

**Nutrition activities in care, support and treatment of HIV/AIDS**  
**Situation Analysis for SEAR countries**  
**Based on preliminary desk review and inputs from member countries**

**Executive Summary**

The HIV/AIDS epidemic continues to have a devastating impact on health, nutrition, food security and overall socioeconomic development in the countries that have been greatly affected by the disease. Nutrition plays a critical role in comprehensive care, support and treatment of HIV infected people. There are complex interactions between nutrition and HIV/AIDS. HIV progressively weakens the immune system and leads to malnutrition. Malnutrition worsens the effects of HIV and contributes to more rapid progression to AIDS. HIV also has a negative impact on food and nutrition security. In fact, HIV/AIDS and food security are closely interlinked : While HIV/AIDS could lead to food insecurity, it is often, itself, a result of food insecurity.

In May 2006, World Health Assembly passed the resolution WHA 59.11 on Nutrition and HIV/AIDS. The resolution urges the Member States to make nutrition an integral part of their response to HIV/AIDS by identifying nutrition interventions for immediate integration into HIV/AIDS programming.

**Of the approximately 39.5 million people living with HIV/AIDS worldwide in 2006, an estimated four million people were in the South-East Asia Region.**

South-East Asia faces multiple and diverse epidemics occurring in different population groups and in different geographical areas at varying rates. The majority of the HIV burden in the Region is concentrated in five countries, namely India, Indonesia, Myanmar, Nepal and Thailand. It is useful to note here that although Bangladesh, Sri Lanka, Bhutan, Maldives and Timor Leste have low prevalence (<0.1%), they remain highly vulnerable to HIV infection. Long standing HIV epidemics have resulted in large number of people living with HIV and AIDS in SEA countries who need prevention, care, support and treatment services.

The Durban consultation meeting on Nutrition and HIV/AIDS in 2005 identified six important areas which require immediate consideration in care, support and treatment of HIV/AIDS people. WHO and UN Community have responded in several ways to facilitate incorporation of nutrition into the comprehensive response to HIV/AIDS.

Some of the SEA member countries have initiated actions to incorporate nutrition care and support for HIV/AIDS. A nutrition policy workshop to strengthen advocacy for the role of nutrition interventions as part of HIV was recently organized in Bangladesh supported by WFP and other UN agencies. In Indonesia, a policy for nutrition and HIV/AIDS has been incorporated into National Policy of HIV/AIDS. In Nepal, National Nutrition Policy addresses HIV transmission through breastfeeding as one of its objectives. The National strategy on HIV/AIDS for 2006-2011 also emphasizes the importance of nutrition for HIV/AIDS.

In India, the 2004 revised National guidelines on Infant and Young Child Feeding incorporate feeding options for HIV infected women. In Indonesia, the 2004 National Guidelines for Care, Support and Treatment for People Living With HIV/AIDS include nutrition as a part of the guidelines. In Thailand, specific guidelines for nutritional care of individuals for programme implementation at the health-facility have been developed by concerned national authorities. In Timor Leste Guidelines for Infant and Young Child Feeding have also been developed which include feeding options for mother with HIV/AIDS.

In the SEA region, WHO SEARO, along with WHO Indonesia, organized an Inter-country Training of Trainers workshop at Jakarta, Indonesia from 4 to 7 October 2005 to provide practical knowledge about nutrition care and support and communication skills for caregivers of people living with HIV/AIDS. Subsequently, Thailand and Myanmar organized national level workshops for the local staff in their country.

In India, several activities have been initiated to incorporate nutrition into HIV/AIDS programming. In 2004, WFP signed a MOU with Indian govt. to provide technical expertise in nutrition (including food) for HIV. Since 2005, Tamil Nadu AIDS Control Society has been providing a comprehensive range of HIV/AIDS care, support and treatment services including nutrition services through three family-centered continuum of care and ARV treatment programmes. In 2007, the Tamil Nadu Government in partnership with the WFP launched the free nutritional supplement support programme for PLWHA registered at all 15 Anti-retroviral Therapy (ART) centres in Tamil Nadu. In 2007, National AIDS Control Organization approved a programme to provide nutritional supplement to children enrolled under their ART programme in the country. Under this programme, fortified powdered supplements would be provided free of cost to children receiving ART. Since early 2007, Family Health International is leading a multi-partner five-year project known as *BalasaHYoga programme* to support children and families affected by HIV/AIDS in Andhra Pradesh, India. The programme includes nutrition support.

Y R Gaitonde Centre for AIDS Research and Education (YRG CARE), a non-profit referral centre in Chennai, Tamil Nadu, provides prevention, care, treatment and support services to PLWHA and their families. The services also include nutrition counselling.

The Indonesia HIV/AIDS Prevention and Care Project, a collaborative project between Government of Indonesia and the Government of Australia in one of its areas in Jakarta and Makassar, in South Sulawesi has incorporated nutrition intervention as part of HIV programming. It has included HIV nutrition advocacy, health and community workers and peer based nutrition education through the involvement of local CBOs.

Myanmar has been implementing its programmes using two approaches- PMTCT and Home based. Currently 36 PMTCT institutions are functioning nationwide. The PMTCT mothers receive nutrition counseling on optimal infant feeding practices and feeding options for HIV mothers. Since 2004, WFP has been providing food aid for the Home-based Care (HBC) Programme in one area, which is a dry zone where malnutrition and HIV/AIDS are both highly prevalent. WFP provides family rations to around 400 beneficiary households that care for at least one chronically ill person, most of whom are

HIV/AIDS patients and/or patients with tuberculosis precipitated by HIV/AIDS. Recently WFP further extended its food aid for HIV+ people in partnership with international non-governmental organizations.

In Thailand, the Bamrasnaradura Infectious Diseases Institute, provides individual nutrition counselling for the HIV-patients who have weight loss and malnutrition problems. The Thai-Australian Collaboration in HIV Nutrition (TACHIN) project is a large project currently being implemented at the Thai Red Cross in Bangkok. TACHIN is a collaborative project between the Thai Red Cross AIDS Research Centre, Institute of Nutrition, Mahidol University and the Albion Street Centre, Australia. The project provides many nutrition interventions such as nutrition assessment, nutrition counselling, community based initiatives, nutrition education for health and community workers and operational research.

In Timor-Leste, integration of nutrition and HIV/AIDS programme is not recognized as a priority at this stage. One of the main reasons is that HIV/AIDS prevalence is very low.

A separate national policy and strategy for both Nutrition and HIV/AIDS exist. However, integration of nutrition in care, support and treatment of HIV/AIDS is not recognized in any of the policy/strategy.

Some of the key constraints/challenges which the SEAR countries face are: nutrition interventions not well recognized as a part of HIV/AIDS among policy makers and programme managers, lack of financial and human resources, lack of coordination among different stakeholders. Some of the opportunities identified are presence of many national and international NGOs working in the area of HIV/AIDS and referral hospitals for care, support and treatment of PLWHA.

Thus to conclude, the SEARO member countries are at varying stages of incorporating nutrition interventions into HIV/AIDS- ranging from advocacy level to implementation of programmes. However, still much needs to be done before the member countries can fully incorporate nutrition into care, support and treatment for HIV-infected and affected families.

## 1. Introduction

The HIV/AIDS epidemic continues to have a devastating impact on health, nutrition, food security and overall socioeconomic development in the countries that have been greatly affected by the disease (1). The HIV epidemic is increasingly driven by many of those factors that also drive under nutrition—in particular poverty, conflict and inequality.

The Declaration of Commitment on HIV/AIDS, adopted at an historic special session of the UN General Assembly in 2001 committed to comprehensive, time-bound targets for the delivery of the effective HIV prevention, treatment, care and support needed to halt and begin to reverse the global epidemic by 2015(2).

Nutrition plays a critical role in comprehensive care, support and treatment of HIV infected people. There are complex interactions between nutrition and HIV/AIDS. HIV progressively weakens the immune system and leads to malnutrition. Malnutrition worsens the effects of HIV and contributes to more rapid progression to AIDS. Those who are ill from HIV infection, from poor nutrition or both are less able to find work or food to sustain themselves. In many areas of the developing world, HIV infection and malnutrition co-exist (3).

Alarmed by the rising trend of HIV/AIDS in several countries, and recognizing that nutrition should be integrated into a comprehensive response to HIV/AIDS pandemic, the World Health Assembly passed the resolution WHA 59.11 on Nutrition and HIV/AIDS in May 2006. The resolution urges the member states to make nutrition an integral part of their response to HIV/AIDS by identifying nutrition interventions for immediate integration into HIV/AIDS programming (4).

