

Chapter II

NUTRITION-RELATED INTERVENTIONS

OVERVIEW

The relationship between HIV and AIDS and poor nutrition has been well established¹. Infection with HIV exacerbates the impact of poor nourishment, while poor nutrition hastens the progression of HIV infection to AIDS, wasting and death. Opportunistic infections and their associated symptoms limit food intake and intensify resting energy demands, increasing nutritional needs. HIV-related symptoms such as anorexia, nausea, vomiting, malabsorption, and diarrhoea further worsen poor nutrition. For undernourished HIV-infected people, the resulting downward spiral of inadequate nutritional intake, inability to maintain weight and lean tissue mass, micronutrient deficiency, and increased susceptibility to opportunistic infections accelerates the development of AIDS. This decline ultimately leads to malnourished, HIV-infected people who become economically unproductive and unable to control their illness. Similar principles apply to TB, where nutritional deficiencies also accelerate disease progression, and impair response to medications.

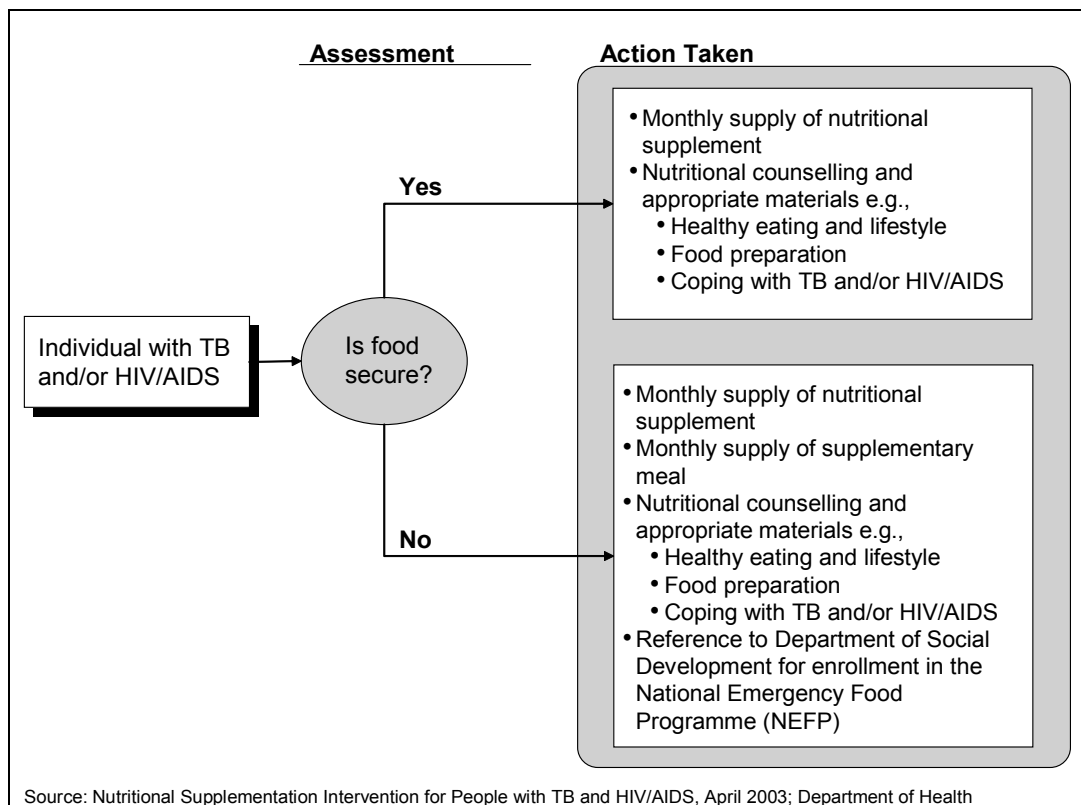
BACKGROUND AND RATIONALE

The South African government seeks to implement a comprehensive nutritional programme with the introduction of HIV and AIDS care and treatment. The implementation of the nutrition supplementation intervention will be within the broad existing government policies and strategies aimed at eradicating poverty, providing better nutrition, and promoting healthy lifestyles in both HIV-negative and HIV-positive populations.

