

REPORT ON THE TBCTA TEAM VISIT TO CAMBODIA

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LIST OF ACRONYMS

ADB	Asian Development Bank
ADD	Accelerated District Development
AIDS	Acquired Immune-Deficiency Syndrome
ALA	American Lung Association
ANC	Antenatal care
ANE	Asia Near East Bureau
APASCO	Asia Pacific Council of Aids Services
ARO	Asia Regional Office
ATS	American Thoracis Society
AusAid	Australian Agency for International Development
BCC	Behavior Change Communication
CA	Cooperating Agency
CARE	Care International
CDC	Centers for Disease Control and Prevention
CDC	Communicable Disease Control Department of MoH
CDHS	Cambodia Demographic Health Survey
CENAT	National Anti TB Center
CMS	Central medical Stores
CoCom	Coordinating Committee
COPE	Client Oriented and Provider-efficient
CPA	Complementary Package of Activities
CSW	Commercial Sex Worker
DFID	Department for International Development (UK)
DHF	Dengue Hemorrhagic Fever
DHMT	District Health Management Team
DHS	Demographic and Health Survey
DOTS	Direct Observed Treatment Short-course
EPI	Expanded Program of Immunization
EPTB	Extra-Pulmonary TB
ESB	Essential Drugs Bureau
FBC	Feed Back Committee
FDH	Former District Hospital
FHI/IMPACT	Family Health International/Implementing AIDS Prevention and Care Project
GAP	Global AIDS Program (CDC)
GDP	Gross Domestic Product
GTZ	German Technical Cooperation

HC	Health Center
HCMC	Health Center Management Committee
HCP	Health Coverage Plan
HE	Health Education
HIS	Health Information System
HIV	Human Immunodeficiency Virus
HSR	Health Sector Reform
HSS	HIV/AIDS Sentinel Surveillance
ICC	Inter-agency Coordinating Committee
IDSW	In Direct Sex Worker
IR	Indirect Result
IUATLD	International Union Against Tuberculosis and Lung Disease
JATA	Japan Anti-Tuberculosis Association
JICA	Japan International Cooperation Agency
KHANA	Khmer HIV/AIDS National Alliance
KNCV	Royal Netherlands anti-TB Association
LNGO	Local Non Governmental Organization
MCH	Maternal and Child Health
MDR	Multi-Drug Resistance
MIS	Management Information System
MoH	Ministry of Health
MPA	Minimum Package of Care
MSF	Médecins Sans Frontiers
NAA	National AIDS Authority
NAMRU	Naval Medical Research Unit
NCHADS	National Center for HIV/AIDS, Dermatology and STDs
NDRS	National Drug Resistance Surveillance
NGO	Non-governmental Organization
NHS	National Health Survey
NIPH	National Institute of Public Health
NORAD	Norwegian Development Agency
NTP	National Tuberculosis Program
OD	Operational District
OPH	Office of Public Health
PAC	Provincial AIDS Committee
PAP	Priority Action Project
PCU	Project Coordinating Unit
PHC	Primary Health Care

PHD	Provincial Health Department
PHN	Population Health Nutrition
PLWHA	People Living With HIV/AIDS
PSH	Preah Sihanouk Hospital
PTS	Provincial TB Supervisor
RACHA	Reproductive and Child Health Alliance
RH	Referral Hospital
RH	Reproductive Health
RCG	Royal Government of Cambodia
RHAC	Reproductive Health Association of Cambodia
RIT	Tuberculosis Research Institute of Japan
SHCH	Sihanouk Hospital Center of HOPE
STD	Sexually Transmitted Disease
STI	Sexually Transmitted Infection
SWIM	Sector Wide Management
TA	Technical Assistance
TB	Tuberculosis
TB ERA	Tuberculosis Expanded Response and Access Project
TBA	Traditional Birth Attendant
TBCTA	Tuberculosis Coalition for Technical Assistance
TFR	Total Fertility Rate
UNAIDS	Joint United Nations Program on HIV/AIDS
UNDP	United Nations Development Program
UNFPA	United Nations Population Fund
USAID	United States Agency for International Development
USG	United States Government
VCT	Voluntary Counseling and Testing
VDC	Village Development Committee
VHV	Village Health Volunteer
WB	World Bank
WFP	World Food Program
WHO	World Health Organization
WPRO	Western Pacific Regional Office (of WHO)

Executive summary

Background

USAID/Cambodia is currently finalizing a new 3-year interim PHN strategy – 2002-2005. The mission's new Strategic Objective is *Increased Use of High Impact HIV/AIDS and Family Health Services and Appropriate Health-Seeking Behaviors*. The mission strategy will also address potential synergies in PHN activities, such as those between tuberculosis and HIV/AIDS.