The UN General Assembly held a comprehensive review of the progress achieved in realizing the targets set out in the Declaration of Commitment on HIV/AIDS in May 2006. In the political Declaration adopted on HIV/AIDS, the General Assembly, resolves to integrate food and nutritional support, with the goal that all people at all times, will have access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences, for an active and healthy life, as part of a comprehensive response to HIV/AIDS”(5).

### 1.1 Global HIV Epidemic

An estimated 37.5 million [based on India’s recent revised estimate of 2.5 million] people worldwide were living with HIV at the end of 2006. An estimated 4.3 million [3.6 million–6.6 million] became newly infected with HIV and an estimated 2.9 million [2.5 million–3.5 million] lost their lives to AIDS (6) Overall, the HIV incidence rate (the proportion of people who have become infected with HIV) is believed to have peaked in the late 1990s and to have stabilized subsequently, notwithstanding increasing incidence in several countries. However, the *numbers* of people living with HIV have continued to rise, due to population growth and, more recently, the life-prolonging effects of antiretroviral therapy (2).

## 1.2 HIV Epidemic in SEAR

Among the WHO regions, Sub-Saharan Africa is the most affected region followed by South-East Asia. The overall adult HIV prevalence in South and South-East Asia (0.7%) regions is relatively much lower than that in sub-Saharan Africa (5.9%). However, due to the large population in these regions, even a low HIV prevalence means that a large number of people are infected. At the end of 2006, an estimated **4 million** (taking into account India's recent estimate of 2.5 million) people were living with HIV in South-East Asia Region. Approximately, 550, 000 people died of AIDS during 2006 (7).

South-East Asia faces multiple and diverse epidemics occurring in different population groups and in different geographical areas at varying rates. The scale of the epidemic varies immensely across the Region. India with the highest number of PLWHA (2.5 million), Maldives with less than 100 and DPR Korea from where an HIV infection case has not yet been reported (7).

**Table: HIV/AIDS burden in South-East Asian countries, December 2005**

Country	Adult HIV prevalence( %)	Estimated number of people living with HIV
Bangladesh	<0.1	11,000
Bhutan	<0.1	500
DPR Korea	No cases reported*	No cases reported*
Indonesia	0.2	170,000
India	0.36**	2,500,000**
Maldives	<0.1	<100
Myanmar	1.3	360,000
Nepal	0.5	75,000
Thailand	1.4	580,000
Sri Lanka	<0.1	5,000
Timor-Leste	<0.1	<100

Source: UNAIDS Global AIDS report 2006, HIV/AIDS in the South-East Asia Region WHO, 2007

\* Communication from DPR MOPH through WR DPR Korea

\*\* Based on recent revised estimate for India, July 2007 by National AIDS Control Organization, India

The majority of the HIV burden in the Region is concentrated in five countries, namely India, Indonesia, Myanmar, Nepal and Thailand. It is noteworthy that Bangladesh, Sri Lanka, Bhutan, Maldives and Timor Leste have low prevalence (<0.1%), but remain highly vulnerable to HIV infection (7). The reasons being increasing migration combined with high risk behaviors, injecting drug use and presence of high risk groups such as sex workers and MSM. In selected SEA countries, Thailand, India, Nepal and Indonesia, HIV is sharply increasing among IDU. Although HIV prevalence among women is lower than among men in the region, women are increasingly affected in SEA countries with HIV infection (7).

There are examples of successful reversal of the epidemic in Thailand and indications of decreasing HIV prevalence in Myanmar and Tamil Nadu State of India, as well as rapidly growing epidemics in Indonesia and Nepal (7).

Long standing HIV epidemics have resulted in large number of people living with HIV and AIDS in SEA countries who need prevention, care, support and treatment services (7).

## **2. Nutrition and HIV/AIDS**

Adequate nutrition, which is best achieved through consumption of a balanced healthy diet, is vital for health and survival for all individuals regardless of HIV status.

Nutrition and HIV are related to each other. Any immune deficiency as a result of HIV/AIDS leads to malnutrition, and malnutrition leads to immune deficiency. Malnutrition further worsens the effect of HIV and contributes to more rapid progression to AIDS. Thus malnutrition can both contribute to and result from the progression of HIV. HIV also has a negative impact on food and nutrition security. In fact, the linkages between HIV/AIDS and food security are bi-directional: HIV/AIDS is a determining factor of food insecurity as well as a consequence of food and nutrition insecurity (8).

The Durban consultation meeting (3) on Nutrition and HIV/AIDS in 2005 has identified six important areas which require immediate consideration in care support and treatment of HIV/AIDS people. These are Macronutrients and HIV, Micronutrients and HIV, HIV and Nutrition in Pregnant and lactating women, Growth failure in children, infant feeding and HIV transmission and Nutrition and ARV (See the attached Report by WHO Secretariat including participant statement). Thus providing early and adequate nutrition support and care may be one of the most important interventions for people with HIV.

Good nutrition helps in:

- Maintaining the desirable body weight for adequate energy level, increased productivity and a sense of well being,
- Minimizing the health problems arising due to HIV i.e. diarrhea, muscle wasting, wt loss and fever
- Building strong immune system through provision of different vitamin and minerals in the diet

- Supporting the effective action of drug treatment of opportunistic infections and ART

Nutrition must be brought into the essential care package for HIV. “Care and treatment” for HIV should not be narrowed to just providing anti-retroviral. *Nutrition should be included as a core part of essential care package.*

### **TB, HIV and Nutrition**

TB is one of the leading causes of illness and death among people living with AIDS in developing countries. The majority of people infected with the HIV virus develop TB as the first manifestation of HIV/AIDS (9).

South East Asia Region carries the highest burden of TB and the second highest burden of HIV in the world. Incidence of both diseases is highest in the economically productive age groups (15-54 years) and poses significant threats not only to health, but also to the social and economic development in the Region (9).

WHO Interim policy on TB/HIV activities (10) recommends that intensified tuberculosis case-finding should be established in all HIV testing and counseling settings. Also, there should be HIV surveillance among tuberculosis patients in all countries irrespective of national adult HIV prevalence rates. HIV prevalence among tuberculosis patients is the most sensitive and reliable indicator for the intersecting epidemic of tuberculosis and HIV in a country. The proportion of TB patients infected with HIV varies between countries within the SEA region and between the districts within the country. In 2004, the country level HIV prevalence among TB patients was estimated at 8.5% in Thailand, 7.1% in Myanmar, 5.2% in India, 3.2% in Nepal and 0.9% in Indonesia (7). WHO recommends strengthening mechanisms for collaboration between national HIV/AIDS and TB programmes (10).

Nutritional status of an individual plays a crucial role in preventing the onset of TB. Studies show that the nutritional status of HIV+ TB patients is far worse than that of HIV without TB patients (11). Many of the TB patients with other symptoms of AIDS suffer from malnutrition (12). Good nutritional support not only has a role in managing HIV/AIDS but also enables resistance to opportunistic infections such as TB. All TB and HIV control programmes should have nutrition-based interventions.

### **3. Global response by WHO and UN Community to Nutrition and HIV/AIDS**

#### **3.1 Consultation on Nutrient Requirements for people living with HIV/AIDS, WHO, 13-15 May 2003**

WHO initiated a collaborative effort to develop approaches based on the latest available scientific evidence with respect to the macronutrient needs of HIV-infected people, the special nutritional needs of HIV-infected pregnant and lactating women and their children, and the nutritional needs of HIV-infected adults and children receiving antiretroviral treatment. The evidence was gathered with the assistance of the WHO Technical Advisory Group\* on Nutritional and HIV/AIDS. The initial findings were presented and discussed at technical consultation on Nutrient Requirements for people living with HIV/AIDS (1).\*

#### **3.2 Development of HIV and Infant Feeding: UN Framework for Priority Action. Geneva, 2003.**

In 2003, UN agencies, as a collaborative effort developed a joint framework on HIV and Infant Feeding for Priority Action(13). The purpose of this framework *is* to recommend to governments key actions, related to infant and young child feeding, that cover the special circumstances associated with HIV/AIDS. The aim of these actions is to create and sustain an environment that encourages appropriate feeding practices for all infants in the context of HIV, while scaling up interventions to reduce HIV transmission. In relation to the special circumstances created by HIV/AIDS, the framework proposes five priority areas for national governments in the context of the Global Strategy for Infant and Young Child Feeding.

#### **3.3 Consultation on Nutrition and HIV/AIDS in Africa. Evidence, lessons, and recommendations for action, Durban, South Africa, 10-13 April 2005.**

The consultation on Nutrition and HIV/AIDS, was held in Durban, South Africa, 10-13 April 2005 (3). Seven UN agencies participated - WHO, UNICEF, FAO, WFP, UNHCR, UNAIDS, IAEA - as well as the World Bank, the US National Institute of Health and the South African Department of Health and representatives from 20 countries in south and east Africa, 21 NGO's, 5 Regional groups, health professionals, HIV/AIDS networks and donors.

