition interventions are implemented through, for example, food distribution sites);
- food prices.

Given that the latter two factors are highly context-specific, costing needs to be approached on a country-by-country basis. There are, however, some common elements that may be involved in any food and nutrition intervention and that can serve as guidance in the budget preparation process.

The start-up costs commonly include:

- Infrastructure and equipment including storage facilities and administrative supplies.
- Staff recruiting and training including those training related to nutritional assessment, education and counselling and supply-chain management.

Recurring costs commonly include:

- Human resource costs including salaries[49], per diems and updated training programmes.
- Commodities such as specialized food products including RUTF, RUSF and/or fortified blended foods.
- Logistics including transportation, distribution and customs costs.
- Operating costs such as rentals or premises and the cost of utilities.
- Monitoring and evaluation activities including site visits and laboratory tests.
- Community outreach including the communication of services provided.

49 Food and Nutrition Technical Assistance Project, World Food Programme. Food assistance programming in the context of HIV. Washington, DC: Food and Nutrition Technical Assistance Project; 2007 (http://one.wfp.org/food_aid/doc/Food_Assistance_Context_of_HIV_sept_2007.pdf, accessed 14 July 2014).

On average, commodities and logistics account for about 55% and 30%, respectively, of the total programme costs.[50]

## 8. Addressing gender, human rights and equity issues

The strategic integration of food and nutrition into national strategic plans and national responses should take into account and include vulnerable populations, address human rights related barriers to accessing nutrition care and should promote equity and gender equality. The planning of activities and programmes should involve those who are affected by HIV and TB and involve representatives and their community-based organizations through consultations. These goals require resources to help those affected to identify representatives and to participate and provide input into nutrition and food security strategies. Furthermore, such strategies should ensure that data collected on the coverage and uptake of services are disaggregated by sex, age and rural/urban residence. Studies have shown that to whom food supplementation is provided is a critical issue for the efficacy of the programme. Generally, it is best to provide household food and nutritional support to women since they are more likely to distribute these to family members.

## 9. Additional information

This section describes important linkages with other interventions, implementing partners to consider and technical assistance requirements and includes a list of reference materials and tools by area of interest.

### *Linkages with other interventions*

Activities must be supported by a set of overarching critical enablers, which maximize the effectiveness and outcomes of the HIV response. Programme enablers may include linkages to social protection and a variety of livelihood activities that aim to give affected households the tools to meet their basic needs, including food, so that they do not have to rely on long-term income transfers or food assistance and contribute to treatment adherence and retention in care. Social protection is also a critical enabler that provides an opportunity for integration with food and nutrition interventions.[51]

50 Centre for Global Health, World Food Programme, Joint United Nations Programme on HIV/AIDS. Cost of providing nutritional support for people living with HIV, adults receiving TB treatment, orphans and vulnerable children and pregnant women. Geneva: Joint United Nations Programme on HIV/AIDS; 2010 (http://data.unaids.org/pub/BaseDocument/2010/20100506_cost_nutritional_support_en.pdf, accessed 14 July 2014).

51 United Nations Development Programme, Joint United Nations Programme on HIV/AIDS. Understanding and acting on critical enablers and development synergies for strategic investments. New York: United Nations Development Programme; 2012 (http://www.undp.org/content/dam/undp/library/hivaids/English/UNAIDS_UNDP_Enablers_and_Synergies_ENG.pdf, accessed 14 July 2014).

A comprehensive food and nutrition approach should include the following components that are linked, where possible, with other interventions:

- Treatment, care and support and prevention of mother-to-child transmission and paediatric care;
- Nutritional assessment, education and counselling for all people living with HIV and clients with TB, including infant feeding practices for pregnant and breastfeeding women who are living with HIV;
- Specialized food products for the nutritional rehabilitation of people with malnutrition, including pregnant and breastfeeding women and their children.
- Household support in the form of food, vouchers or cash, as a finite income transfer intended to compensate for the loss of income and reduce sharing of individual rations meant for nutritional rehabilitation among family members.

For people living with HIV or TB patients who have been established on treatment and are in need of further support, programmes may seek to link their beneficiaries with social protection or livelihood strengthening activities offered to vulnerable populations by national governments or other partners. While these may not be targeted specifically at people living with HIV or TB patients, programme designers and implementers may assess jointly with partners whether the needs of people living with HIV and TB patients can be accommodated and then formalize referral mechanisms.

Livelihood activities may include:

- Peer support and community-based support to strengthen the linkages between the health sector and the community in order to guarantee a continuum of care.
- Activities such as farming, livestock activities, microfinance and vocational programmes to empower affected households to regain control of their food and nutritional security and to assist people living with HIV and their households in maintain or rebuild their income, savings and overall livelihood security.

## Key implementing partners to be considered

Key implementing partners to consider include the following:

- National governmental structures such as:
  - Ministries of health, social welfare and finance;
  - National AIDS/TB commissions and other public health-care providers;
- Governmental aid organizations such as:
  - Bilateral governmental aid organization, including the United States Agency for International Development (USAID), PEPFAR and United Kingdom's Department for International Development (DFID);
- United Nations and other international institutions such as:

  - United Nations agencies such as WFP, UNAIDS, WHO, United Nations Children's Fund (UNICEF) and United Nations Population Fund (UNFPA)
  - Development banks such as The World Bank, African Development Bank (AfDB) and Asian Development Bank (ADB);
- Nongovernment organizations, technical agencies and the private sector including:
  - National and international nongovernmental organizations such as Médecins Sans Frontières or Doctors without Borders (MSF), Action Contre la faim (ACF), Clinton Health Access Initiative (CHAI) and Management Sciences for Health (MSH);
  - Civil society organizations and associations of people living with HIV; and
  - Technical agencies or advisors such as Food and Nutrition Assistance II Project (FANTA2) and Supply Chain Management System (SCMS);
- Academia and research institutions such as International Centre for AIDS Care and Treatment Programmes (ICAP) at Columbia University and Johns Hopkins University.

## Technical assistance

The UNAIDS Secretariat and Cosponsors, including WFP, provide technical assistance for the development of national strategic plans that invest for results. These plans integrate food and nutrition in the response based on analyses of existing gaps and the epidemiological data to address the needs of vulnerable populations.

## References for further information

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Regional Network on AIDS, Livelihoods and Food Security (RENEWAL; http://programs.ifpri.org/renewal/)

UNAIDS Cosponsors (http://www.unaids.org/en/AboutUNAIDS/UNAIDSCosponsors/WFP/)

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