At the request of USAID/Cambodia, a team from the Tuberculosis Coalition for Technical Assistance (TBCTA) visited Cambodia from January 12 – 30, 2002 to provide clear, implementable recommendations regarding the interim strategy component addressing TB and TB/HIV. Main findings and conclusions

Cambodia is among the 23 countries in the world with a high burden of TB; these countries together comprise 80% of the global TB burden. Currently the annual incidence of all forms of TB combined is estimated at 540 cases per 100,000 population and that of smear-positive pulmonary TB is 241 cases per 100,000 population. It is estimated that 64% of the population is infected with *Mycobacterium tuberculosis* and that 90 per 100,000 Cambodians die of TB annually¹. Related to the growing HIV epidemic, HIV seroprevalence among TB patients increased steadily from 2.5% in 1995 to 7.9% in 1999. Due to the HIV epidemic, the increasing population, and expanding national TB case-finding efforts, the number of TB cases will double in the next five years.

The National Tuberculosis Program (NTP) of Cambodia began implementing the WHO-recommended DOTS strategy for TB control in 1994. Political commitment supporting TB control efforts has been strong as demonstrated by the establishment in 1995 of the National TB Committee headed by the Prime Minister. The strengths of the NTP are demonstrated by the high cure rate achieved among all diagnosed cases and by the rapid expansion of DOTS. Between 1996-1999 nearly 50,000 new smear-positive cases were started on DOTS and more than 90% of these cases were cured - a level well above the WHO target of 85%. Following the implementation of the Health Coverage Plan the NTP has embarked on expansion of DOTS to Health Centers providing the Minimum Package of Activities (MPA). By the end of 2001 nearly 50% of all HC's providing MPA were providing DOTS as well. According to the NTP plan, 90% of functional HC's will provide DOTS by the end of 2002.

The shortcomings of the NTP are the moderate quality of the microscopy services in two-thirds of the centers. The proportion of patients with suspected TB with positive sputum is over 30%, well above the upper range usually observed in other DOTS programs. This high level indicates lack of awareness of the population about TB resulting in late reporting and under utilization of public health services providing DOTS.

¹ National Health Strategic Plan for Tuberculosis Control 2001-2005. National Center for Tuberculosis and Leprosy Control (CENAT). November 2001. Page 3

One main challenge to TB control in Cambodia is the need to increase access to diagnosis and treatment especially among the poor and among remote populations. Even if all functional Health Centers were able to provide DOTS, it is estimated that 50% of the population in a Health Center catchment area will live more than 10 km from the nearest health facility thus making daily attendance for supervised treatment virtually impossible. The other main challenge is to address the problem of additional cases caused by the HIV-epidemic. A joint TB/HIV working group from the NTP and NCHADS has been established to address the issues of the co-epidemics, particularly of identifying HIV-positive TB patients and of identifying and caring for PLWHA with TB or at risk for developing TB. However, joint policies and strategies of NTP and NCHADS to address TB/HIV issues yet to be fully developed and implemented. Finally the unregulated private health sector where many TB patients are diagnosed and receive care poses a risk for the development of MDR as the quality of diagnosis and treatment in this sector is generally of poor quality.

In July 2001 the NTP published the “National Health Policies and Strategies for Tuberculosis Control in the Kingdom of Cambodia 2001-2005” and in November 2001 the “National Health Strategic Plan for Tuberculosis Control 2001-2005.” Both documents, which adequately address the above mentioned problems and challenges, form the basis for the Expenditure Framework 2001-2005, which, however, is still to be developed. In May 2001 the CDC Global AIDS Program (GAP) conducted a Cambodia Country Assessment providing clear recommendations for a policy package which would provide a continuum of care to HIV-positive TB patients and PLWHA with TB and at risk for developing TB. A CDC GAP office will be established in Cambodia in early 2002.

By the end of 2002, Phase III of the Health Sector Reform of the Ministry of Health will be concluded. The MoH is currently preparing the Health Master Plan and Health Sector Strategy 2003-2007 in collaboration with the World Bank, Asian Development Bank, DFID and other stakeholders supporting the Health Sector Development such as WHO, bilateral organizations and the NGO sector. The new strategy gives priority to key public health interventions addressing TB, HIV/AIDS and malaria and stresses the need for coordinated and integrated planning of the disease programs at all levels.