The latest available scientific evidence and detailed reviews with respect to the macronutrient needs of HIV-infected people, the special nutritional needs of HIV-infected pregnant and lactating women and their children, and the nutritional needs of HIV-infected adults and children receiving antiretroviral treatment were undertaken and submitted to the technical consultation in Durban. The evidence was gathered with the assistance of the WHO Technical Advisory Group on Nutritional and HIV/AIDS.

A statement was put out by participants which called the integration of nutrition into essential package of care, treatment and support for people living with HIV/AIDS.

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\* WHO established a Technical Advisory Group (TAG) on Nutrition and HIV/AIDS in 2003 as the principal international technical body responsible for making recommendations to the Director General of WHO for appropriate action in national and international settings

The strategies and action steps reached at the consultation were planned to be used as the main platform for WHO to take the necessary measures in this area. WHO would be focusing on the development of global recommendations, preparation, revision and dissemination of operational guidelines and assessments tools; strengthening human capacity and skills; and ensuring that all products, and efforts, would lead to the integration of nutrition within the response to the pandemic based on evidence and scientific findings. The result would be the enhancement of Member States' capacity to improve the nutritional status of HIV-infected adults and children, not only in sub-Saharan Africa but also globally.

### **3.4 WHA Resolution on HIV/AIDS, WHO, 2006**

Alarmed by the rising trend of HIV/AIDS in several countries, and recognizing that nutrition should be integrated into a comprehensive response to HIV/AIDS, the World Health Assembly passed the resolution (4) on Nutrition and HIV/AIDS and urged the member states to make nutrition an integral part of their response to HIV/AIDS by identifying nutrition interventions for immediate integration into HIV/AIDS programming

### **3.5 Norms and guidelines on nutrition and HIV/AIDS**

WHO in collaboration with UN community members has been actively engaged in developing tools and guidelines as well as supporting capacity building activities of caregivers of people living with HIV/AIDS.

#### **a. A training course- Nutritional Care and Support for People Living with HIV/AIDS**

In 2003, WHO in collaboration with the Food and Agricultural Organization (FAO) designed a training course- Nutritional Care and Support for People Living with HIV/AIDS (14). The course is for caregivers working in the community or attached to hospitals and provides knowledge about practical nutrition as well as communication skills for supporting people living with HIV/AIDS.

#### **b. Nutrition guidelines for HIV-infected women and their children in resource poor settings**

In 2004, WHO in close collaboration with UN partners has developed a module – “Nutrition counseling, care and support for HIV-infected women” Guidelines on HIV-related care, treatment and support for HIV-infected women and their children in resource-constrained settings (15). This document reviews the relationship between nutrition and HIV/ AIDS and scientific evidence on the role of nutrition in HIV transmission, disease progression, morbidity, and disease management; and makes recommendations on nutrition counseling, care and support for HIV-infected women, based on current evidence.

**c. Guidelines for improved feeding and prevention of mother-to-child transmission of HIV**

Guidelines for decision makers and health-care managers and supervisors (16,17) on issues regarding infant and young child feeding in the context of HIV were developed and widely disseminated during 2003 and 2004. Counseling aids such as flip charts, orientation and reference guides and take home flyers were produced in 2004 and 2005 for front line health workers.

**4. Response by WHO and UN community in SEARO**

In the SEA countries, the activities by WHO and UN community have focused on supporting capacity building and increasing awareness levels.

**4.1 Inter-country Training of Trainers Workshop**

WHO SEARO, along with WHO Indonesia, organized an Inter-country Training of Trainers (TOT) at Jakarta, Indonesia from 4th – 7th October, 2005 (18) so that HIV/AIDS care givers could be provided with appropriate and practical knowledge about nutrition care and support for people living with HIV/AIDS. The training also focused on developing communication skills of the caregivers so as to enable them to interact with the HIV positive persons and their family members effectively. Twenty people from government and non government organizations from India, Indonesia, Myanmar and Thailand participated in the TOT. Country action plans were formulated by all 4 countries.

**4.2 Awareness workshop in Asia pacific region**

A UNAIDS collaborative partners workshop - 'Beyond Food – The Role and Future of Nutrition in Response to HIV' was organized on 18-20 July 2006, Bangkok (19), to raise awareness of the role of food and nutrition support in HIV prevention, care and treatment for HIV infected people. The Workshop was organized in partnership amongst the WFP, Regional Bureau for Asia, UNICEF, East Asia and Pacific Regional Office, and UNAIDS regional support team for Asia and the Pacific with technical support from the Albion Street Centre, Australia. The participants included staff of national HIV/AIDS programs and UN agencies from 10 countries in the Asia region. In addition, staff from WFP and UNICEF Headquarters and the UNICEF Regional Office for South Asia participated. Six member countries ( Bangladesh, India, Indonesia, Myanmar, Nepal and Sri Lanka) from SEARO which attended the workshop identified their specific needs for Nutrition and HIV/AIDS (19).

## **5. Integration of nutrition into a comprehensive response to HIV/AIDS in the member countries of SEAR**

### **Bangladesh**

HIV/AIDS infection in Bangladesh remains at relatively low levels in most at risk population groups, with the exception of Injecting Drug Users (IDUs) where there is a recent evidence of increasing prevalence. Although national HIV prevalence remains under 0.1% amongst the general population in Bangladesh, there are risk factors that could increase the spread of HIV among high-risk groups. As of the end of 2005, UNAIDS estimated that approximately 11,000 Bangladeshi adults and children were living with HIV and AIDS (20).

A National Policy on HIV/AIDS was outlined by the Directorate of Health Services, Ministry of Health and Family Welfare in late 1996. A high-level National AIDS Committee (NAC) was formed with a Technical Advisory Committee and a National AIDS/STD Program (NASP) unit in the ministry. The Government of Bangladesh has also prepared the National Strategic Plan for HIV/AIDS for the period 2004-2010 under the guidance of NAC. More than 380 NGOs and AIDS Service Organizations have been implementing programs/projects in different parts of the country (20).

In the UNAIDS collaborative workshop (19), Bangladesh identified nutrition and HIV/AIDS specific needs as follows:

- development of operational national guidelines for nutrition and HIV, and assistance with building capacity to implement them.
- help with situation analysis—understanding what the needs are of PLHIV
- training on PMTCT, ART and Nutrition, HIV and infant feeding for health care workers
- monitoring and evaluation for nutrition and HIV interventions.

A Nutrition policy workshop has recently been organized in Bangladesh supported by WFP and other UN agencies. The participants included officials from Government of Bangladesh, UN family and community based organizations. The aim of the workshop was to strengthen advocacy for the role of nutrition interventions as part of HIV prevention and care, support and treatment and to develop initial plans for implementing HIV nutrition intervention partnership programs (21).

### **Bhutan**

HIV/AIDS infection is at a very early stage in The Himalayan Kingdom of Bhutan. There is increasing cross-border migration and international travel, combined with behavioral risk factors of the population. All this mean that Bhutan could face rapid growth of HIV. UNAIDS estimates that about 500 people could have been living with HIV at the end of 2005. Among the cases reported between 1993 and 2002, heterosexual sex was the primary mode of transmission. People living with HIV in Bhutan come from

diverse occupational backgrounds. They are farmers, government servants, and female sex workers, in addition to those returning from other countries. Half the infections are reported from Thimphu, the capital, and Phuentsholing, a bustling commercial town bordering the Indian state of West Bengal (20).

HIV/AIDS prevention activities have been initiated very early in the country by the Royal Government of Bhutan. In 1988, five years before the first HIV infection was detected in the country, the Royal Government established a National HIV/AIDS and STD Control Program (NAP). The program is run by the Ministry of Health. Bhutan has demonstrated a strong political commitment to preventing and controlling the spread of HIV. Although local NGOs are nonexistent, Bhutan has civil society organizations, such as religious bodies and youth groups which have an important role to play in HIV prevention and care (20).