Existing integrated nutrition programmes include the National Emergency Food Programme (NEFP) to alleviate food insecurity and the Nutrition Supplementation Intervention for TB and HIV-infected individuals, which provides supplement meals and micronutrients. These programmes have facilitated improvements in food intake for many South Africans, and have encouraged the establishment of sustainable projects such as vegetable gardens and small-scale poultry farming. These programmes are examples of

joint collaborations among the departments of Health, Social Development, and Agriculture. For maximum impact, these programmes must be integrated and expanded to cover the nutritional needs of all those infected with TB and HIV. The Department of Health 2003 guidelines initiated the provision of supplement meals and micronutrients to all people with TB, HIV and AIDS along two broad options, delineated in Figure 2.1.

Figure 2.1: Nutritional Response to HIV and AIDS



The HIV and AIDS care and treatment programme will assist many people in these groups to participate in existing nutritional programmes, as well as extend nutritional services to additional groups.

APPROACH

TB and HIV Infected Individuals

In South Africa, both TB and HIV infection occur among adult and paediatric populations that already suffer from inadequate nutrition. Food choice may be affected by a number of factors, including knowledge and sources of information, socio-economic status, and

manifestations of TB or HIV infection. In these undernourished groups, both TB and HIV infections progress rapidly, exacerbating immune deficiency and increasing susceptibility to further infection. Current scientific evidence indicates that an optimal nutritional status with adequate vitamin and mineral levels delays the progression to AIDS². For the majority of South Africans living with early HIV infection, achieving and maintaining a healthy nutritional status will be instrumental in slowing the progression of disease, and delaying the time until treatment with ARVs becomes necessary.

The importance of good nutrition in patients dually infected with HIV and TB cannot be overemphasized. These patients are at highest risk for malnourishment secondary to their disadvantaged state. Through this programme, those without food security will receive vitamin supplementation, as well as referral to existing nutritional services for TB and HIV patients.

HIV-Positive Infants and Children

HIV-positive infants and children face a confluence of three powerful nutritional challenges, namely high nutritional needs to sustain their high growth rate, rapid progression to AIDS associated with significant wasting; and an immature, compromised immune system, with increased risk for opportunistic infections and diminished nutritional intake. Consequently, all HIV-positive children under the age of 14 years who enrol at service points should receive nutritional packages consisting of vitamin syrup and a supplement meal.

In addition, caretakers of HIV-positive infants and children will need to be well informed on nutritional management. Appropriate counselling should be included in regular paediatric clinic visits. In addition, particular efforts should be made to identify households headed by children, and connect them to the network of available nutritional services, specifically those located in the Departments of Health, Agriculture and Social Development.

HIV-Infected Pregnant Women

Recent scientific evidence shows that providing HIV-infected pregnant women with a multivitamin supplement that contains vitamins B, C and E, along with iron and folate,

reduces the potential for vertical transmission of HIV³. All seropositive pregnant women should therefore receive micronutrient supplements as part of their care and treatment programme. In addition, those with need should receive supplement meals to ensure their food security.

It has also been established that HIV can be transmitted through breast milk⁴. HIV-infected, lactating mothers will therefore receive appropriate counselling to facilitate informed decision-making, particularly in discordant situations where the newborn child is not infected with HIV. Counselling sessions for pregnant women will focus on:

- Risks and benefits of various infant feeding options, i.e. exclusive breast-feeding vs. exclusive formula feeding vs. mixed feeding.
- For the mothers who choose to use formula, proper preparation, feeding and storage processes.
- Appropriate foods for the mother to eat.

Infant formula may be available to all those who might require it. This is intended particularly in instances where the mother is HIV-positive and the child remains HIV-negative following delivery, in order to decrease the risk of vertical transmission that could occur through breast milk.

Nutritional Supplementation for Persons Receiving ARV Treatment

The HIV and AIDS care and treatment programme envisages the provision of supplement meals to all people with clinical AIDS who are malnourished and are eligible for ARVs, and who do not have access to a secure food supply. Individuals with AIDS who are not food insecure, and who receive care and treatment through a service point, should be referred to one of the appropriate existing nutritional programmes for additional nutritional support, if indicated.

Nutritional Issues Related to the Use of Antiretrovirals

From a clinical perspective, adequate nutrition, appropriate micronutrient supplementation, and the treatment of clinical malnutrition will significantly enhance the effects of antiretroviral treatment and treatments for opportunistic infections.

Some licensed antiretrovirals have food requirements, stemming from the effect of food on drug absorption through the gastrointestinal tract. Table 2.1 summarizes the food requirements for the first and second regimen drugs selected for South Africa. This interdependency of nutrition and ARV treatment emphasises the importance of integrating the ARV programme with nutritional services for maximal clinical benefit.