Options for USAID/Cambodia, USAID/Washington, CDC/Atlanta and CDC/GAP support to TB and TB/HIV prevention and control

The team proposes that USAID and CDC provide support for the implementation of selected activities designated as outputs under the National Health Strategic Plan for TB control 2001-2005. These activities are included under 7 major plan outputs:

Output 1: Policies, Plans and Guidelines:

- To support a workshop of CENAT, NCHADS and other stakeholders to formulate a national HIV/TB strategy and plan.

Output 2: Capacity Building and Human Resource Development:

- To support the development of a planning and management course for NTP national and provincial staff and Provincial Health Department focal persons for communicable disease control.
- To support participation in the TB control courses in Hanoi; provide fellowships for MPH post graduate courses and finance participation of core NTP staff in international conferences of the Stop TB Partnership.

Output 3: Financing:

- To support, through TBCTA, a series of planning and formulation workshops to develop the Expenditure Framework 2001-2005 in collaboration with NTP and MoH with technical assistance of WHO and/or KNCV

Output 5: Service Provision

- To support, in collaboration with CDC and RIT, an operational research project to study laboratory diagnostic issues related to the high sputum smear positive rate among TB suspects and the high false positive rate of diagnostic smears.
- To support operational research on the feasibility of DOTS by private health providers in collaboration with WHO, CDC, KNCV, in country partners and local NGOs building on FHI 's work in Phnom Penh.
- To support pilot studies of community based DOTS by groups such as Village Health Volunteers, Traditional Birth Attendants, Feed Back Committee members, etc. in collaboration with WHO, CDC, USAID partners and NGOs.

Output 6: DOTS expansion to Health Center Level:

- To support DOTS expansion to HC's in ODs selected from 18 priority ODs in 9 provinces with a presence of USAID/Cambodia current partners.

Output 7: IEC and Advocacy:

- To continue support for IEC and Advocacy, through USAID partners such as FHI and PSI, focussed on community-based development of messages and materials on TB.

Output 10: Partnerships

- To support, through TBCTA, the provision of regular external technical assistance to the NTP in the framework of the Global DOTS expansion plan in collaboration with WPRO.

Highest priority for support should be given to activities listed under Output 1, Output 3 and Output 10.

The team further suggests that USAID provide funds to support the pending NTP Mid-term Evaluation planned for 2003 and to support participation of 2 international experts drawn from among TBCTA partners and 1-2 local experts in the Mid-term Evaluation. Other donors would similarly support the Mid-term Evaluation through the provision of international and local experts thereby ensuring that the Country Review Mission would be conducted by external experts and in close collaboration with WPRO.

2. Background

Health Sector Development

After the ouster of the Khmer Rouge regime in 1979, efforts began to reconstruct the completely shattered country. A large number of health workers were recruited rapidly, and they were poorly trained, often in a foreign language. They form the bulk of the present-day health workforce.

The 1993 elections brought international recognition and foreign assistance. Thus began the formidable task of creating a Ministry of Health (MOH) and a health service delivery infrastructure. This effort succeeded, in an astonishingly short period of time, in creating a Ministry with the capacity to plan and administer health services. It also produced a comprehensive "Health Coverage Plan" and "Operational Guidelines" which have been under implementation for the past 4 years, and which represent the first real modern health care system Cambodia has ever known. The task is formidable: the existing workforce, excessive in numbers, is grossly inadequate in skills; salaries are so low that there is little or no incentive to work; and parts of the country remained insecure until just 3 years ago.

The MOH is aware of all of these constraints. Active efforts are underway, with strong technical assistance from a variety of organizations, to address these constraints. Rapid progress is being made in the creation of a network of Health Centers (HC) and Referral Hospitals (RH) at the Operational District (OD) level. Management of health services has been decentralized to the level of the OD, and District Health Management Teams (DHMT) have been created and trained. The MOH welcomes NGO assistance, particularly in upgrading skills and the quality of services.

Cambodia is in the process of implementing a nascent health service system. Tangible results are evident 3-4 years after completion of the initial plans, but development of the planned system is still far from complete. However, progress will be made in stages, and it will take time. The need to deliver reproductive and child health, HIV/AIDS, TB interventions are urgent and cannot wait for full development of the health care system. At the same time, interventions cannot be delivered without such a system and will always be constrained by the level and pace of system development. TB, reproductive and child health and HIV/AIDS efforts in Cambodia must therefore proceed on two tracks simultaneously: strengthening the nascent service delivery system, and promoting the delivery of specific interventions.