*Information on Nutrition activities regarding HIV/AIDS not available for Bhutan*

### **DPR Korea**

*No HIV/AIDS cases have been reported from DPR Korea.*

### **India**

India, the world's second-most populous country, has multiple and diverse HIV epidemics. National adult HIV prevalence in India is approximately 0.36%, which corresponds to an estimated 2 million to 3.1 million people living with HIV in the country (22,23). While overall, the HIV epidemic shows a stable trend in the recent years, there is variation between states and population groups. About two thirds of reported HIV infections have been in six of the country's 28 states—mainly in the industrialized south and west and in the north-eastern tip(23). The highest prevalence rates are found in the Mumbai-Karnataka corridor, the Nagpur area of Maharashtra, the Nammakkal district of Tamil Nadu, coastal Andhra Pradesh, and parts of Manipur and Nagaland (in the north-east of India) (6,24,25). In Tamil Nadu and other southern states with high HIV burden where effective interventions have been in place for several years, HIV prevalence has begun to decline or stabilize. However, HIV continues to emerge in new areas. There are selected pockets of high prevalence in the northern states and include 29 districts with high prevalence, particularly in the states of West Bengal, Orissa, Rajasthan and Bihar(22).

The National AIDS Control Organization (NACO) established in 1992, under Ministry of Health and Family Welfare (23), formulates policy and implements programs for prevention and control of HIV/AIDS in India. NACO coordinates and manages the National AIDS Control programme (NACP). At the state level, the state governments have established State AIDS Control societies for effective management and implementation of National AIDS control Programme at the state level. First two phases of NACP have been completed and the third Phase of the NACP III (2007-2012), being developed now will place the highest priority on preventive efforts, while at the same time seeking to integrate prevention with care, support and treatment. According to

NACP III plans, there will be investment in community care centers to provide psycho-social support, outreach services, referrals and palliative care to PLWHA (23).

In the UNAIDS collaborative workshop (19), India identified nutrition and HIV/AIDS specific needs as follows:

- Share all guidelines manuals on nutrition and HIV
- Make available funding for technical assistance on research and capacity building.

The National guidelines on Infant and Young Child feeding by Department of Women and Child Development, Ministry of Human Resource Development were revised in 2004 and are based on WHO Global strategy on IYCF and incorporate feeding options for HIV infected women (26).

India has many international and national organizations including UN agencies, NGOs and CBOs working on HIV/AIDS. Many collaborative activities have been observed in addressing HIV/AIDS and some of the organizations have partnered with the government to initiate projects on Nutrition and HIV/AIDS. These are briefly listed as follows:

- *WFP*

The first national consultation on Nutritional Security and the Prevention, Treatment and Mitigation of Tuberculosis and HIV/AIDS was organized jointly by WFP, the M.S. Swaminathan Research Foundation, the NACO and the National Commission on Farmers on December 2 and 3, 2004. WFP and Government of India signed a Memorandum of Understanding in which WFP will provide technical expertise in a three-year project that uses food in a variety of ways to encourage prevention, care and support of people living with HIV and AIDS as well as the treatment of opportunistic infections like tuberculosis (27).

As part of its efforts to increase the quality of life and life expectancy of people living with HIV/AIDS, in March 2007, the Tamil Nadu Government in partnership with the WFP launched the free nutritional supplement support programme known as "Nutriplus programme" (28). In this programme, nutritional support would be provided to people living with HIV/AIDS registered at all 15 Anti-retroviral Therapy (ART) centres in Tamil Nadu. In addition, five more ART centres would be opened up. Nutrition interventions of the programme include free nutritional supplements and nutrition counseling to HIV people with case specific advice to people such as pregnant women. The programme is estimated to benefit over 13,000 people living with HIV/AIDS (28).

In March 2007, NACO approved a programme to provide nutritional supplement to children enrolled under their ART programme in the country. Under this programme, fortified powdered supplements would be provided free of cost to children receiving ART (29). The programme aims at partially meeting the nutritional needs of over 3000

children currently enrolled under the ART programme in the country. The programme has been undertaken in collaboration with technical support from several international agencies including Clinton Foundation and WFP.

- *Children's Investment Fund Foundation (CIFF)*

In March 2005, Children's Investment Fund Foundation (CIFF) awarded funding to Tamil Nadu AIDS Control Society (TANSACS) to expand antiretroviral treatment to 1000 parents/family members and care and support (including nutrition support) to 4000 parents/family members of HIV infected and affected children to prevent children being orphaned in the State of Tamil Nadu. TANSAC has collaborated with SAATHII (Solidarity and Action against the HIV Infection in India) (30) to seek support on technical, operational and logistical areas in implementing the project. The programme is implemented through three family-centered continuum of care and ARV treatment programs through existing government services ( 3 hospitals) in equal partnership with NGOs, CBOs and Positive Networks to provide a comprehensive range of HIV/AIDS care, support and treatment services including nutrition services.

- *Family Health International*

Since early 2007, Family Health International is leading a collaborative five-year, project to support children and families affected by HIV/AIDS in Andhra Pradesh, India. The *BalasaHYoga* program ("active support to the child" in Hindi) will expand comprehensive, integrated HIV care, support and treatment services in all of the state's 23 districts (31). BalasaHYoga is funded jointly by the Children's Investment Fund Foundation (CIFF), the Elton John AIDS Foundation, and the Global Fund to Fight AIDS, TB and Malaria (GFATM), in partnership with the National AIDS Control Organization and the Andhra Pradesh State AIDS Control Organization. BalasaHYoga plans to provide 30,000 households affected by HIV (including 60,000 children and 60,000 adults) with quality medical care, psychosocial support, nutrition and educational support, shelter, economic strengthening and legal assistance (31).

- *Y R Gaitonde Centre for AIDS Research and Education*

Y R Gaitonde Centre for AIDS Research and Education (YRG CARE), a non-profit referral centre in Chennai, Tamil Nadu, provides prevention, care, treatment and support services to people living with HIV/AIDS and their families (32). YRG offers HIV voluntary counseling for clients, couples, and families; nutrition counseling; inpatient and outpatient care, including treatment for opportunistic infections; and home care. Nutritional counseling includes nutritional assessment and development of individualized diet plans. It is highly specific depending on the health and socioeconomic condition of the persons. Practical information with regard to diet, food habits, locally available food and hygiene is stressed (33).

The Tuberculosis Research centre (Indian Council of Medical Research), Chennai, in collaboration with the WFP, India, has recently conducted a study (34) to assess the impact of Nutrition Supplementation on weight and body mass of HIV+ individuals in Tamil Nadu. The study found that after 6 months of nutritional

supplementation, there was a significant increase in weight, BMI and Mid Arm Circumference of HIV+ intervention group. CD4 cell count remained unchanged in the intervention group but decreased significantly in controls without nutritional supplementation. This shows that nutrition supplementation in PLWHA could improve nutritional status and delay progression of HIV disease.

## **Indonesia**

Indonesia has the fastest growing epidemics in the Region, although the aggregate national HIV prevalence is still very low, the disease has spread to all of the country's 33 provinces (35). The last quarterly report (35) from the MOH (June 2007) revealed that 6 leading provinces in the number of AIDS cases are: Jakarta, Papua, West Java, East Java, Bali and West Kalimantan, with 7281 AIDS cases out of total 9689 cases (75%). About 48% of drug users in Jakarta and up to 23% of sex workers in Papua are infected and HIV continues to increase among this high risk group (7). In Indonesia about 170 000 [100 000–290 000] adults were living with HIV in 2005 (6). The result of IBBS done in Papua, 2006 revealed that HIV prevalence was 2.4% (2.9% among male and 1.9% among female), meaning that Papua is now entering the generalized epidemic (36).

The National AIDS Commission was established by Government of Indonesia in 1994 to response to the HIV epidemic in the country. By the end of 2004, Provincial AIDS Commissions had been set up in all of the country's provinces and few districts, The Indonesia HIV/AIDS Prevention and Care Project (IHPCP), a partnership between the Government of Indonesia and the Government of Australia, has been working since 1995 to reduce the spread and impact of HIV/AIDS in Indonesia. Working with Indonesia's National AIDS Commission, IHPCP is implemented both at the national level and in six provinces Bali, South Sulawesi, East Nusa Tenggara, DKI Jakarta, West Java and Papua (37).

In the UNAIDS collaborative workshop (19), Indonesia identified nutrition and HIV/AIDS specific needs as follows:

- Advocacy by the NAC on nutrition and HIV, and coordination at national level
- Technical assistance to the MOH on Nutrition and HIV/AIDS and PMTCT
- Coordination and access to funding for pilot activities. Indonesia has taken several steps to incorporate nutrition into HIV/AIDS programming and policies.

A policy for nutrition and HIV/AIDS has been incorporated into National Policy of HIV/AIDS (37). In 2004, Ministry of Health also developed National Guidelines for Care Support and Treatment for People Living With HIV/AIDS (PLWHA), where Nutrition is a part of the guidelines (38).