Table 2.1: Food Requirements for ARVs selected for use in South Africa

Regimen	Generic name	Food Requirement
1st line	Stavudine (d4T)	Take without regard to meals.
1st line	Lamivudine (3TC)	Take without regard to meals.
1st line	Efavirenz (EFV)	Avoid taking after high fat meals.
1st line	Nevirapine (NVP)	Take without regard to meals.
2nd line	Zidovudine (AZT)	Take without regard to meals.
2nd line	Didanosine (ddI)	Take 1 hour before or 2 hours after meal.
2nd line	Lopinavir / Ritonavir	Moderate fat meal increases absorption of capsules and solution. Take with food.

Source: Guidelines for the Use of Antiretroviral Agents in HIV-Infected Adults and Adolescents, Department of Health and Human Services (US), 2002.

The steadfast national attention to nutritional needs is expected to have a significant positive impact on people living with HIV and AIDS, including those on ARVs.

Comprehensive Nutritional Counselling Services

In addition to the targeted interventions described above, all persons attending service points for HIV care should receive counselling and materials on healthy eating and lifestyle, food preparation and coping with infection. Nutritional counselling for HIV-infected patients helps them to effectively manage their illness, and to understand the wide array of nutritional programmes available to them to help them meet nutritional needs. Elements to be included in counselling and education include basic nutritional education, including weight maintenance; food safety; food strategies that employ locally available foods; and the provision of appropriate recipes. Communities will be targeted with general information on nutrition, with particular emphasis on HIV and AIDS-specific needs, and referral to home-based care programmes.

Coordination with Integrated Nutritional Programmes

This programme is central to the coordination of nutritional care for HIV-infected patients. Available service point nutritionists should provide regular assessments of patients' nutritional needs, evaluate food and supplement needs of patients, and, where necessary and appropriate, refer patients to Social Development and appropriate food security programmes, such as the National Emergency Food Programme (NEFP). The integration of HIV service points with these programmes is expected to augment their effectiveness and assist in their ability to manage additional demand.

SPECIAL CONSIDERATIONS

Accreditation

Assessment of nutritional plans will be part of the service point strengthening and accreditation process (see Chapter IV, *Accreditation of Service Points*).

ADMINISTRATIVE STRUCTURE

National Level

The Department of Health will be responsible for setting nutritional guidelines, coordinating interdepartmental nutritional programmes, and developing nutritional training materials. It is expected that as implementation occurs, provinces will assume administration of the nutritional components of the programme in conjunction with the existing Department of Health initiatives.

Specifically, the national Department of Health will remain responsible for:

- Reviewing the specifications of supplement meals;
- Setting the standard level of the multivitamin/mineral syrup or tablet;
- Reviewing criteria for nutritional supplementation;
- Ensuring that reliable suppliers are identified;
- Developing and updating training materials regarding nutritional assessment, nutrition counselling and education (healthy eating and lifestyle); and
- Coordinating with the Departments of Social Development and Agriculture to ensure adequate coverage of NEFP throughout all service points.

Provincial Level

Each province will be responsible for comprehensive planning to address nutritional needs related to the implementation of the HIV and AIDS care and treatment programme.

The provincial offices will be responsible for:

- Ensuring that staff are appropriately trained in nutrition assessment;
- Ensuring uninterrupted supply of nutrition supplements (supplement meals and micronutrients);
- Follow-up of clients and monitoring of nutritional status;
- Providing nutrition support, especially to in-patients (taking into consideration ability to eat and providing the appropriate feeding regimen and recognising food and ARV interaction);
- Ensuring that secure storage is available and distribution of supplies tallies with supplies received.

Local Level

Dieticians will be required at the district and service point level. These dieticians should be employed wherever possible at accredited delivery points within a district to implement the nutrition supplementation intervention. The dieticians should link with community liaison officers and/or community health workers at the surrounding community health centres and clinics. They should also be responsible for training nurses and community liaison officers, who should also have responsibility for assessing the nutritional status of patients.

PROGRAMME ASSESSMENT

The impact of this programme will be determined by regular review by the provincial Nutrition sub-directorates in conjunction with the Cluster for HIV and AIDS. Nutrition has been identified as a priority research issue for this programme - findings will inform future nutritional interventions. Through these efforts, the impact of the nutritional programme on HIV-related morbidity and mortality can be assessed to determine the relationship between increased access to food, and the ability of HIV-infected individuals to lead healthy lives.