In December 2006, Ministry of Indonesia recommended to adapt and translate WHO training modules for use by different categories of expertise (doctors, specialists in clinical nutrition, nurses, midwives and social workers/NGOs) providing care and support to PLWHA. This was suggested as a follow up of the WHO inter country workshop on

nutrition care and support for PLWHA held in Jakarta in October 2005. Subsequently following Training modules have been developed by Ministry of Health, Indonesia (39):

- a. Nutritional Care and Support for PLWHA (2006) which was adapted and translated from WHO modules.
- b. Management of Severely Malnourished Children (2000), adapted and translated from WHO, also used as standard operational procedure for children with malnutrition including the ones caused by HIV/AIDS.
- c. Care Support and Treatment for PLWHA in the hospital (2004), adapted and translated from WHO modules.
- d. Nutrition care and education for hospital nutrition staffs (2005), initiated by Indonesia HIV/AIDS Prevention and Care Project (IHPCP/AusAID) in two hospitals.

Other nutrition actions by Ministry of Health, Indonesia include distribution of Food supplementation packages to PLWHA in 17 provinces, supported by Global Fund during 2006-2007.

Indonesia also identifies certain challenges or constraints to operationalize identified actions to incorporate nutrition into HIV programmes and policies: These are (39):

- The prevalence of HIV/AIDS cases in Indonesia increased sharply both in urban and rural areas, spread to all 33 provinces which calls for intensification of activities
- Nutrition intervention is not yet well recognized as a part of HIV/AIDS management among policy makers, program managers and most health providers, which causes less attention for the implementation in health services.
- The Guidelines, Modules and Standard for nutrition care for HIV/AIDS patient in the hospital have not yet been developed nationally, these have been just field-tested in 2 hospitals.
- Limitation of funds to conduct nutrition training for providers and PLWHA.
- Food supplementation packages to PLWHA are no longer distributed due to limitation of funds.
- Lack of coordination among stakeholders working in HIV/AIDS activities .

In order to overcome those challenges for operationalizing the identified actions, Indonesia has identified certain needs such as (39):

- strong support and commitment from Government and National AIDS Commission on the important role of nutrition to improve the quality of life of PLWHA.
- Strong coordination within MOH and among related Ministries by building networking system and legitimated by Ministerial decree.

- Ministry of Health to develop National guideline and training module, standard of Nutrition care for HIV/AIDS patients in the hospital and its implementation with support from WHO, UNICEF and other Donor Agencies.
- Review and analysis to be conducted before continuing food supplementation distribution.

Yet many opportunities exist for operationalizing identified actions such as (39):

- a. There are 237 referral hospitals for care support and treatment of HIV/AIDS patients which gives an immense outreach to address nutrition to HIV/AIDS people.
- b. The establishment of mailing list through internet Net-working which is coordinated by Secretary of HIV/AIDS Working Group in MOH, can be used as a linkage for information sharing.
- c. There are many national and international NGOs working in the field of HIV/AIDS in Indonesia.
- d. Socialization and information dissemination of Nutrition Care for PLWHA in the National Congress and scientific meetings of professionals.

IHPCP, in one of its current projects in Jakarta and Makassar, in South Sulawesi has incorporated nutrition intervention as part of HIV programming. It has included HIV nutrition advocacy, health and community workers and peer based nutrition education through the involvement of local CBOs (21).

## **Maldives**

Maldives already has a massive epidemic of drug users among the youth and could have a high rate of HIV epidemic among IDUs in the future if adequate measures are not taken urgently (7).

The Maldives started its AIDS Control Program in 1987, four years before the first domestic HIV case was reported. The Program is coordinated by the National AIDS Council, a multisectoral body with representatives from various ministries and NGOs. Activities include public education, peer education, awareness creation workshops, blood-product screening, and care of HIV/AIDS patients. Condoms are widely accessible on main islands, and nearly 99% of all households are aware of HIV/AIDS (20).

*Information on Nutrition and HIV/AIDS activities not available in Maldives*

## **Myanmar:**

In **Myanmar** there are early indications that the epidemic might be diminishing (6). HIV infection levels have declined among pregnant women (1.3% in 2005, down from 2.2% in 2000) (6) and among men seeking treatment for other sexually transmitted infections (from 8% in 2001 to 4% in 2005) (National AIDS Programme Myanmar, 2005). Nevertheless, the country is experiencing a serious epidemic, with an estimated 360 000 [200 000–570 000] people living with HIV at the end of 2005, and national adult

HIV prevalence of approximately 1.3%. HIV prevalence of 2.2% among young people (15–24 years of age) in 2005 is a cause for serious concern (6).

Myanmar government has formed a National AIDS Committee (NAC) responsible for HIV/AIDS activities in the country. This committee guides the National AIDS Control Programme (NAP). The NAP in Myanmar supports a broad range of programmes in five areas: assessment (sentinel surveillance), advocacy, education, prevention (promotion of condom use, prevention of mother-to-child transmission), and care and support (counseling and treatment) (39).

In the UNAIDS collaborative workshop (19), Myanmar identified nutrition and HIV/AIDS specific needs as follows:

- Technical support to review the policy of infant feeding
- Capacity building on HIV/nutrition related fields
- Financial support
- Joint pilot proposal by NAP, UNICEF, WFP on food aid to PLWHA (recovering TB, ART, and PMTCT)

Myanmar government has identified certain actions for integrating nutrition into HIV/AIDS policies and programmes. National Nutrition Center, Department of Health and National AIDS Programme have identified Home based care for HIV/AIDS including nutrition component and feeding, counseling and nutrition care for mothers and children (39).

A Training of trainers on “HIV and Infant feeding” at PMCT sites has been organized in 2005 (39).

The Ministry of Health in collaboration with WHO conducted a “National Workshop on Nutritional Care and Support for People Living with HIV/AIDS” from 8-10 May 2006 (40). This was done as a follow up of the WHO inter country workshop on nutrition care and support for PLWHA held in Jakarta in October 2005. The nodal agencies for conducting the training were National AIDS Programme and National Nutrition Center, Department of Health. Twenty five participants from various programmes/departments participated in the training. At the end of the workshop, action plans were developed by these departments for conducting trainings in their work places (40).

Subsequently, a Training for trainers workshop on Nutrition care of HIV/AIDS was organized in 2006 . The trainees included Medical officers from Nutrition Department, Assistant Director from National AIDS Program, Members from NGOs and Paediatricians (39). After the training, the core group developed the modules and translated into local language for basic health staffs.

Nutrition related activities in Myanmar mainly take place in prevention of mother-to-child transmission (PMTCT) programmes being implemented by the NAP, and supported by UNICEF and UNAIDS. Currently 36 PMTCT institutions are functioning nationwide. The PMTCT mothers receive nutrition counseling on breastfeeding and infant nutrition (41).

In 2005, WFP-Myanmar initiated a programme to target food aid to PLWHA. Since 2004, WFP has been providing food aid for the Home-based Care (HBC) Programme in one area, which is a dry zone where malnutrition and HIV/AIDS are both highly prevalent. WFP provides family rations to around 400 beneficiary households that care for at least one chronically ill person, most of whom are HIV/AIDS patients and/or patients with tuberculosis precipitated by HIV/AIDS. Recently WFP further extended its food aid for HIV+ people in partnership with international non-governmental organizations. It provides individual rations to HIV+ patients who attend HIV clinics operated by Médecins Sans Frontières Holland in two states (out of 14 states and divisions) of Myanmar (41).

Myanmar has just completed a “Study of Infant feeding practices among mothers of children below two years, in a rural and an urban area. The objective of the study was to explore the feeding options to HIV infected women in Myanmar in order to adapt WHO/UNICEF/UNAIDS global HIV and infant feeding guidelines and develop replacement feeding guidelines for Myanmar (39). After analyzing the study findings, the proposed guidelines on feeding options, for infants of HIV infected mothers, are: For 0-6 months old: 1) Safer Breastfeeding (2) Heat treated expressed breast milk (3) Modified cows, goat milk (4) Commercial infant formula (5) Dried milk powder and evaporated milk

For 6-12 months old: (1) Breast milk should normally be an important component of the diet and infant who is not breastfed needs replacement feeding which provides all the required nutrients.  
(2) Offer variety of foods e.g. meat, fruits, vegetables. Feed at least 2-3 meals and 1-2 times snacks/day.

The challenges which remain in operationalizing actions in Myanmar are co-operation, collaboration with other related sectors, NGOs and INGOs for conducting the nutrition activities as an integral approach of other intervention programs (39).

Myanmar government faces constraints like limited resources in terms of man, money and materials to conduct trainings and develop training materials (39).

The need to overcome these challenges is to develop training materials, references or manuals on nutrition care for HIV people based on life course approach. These materials need to be translated in simple language including cooking demonstration for basic health staff. WHO, UNICEF, and other NGOs can support at trainings and development of training and IEC materials (39).

## Nepal

Nepal reported its first case of AIDS in 1988. Since then, the numbers have risen among the country's 27 million people. By the end of 2005, more than 950 cases of AIDS and over 5,800 cases of HIV infection were officially reported, with three times as many men reported to be infected as women. However, given the limitations of Nepal's public health surveillance system, the actual number of infections is expected to be much higher. UNAIDS estimates that 75,000 people were living with HIV at the end of 2005. It is considered to have a concentrated epidemic in populations with high-risk behaviors with IDUs having the highest rates of HIV infection (7).

The main governmental agency responsible for HIV/AIDS and STD is the National Center for AIDS and STD Control (NACSC) under the Ministry of Health and Population. The NACSC has developed a National Strategy on HIV/AIDS which identifies actions to respond to the emerging problem of HIV/AIDS. In the UNAIDS collaborative workshop (19), Nepal identified nutrition and HIV/AIDS specific needs as follows:

- National stakeholders workshop including UN technical group on HIV and UN theme group as well as other potential organizations to develop consensus on whether nutrition is a priority (or not)
- To put interventions in the National Strategy Plan
- Form a steering committee comprised of nutrition and HIV technical working members to identify priority areas of work and prepare an action plan, and to
- explore possibilities of assistance from insiders and outsiders including technical and financial.

Nepal has taken several steps to incorporate nutrition into HIV/AIDS programming and policies (39) as follows:

The national strategy on HIV/AIDS for 2006-2011 emphasizes the importance of nutrition for HIV/AIDS. The National Action Plan 2006-2008 mentions nutrition support in the two areas: Under community and home based care it mentions palliative care, nutritional and social support to PLHA through community support groups. Under impact mitigation, it includes, nutrition supplementation programme for people under ART (50% of all people are on ART) and schooling and nutrition support to children of infected and affected families and other disadvantaged communities.

A training manual on community and home based care has been developed which contains sessions on nutrition and HIV/AIDS and nutrition and exercise (39).

A National Nutrition Policy was developed in Nepal in 2004(42). One of its objectives (objective 12) addresses HIV transmission through breastfeeding and states - reduce the risk of death or malnutrition by HIV transmission through BF of infant through following actions:

- Increase awareness
- Develop guidelines on HIV and BF
- Improve nutritional status of positive infants
- Reduce % of infant infected through BF
- Improve % of positive mothers with access to counselling

However, some of the challenges/constraints to operationalize actions for incorporating nutrition into HIV/AIDS are that proper operational guidelines for Nutrition and HIV have not been developed, although activities are going on, either through cash or kind support (39). HIV affected and infected population faces financial constraints and National Action plan can not fully meet this need of the population.

The needs recognized to overcome those challenges for operationalizing the identified actions include development of technical/operational guidelines (39).

Nepal faces many opportunities for operationalizing identified actions to incorporate nutrition into HIV/AIDS. Several private and voluntary organizations including positive people's networks implement HIV/AIDS activities funded by donors (39). There are currently almost 100 NGOs working in the area of HIV/AIDS. NANGAN, a consortium of NGOs in Nepal, is working to coordinate and share information, education, and communication materials, experiences, and lessons learned (20).

The plans to operationalize the identified actions include formation of a technical working group with members from various sectors ( such as Child Health Division /Nutrition, NCASC – MoHP, UN partners, EDPs, INGOs & NGOs & Civil societies) and development of detailed Plan of Action including technical guidelines and training materials (39).

Family Health International in Nepal has done a nutrition specific needs analysis with 4 of its main partners in Kathmandu to include nutrition as part of HIV/AIDS . Some work has been completed in terms of resource development for PLHIV on specific symptom management, food hygiene and basic food security (21).

## **Sri Lanka**

According to UNAIDS (6), **Sri Lanka** has a relatively small number of people living with HIV—about 5,000 adults. Since 1986, only 712 cases have been officially reported, with underreporting mainly due to limited availability of counseling and testing, fear associated with seeking services and the stigma and discrimination associated with being identified as HIV positive. In Sri Lanka, the main risk groups are sex workers and their clients and MSM (6,7).

In 1992, the Government of Sri Lanka initiated HIV prevention and control efforts through the National STD and AIDS Control Program (NSACP) of the Ministry of Health. The NSACP in collaboration with the Provinces has made remarkable progress in

institutionalizing HIV prevention activities and in providing care and treatment to people living with HIV (20).

Work of both local and international NGOs in the area of HIV/AIDS prevention in Sri Lanka has been limited. Efforts are being undertaken to improve NGO collaboration and coordination with the government. Key actions needed are to increase the capacities of NGOs to work with vulnerable groups and of the government to systematically contract and fund NGOs (20).

In the UNAIDS collaborative workshop (19), Sri Lanka identified nutrition and HIV/AIDS specific needs as follows:

- there should be a plan to have existing or new guidelines with different recommendations for high and low HIV impact/prevalence, and by food insecurity categories (into quadrants)
- the global guidelines should match with local needs and need to be relevant
- electronic system to exchange information on bodies of evidence related to nutrition in HIV
- an expert from the Asian region to dialogue with the government and help with capacity building (building nutrition into HIV strategy, training in needs assessment and how to do training of stakeholders at different levels).
- assistance to link PMTCT into education of MCN beneficiaries.

*Information on Nutrition activities regarding HIV/AIDS not available for Sri Lanka*

## **Thailand**

**Thailand** is among the few countries in the world to have turned around a rapidly increasing prevalence of HIV/AIDS. The number of estimated new HIV infections decreased from 140 000 per year in 1991 to 17 000 in 2005(6).

However, a large percentage (43%) of new HIV infections is occurring in low risk heterosexual population (43). According to Ministry of Public Health, about one third of new infections in 2005 were in married women who were probably infected by their spouses. In Thailand, an estimated 580 000 [330 000–920 000] adults and children were living with HIV at the end of 2005 (6).

The first case of AIDS in Thailand was diagnosed in 1984. In response to the problem, Thailand became the first country in Asia to set up a National AIDS control programme (NACP) and a medium-term plan was devised for 1989-1991(44). The first National AIDS Plan (1992-96) was developed and formally integrated into Thailand's five-year development plan. The plan was given a multisectoral focus expressing an understanding that the AIDS epidemic was bound up with the broader social and economic development of the country. The 2002-2006 National HIV/AIDS Plan has emphasized the participation of individuals, families and communities in HIV/AIDS prevention and alleviation; the support to be extended to them by health and social

welfare services; the development of knowledge and research; international cooperation; and integrated management of HIV/AIDS prevention and care (44,45).

In Thailand, HIV/AIDS programme is under the Department of Disease Control and no specific actions for integrating nutrition into comprehensive response to HIV/AIDS have been identified by concerned National authorities (39). Bamrasnaradura Infectious Diseases Institute, a large and reputed institute in the country provides individual nutrition counseling for the HIV-patients who have weight loss and malnutrition problems (39).

The Ministry of Public Health, Thailand, in collaboration with WHO organized a training workshop on Nutrition for care and support for PLWHA from June 27-29, 2006 (40). This was done as a follow up of the WHO inter country workshop on nutrition care and support for PLWHA held in Jakarta in October 2005. Nineteen participants from various department attended the training course.

Specific guidelines for nutritional care of individuals for programme implementation at the health-facility have been developed by Nutrition Division, Department of Health (39).

Only capacity and skills in Nutrition for care givers research have been developed. Existing interventions such as Baby-friendly Hospital Initiative programme, Breast feeding support in the care and support of HIV infected mothers have been undertaken by Bureau of Health Promotion, Department of Health. Nutrition indicators have been incorporated into HIV/AIDS monitoring and evaluation plans including BMI and Energy and essential nutrients requirement (39).

The Thai-Australian Collaboration in HIV Nutrition (TACHIN) project is a large project currently being implemented at the Thai Red Cross in Bangkok. TACHIN is a collaborative project between the Thai Red Cross AIDS Research Centre, Institute of Nutrition, Mahidol University and the Albion Street Centre, Australia. Its objectives are to develop the capacity of project partners to promote, develop, implement and evaluate nutritional strategies to address the needs of PLWHA in Thailand. The project provides many nutrition interventions such as nutrition assessment, nutrition counseling, community based initiatives, nutrition education for health and community workers and operational research (19).

Many research studies on Nutrition and HIV/AIDS have been conducted in Thailand in the last few years. Nutrition Division, Department of Health conducted a study of nutrition promotion for Asymptomatic and Early symptomatic HIV patients in 2001 (39).

Some other studies are summarized below:

A study to assess the body composition in adults infected with HIV in Khon Kaen, Thailand was undertaken by Tufts-New England Medical Center, Boston, Massachusetts (46). The study examined an association of nutritional status with active opportunistic infections (AOIs)/HIV status and assessed degree of correlation between bioelectrical impedance analysis (BIA) and anthropometry. The findings showed that many patients (41.3%) were malnourished using World Health Organization criteria for underweight,

and malnutrition was associated with AOI status. Body fat composition from BIA, anthropometry, and body mass index were moderate to highly correlated ( $P < 0.001$ ), with the highest correlation between BIA and subscapular skinfold ( $r = 0.86$ ) and the lowest between BIA and triceps skinfold ( $r = 0.54$ ).

A comparative study of the growth and clinical manifestation between infected and uninfected HIV infants of HIV + mothers was carried out by Pediatrics Division, Lampang Hospital, Thailand (47). The results showed that the infected infants showed signs of malnutrition. From 2-4 months of age, the averages of their weights and heights were lower than those of non-infected infants. Abnormal clinical signs were found in most infected infants by the time they were 9-12 months old. In conclusion, for the infants born to HIV- infected mothers, monitoring signs and symptoms including their weight and height from birth till 9-12 months old, is predictive of the infectious status of most infected infants.

A study was conducted by University of New South Wales, Australia to understand the knowledge and attitudes towards infant feeding among women with HIV infection in northern Thailand (48). The study found that all women, regardless of HIV status, consider breastfeeding to be more advantageous than formula feeding. However, once women with HIV infection are informed of the risk of HIV transmission through breastfeeding, they are able to make their own decision to follow the Thai Ministry of Public Health's recommendation to formula feed.

The study group at Beth Israel Deaconess Medical Center, Boston, examined the diarrhea disease in patients infected with human immunodeficiency virus in Bangkok, Thailand (49). It was found that patients with diarrhea appeared to have more advanced disease by CD4 cell counts and complained more frequently of symptoms such as anorexia, gas, and bloating than patients without diarrhea. Patients with diarrhea had a tendency toward a lower nutritional status, as measured by body mass index and mid arm circumference. It was not possible to identify a pathogen in 73% of the patients with diarrhea and 75% of the patients without diarrhea, suggesting that additional agents or factors may be responsible for the diarrhea symptoms in the patients with diarrhea.

Nutrition Research Centre, Chiang Mai University, Thailand conducted nutrition assessment to study the prevalence of hospital malnutrition in children aged 1-15 years in a pediatric ward and found it to be similar (50-60%) to that of a study conducted 10 years earlier (50). In another study of micronutrients in 45 pediatric AIDS patients (aged 3-46 months), high prevalence of malnutrition, anemia and mineral deficiencies were found. The study suggests that nutritional status must be assessed in all hospitalized patients. At the very least, weight and height (length) should be obtained.

A Randomized Trial to examine the impact of high-dose multiple micronutrient supplementation on mortality among HIV-infected individuals in Bangkok was conducted by the Department of Infectious and Tropical Diseases, London School of Hygiene and Tropical Medicine (51). The study found that the death rate was lower in the micronutrients arm with the mortality hazard ratios of 0.53 overall and 0.37 among those with CD4 cell counts  $< 200 \times 10^6/l$  and  $< 100 \times 10^6/l$  respectively. Multiple

micronutrient supplementations may enhance the survival of HIV-infected individuals with CD4 cell counts  $< 200 \times 10^6/l$ .

### **Timor Leste**

The prevalence of HIV/AIDS in Timor Leste is very low ( $<0.1\%$ ). Based on the reported figures from Ministry of Health (MOH) system, in 2006, there were only 43 cases of HIV positive and 11 people died from AIDS. Although the country has low prevalence, it remains at high risk of HIV infection. HIV risk is framed by the development challenges the nation faces as well as the behavioral, social, and cultural factors. There are several vulnerability factors present in the country which make the population at risk of developing HIV. Some of these factors are poverty, low literacy levels and social upheavals. Poverty limits employment options (*e.g.* leaving some women little choice but to engage in sex work, placing them at higher risk of HIV infection), and limits access to the means of protection (*e.g.* ability to negotiate the use of condoms and pay), among other consequences. Low literacy makes it more difficult to promote knowledge regarding HIV prevention and challenge misconceptions. Social upheaval, often leading to significant population dislocation, undermines established community, family and peer support structures as well as social/cultural norms and values. All of these vulnerability factors and others are present in Timor-Leste (39).

More immediate determinants of HIV risk are also present in Timor-Leste. There is a significant level of sexual partner change, particularly among some population groups. Young people who are entering the ages of sexual initiation form a big proportion of the total population. There are high rates of Sexually Transmitted Infections (STIs) among most at risk groups (particularly sex workers and Men who have Sex with Men (MSM)). Condom use is low across the population (39).

Timor-Leste established National AIDS Commission (NAC) in 2003 under the chairmanship of MOH. The main role of NAC is as an advisory body and it also has a coordination mechanism of sharing information with other ministries, agencies and NGOs including faith-based organizations implementing the HIV/AIDS in the country. Currently, the MOH is the Principle Recipient for HIV/AIDS programme funded through Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) from 2007-2012 (39).

A National Strategy for HIV/AIDS and STIs for Timor-Leste for 2006-2010 was developed by MOH in collaboration of the broader stakeholders. The overall goal is “to maintain Timor-leste as a low prevalence HIV nation and minimize the adverse consequences for those infected with HIV”<sup>1</sup>. Thus, the strategy focuses on: 1) prevention and education 2) voluntary counseling and testing (VCT) 3) multi-sectoral action 4) clinical services.

In Timor-Leste, integration of nutrition and HIV/AIDS programme is not recognized as a priority at this stage. One of the main reasons is that HIV/AIDS prevalence is very low.

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<sup>1</sup> Ministry of Health Timor-Leste; “National HIV/AIDS/STIs Strategic Plan 2006-2010”, Ministry of Health Timor-Leste, 2006

A separate national policy and strategy for both Nutrition and HIV/AIDS exist. However, integration of nutrition in care, support and treatment of HIV/AIDS is not recognized in any of the policy/strategy. Limited resources such as financial, funding and human resources remain some of the constraints for integration of nutrition into HIV/AIDS programming (39).

In early February 2007, Ministry of Health in collaboration with Timor-Leste Assistencia Integrado de Saude (TAIS), a USAID funded organization, UNICEF, Alola Foundation and WHO organized a 4 days workshop on Infant and Young Child Feeding (IYCF). As a result, a draft of the Guidelines for Infant and Young Child Feeding was developed which included feeding for mother with HIV/AIDS (39).

In addition to this, trainings have been conducted for master trainers and the counselors by an expert from International Baby Food Action Network (IBFAN) in India. The training focused on three important topics: breast feeding, complementary feeding and feeding for mother with HIV/AIDS. It is hoped that similar training will be expanded and implemented to mothers at the community level through existing networks (health staff (counselors), volunteers and mother support groups) (39).

Some of the suggestions provided for integrating nutrition into comprehensive response to HIV/AIDS in Timor Leste are (39):

1. Advocate the political/decision makers in different sectors, particularly in health sector of the importance of integrating nutrition programme into a comprehensive HIV/AIDS programme.
2. Create linkages and coordination mechanism between the Nutrition Unit and the HIV/AIDS Unit of the MOH at operational and functional levels.
3. Incorporate issue of integration of Nutrition and HIV/AIDS programme in the upcoming revision or new policy and strategies for Nutrition and HIV/AIDS.
4. The national HIV/AIDS programme in the country is currently funded by the Global Fund to fight AIDS, Tuberculosis and Malaria (GFATM) for five years (2007 to 2012). If the number of PLWHA can be identified, there might be a need to include the nutrition into the HIV/AIDS programme for the second phase programme (Year 3 to 5) with a sound technical justification to the GFATM.
5. Identify PLWHA as one target groups for food supplementation programme based on government guidelines/approval.
6. Promote and strengthen multi-sectoral response to nutrition and HIV/AIDS programme between sectors: health, agricultural, health, social services, education, social services, water and sanitation and nutrition services.
7. Conduct research study on supplementary feeding package for PLWHA in Timor-Leste.
8. Develop special formula rich in macro and micronutrients for PLWHA.
9. Conduct meetings involving experts and key players in Nutrition and HIV/AIDS programmes to develop and agreed upon indicators for measuring integration nutrition into HIV/AIDS programme and impact of nutrition interventions.

## **6. Way Forward for integrating Nutrition into HIV/AIDS:**

The situation analysis reveals efforts made by member countries in incorporating nutrition into HIV/AIDS in the recent years. All the member countries are at varying stages of incorporating nutrition interventions into HIV/AIDS- ranging from advocacy level to implementation of programmes. However, still much needs to be done before the member countries can fully incorporate nutrition into care, support and treatment for HIV-infected and affected families.

## References

1. Consultation on Nutrient Requirements for people living with HIV/AIDS, WHO, 13-15 May 2003
2. UNAIDS 2006 Report on the global AIDS epidemic A UNAIDS 10th anniversary special edition Executive summary
3. Consultation on Nutrition and HIV/AIDS in Africa. Evidence, lessons, and recommendations for action, Durban, South Africa, 10-13 April 2005
4. WHA 59.11 Resolution on Nutrition and HIV/AIDS May 2006
5. UN General Assembly, High-Level Meeting on AIDS, Uniting the world against AIDS, 31 May — 2 June, 2006, United Nations, New York
6. UNAIDS *Report on the global AIDS epidemic*. Geneva, UNAIDS, 2006
7. HIV/AIDS in the South-East Asia Region, WHO, March 2007
8. Committee on World Food Security. 29<sup>th</sup> Session, Food Security & HIV/AIDS: an Update FAO, Rome, 12-16 May 2003
9. WHO Tuberculosis Fact Sheet available at: [http://searo.who.int/en/Section10/Section2097/Section2106\\_10679.htm](http://searo.who.int/en/Section10/Section2097/Section2106_10679.htm)
10. Interim Policy on collaborative TB/HIV Activities: Stop TB Department and Department of HIV/AIDS, WHO, Geneva, 2004
11. Niyongabo T.; Henzel D.; Samb B.; Larouze B.; Melchior J.; Gikoro E.; Nikoyagize E.; Aubry P. Tuberculosis, HIV and malnutrition in Burundi, *Nutrition*, Volume 13, Number 3, March 1997 , pp. 275-275(1)
12. Edimo ME, Afane Z, Zekeng L, Kembou E, Kaptue L. Tuberculosis (TB), HIV and nutrition in Yaounde - Cameroon. *Int Conf AIDS*. 1996 Jul 7-12; 11: 273 (abstract no. Th.B.4128).
13. HIV and Infant Feeding: UN Framework for Priority Action. Geneva, 2003
14. Nutritional Care and Support for People Living with HIV/AIDS- a training course by WHO and FAO, WHO, Geneva, October 2003
15. Nutrition Counselling, Care And Support For HIV-Infected Women Guidelines On HIV-Related Care, Treatment And Support For HIV-Infected Women And Their Children In Resource-Constrained Settings, WHO 2004
16. HIV and Infant Feeding: guidelines for decision makers, Geneva, WHO 2003
17. HIV and Infant Feeding: guide for health care managers and supervisors, Geneva, WHO 2003
18. Nutrition-related Care and Support for People living with HIV-AIDS- Report of an Intercountry Workshop on Training of Trainers, Jakarta, Indonesia, 3-7 October 2005, WHO SEARO
19. UNAIDS collaborative partners workshop: 'Beyond Food – The Role and Future of Nutrition in Response to HIV' Workshop Summary, 18-20 July 2006, Bangkok
20. <http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/SOUTHASIAEXT/EXTSAREGTOPHEANUT/EXTSAREGTOPHIVAIDS/0>
21. <http://www.pronutrition.org/archive/200706/msg00007.php>
22. HIV/AIDS Press release, July 6, 2007, WHO country office, India
23. [www.naco.nic.in](http://www.naco.nic.in)
24. National AIDS Control Organization (2005a). *An overview of the spread and prevalence of HIV/AIDS in India*. New Delhi, National AIDS Control Organization. Available at [http://www.nacoonline.org/facts\\_overview.htm](http://www.nacoonline.org/facts_overview.htm)
25. World Bank (2005). *AIDS in South Asia: understanding and responding to a heterogeneous epidemic*. Washington, World Bank.
26. 2004 National guidelines on Infant and Young Child feeding by Department of Women and Child Development, Ministry of Human Resource Development, India
27. <http://www.pronutrition.org/archive/200501/msg00024.php3>

28. <http://www.hindu.com/2007/03/17/stories/2007031702080300.htm>
29. <http://www.pronutrition.org/archive/200703/msg00048.php>
30. [http://www.saathii.org/events/ARV\\_010305/ARV.html](http://www.saathii.org/events/ARV_010305/ARV.html)
31. [http://www.fhi.org/en/HIVAIDS/country/India/res\\_Balasaahyoga.htm](http://www.fhi.org/en/HIVAIDS/country/India/res_Balasaahyoga.htm)
32. <http://www.yrgcare.org>
33. YRG CARE Base Model Report, Integrated Prevention, Care, and Support Services: A document produced as part of the study, "Scaling-up affordable and appropriate care and support services for people living with HIV/AIDS in South India," conducted by YRG CARE, Horizons, and the International HIV/AIDS Alliance, May 2003
34. Iliayas S., Swaminathan S., Sukumar B., Padmapriyadarsini C., Gomathy R., Karthipriya MJ., Venkatesan P., Mathew M., Narayanan PR. Impact of Nutritional Intervention on Weight and Body Mass Index of HIV Positive Individuals in Tamil Nadu, South India, Tuberculosis Research Center, ICMR, Chennai, India, 2003
35. MoH of Indonesia: Quarterly report June 2007
36. Ahnaf A, Desiar R, Riono P, Harimurti P (editors). Situation of Risky behaviour and HIV prevalence in Tanah Papua 2006 – IBBS result 2006 in Tanah Papua, MoH of Indonesia and central Bureau of Statistic of Indonesia, 2006,49
37. Indonesia HIV/AIDS Prevention and Care Project (IHPCP), Source: [www.ihpcp.or.id/](http://www.ihpcp.or.id/)
38. Personal communication with Director, Community Nutrition Directorate, Ministry of Health, Indonesia
39. Inputs provided by Health ministry through WHO country offices
40. Report of Regional Nutrition Advisor, WHO, SEARO, New Delhi
41. Thwin, Aye, A national agenda, Linking HIV/AIDS and nutrition programming in Myanmar, Nutrition Journal issue 1, September 2005, [www.nutritioninternational.org.uk](http://www.nutritioninternational.org.uk)
42. Rajendra Pant, Deputy Director, National Center for AIDS and STD Control, Nepal (power point presentation), Scientific Meeting on HIV/AIDS, Vienna, Austria, 11-13 July, 2007
43. Gouws E et al. Short term estimates of adult HIV incidence by mode of transmission: Kenya and Thailand as examples. *Sexually Transmitted Infections*, 82(Suppl. 3):iii51–55, 2006
44. External Review of Health Sector Response to HIV/AIDS in Thailand, WHO, 2005
45. Thailand's Response to HIV/AIDS-Progress and Challenges Thematic MDG Report, UNDP 2004
46. Ludy MJ, Hendricks K, Houser R, Chetchotisakd P, Mootsikapun P, Anunnatsiri S, Price E, Wanke CA. Body composition in adults infected with human immunodeficiency virus in Khon Kaen, Thailand. *Am J Trop Med Hyg*. 2005 Oct;73(4):815-9.
47. Gulgolgarn V, Ketsararat V, Niyomthai R, Junsiriyotin K, Thungjang S, Leelaporn W, Tovananutra S, Nelson K, Khamboonrueng C, Robb M. Somatic growth and clinical manifestation in formula fed infants born to HIV--infected mothers during the first year of life. *J Med Assoc Thai*. 1999 Nov;82(11):1094-9.
48. Talawat S, Dore GJ, Le Coeur S, Lallemand M. Infant feeding practices and attitudes among women with HIV infection in Chiang Rai province, northern Thailand. *AIDS Care*. 2002;14(5):625-31
49. Wanke CA, Cohan D, Thummakul T, Jongwuitiwes S, Grayson ML, Hammer SM, Hanvanich M. Diarrheal disease in patients infected with human immunodeficiency virus in Bangkok, Thailand. *Am J Trop Med Hyg*. 1999;60(5):871-4.
50. Tienboon P. Nutrition problems of hospitalised children in a developing country: Thailand. *Asia Pac J Clin Nutr*. 2002;11(4):258-62.
51. Jiamton S, Pepin J, Suttent R, Filteau S, Mahakkanukrauh B, Hanshaoworakul W, Chaisilwattana P, Suthipinittharm P, Shetty P, Jaffar S. A randomized trial of impact of multiple micronutrient supplementation on mortality among HIV-infected individuals living in Bangkok. *AIDS*. 2003 Nov 21;17(17):2461-9.