In mid 2001, an in-depth review and assessment of the USAID/Cambodia Population, Health and Nutrition (PHN) portfolio was conducted in preparation for the development of a new follow on 3-year strategy. With regard to infectious diseases, the PHN Assessment Report [dated June 2001], provides the following recommendations to support Tuberculosis (TB) control efforts by the Royal Government of Cambodia (RGC):

- USAID should support the introduction of Direct Observed Treatment Shortcourse (DOTS) in Health Centers (HC's) throughout geographical areas selected for strategic focus through technical assistance, training, and on-the-job follow-up by NGOs at the level of actual service delivery.

- When and as Health Center DOTS is available, community-based Information, Education and Communication (IEC) to promote utilization of services and decrease transmission should be integrated into general community based health education efforts.
- While home delivery of DOTS to people living with HIV and AIDS (PLWHA) is certainly a need, it should not be addressed prior to implementation of DOTS in HC's and of large scale community-based and home care activities.

Based on the assessment and its findings and recommendations, USAID/Cambodia has articulated a new 3-year interim PHN strategy – 2002-2005. The mission's new Strategic Objective is *Increased Use of High Impact HIV/AIDS and Family Health Services and Appropriate Health-Seeking Behaviors*. The mission strategy will also address potential synergies in PHN activities, such as those between tuberculosis and HIV/AIDS.

Within the context of developing the new follow on strategy, USAID/Cambodia invited a team of experts from the Tuberculosis Coalition for Technical Assistance (TBCTA), to provide strategic, coordinated recommendations to USAID/Cambodia and USAID/ANE in regard to TB and TB/HIV. The recommendations would need to focus on the maximization of USG resources for TB taking into account the overall strategic framework and directions identified in the 2001 assessment and articulated in the Interim PHN Strategy 2002 - 2005.

The TBCTA, established in 1999 with support from USAID/Washington's Bureau for Global Health, is a partnership of six organizations involved in TB control. The World Health Organization (WHO), the International Union Against Tuberculosis and Lung Disease (IUATLD), the Royal Netherlands TB Association (KNCV), the Centers for Disease Control and Prevention (CDC), the American Lung Association (ALA) and the American Thoracic Society (ATS).

The report presents the findings and recommendations of the TBCTA team, which was comprised, of Dr. Maarten Bosman, KNCV, Dr. Marcus Hodge, WHO/WPRO and Dr. Charles Wells, CDC, which visited Cambodia from January 12-30, 2002.

3. Terms of Reference for the TBCTA team

Within the programmatic context of Cambodia's National TB Program (NTP) and Stop TB efforts, provide clear, implementable recommendations to USAID/Cambodia and USAID/Washington's Asia Near East Bureau (ANE) on the most strategic use of mission and ANE regional TB funds.

The Scope of Work clearly states that the objective of the mission is not to again assess or review the NTP. The focus should be on considering the NTP within the broader context of the nascent health delivery system in Cambodia and the current HIV/AIDS situation. As well as the fact that USAID has designated Cambodia as an HIV/AIDS 'Rapid Scale-Up' country (one of only four in the world, and the only one in Asia) and a priority country for TB control.

The team should further review TB-related activities currently being funded by:

- USAID/Cambodia through its partners e.g., CARE, Family Health International, and KHANA
- ANE Bureau
- TB-assistance from other donors,
- HIV/AIDS/TB activities being contemplated by the Centers for Disease Control (CDC)
- The Naval Medical Research Unit (NAMRU).

Annex 1 provides the Scope of Work.

3. Summary of activities

The team members had discussions with the Secretary of State for Health, the Director General for Health, the Secretary General of the National AIDS Authority, the Mission Director of USAID/Cambodia and USAID/OPH staff. The team members further met with representatives of FHI, CARE and KHANA to discuss current activities in Cambodia. Extensive discussions were also held with staff of CENAT and NCHADS. Team members discussed WHO support with the acting WHO representative and ADB support with the ADB representative. In Phnom Penh a member of the team visited the Sihanouk Hospital Center for Hope, the National Institute of Public Health [NIPH] and the Sihanouk Hospital.

Team members participated in an Inter Agency Coordinating Committee meeting at CENAT and in the First National Workshop on Health Strategy Development for 2003-2007, held at the Ministry of Health on 21 and 22 January 2002.

Together with USAID and CENAT staff, the team members divided into three subteams and were able to visit Bantey Meanchey, Siem Reap, Kampong Chhnang, Takeo, Kampong Som and Kampong Speu provinces. Debriefing sessions were held with NTP and USAID core staff and the State Secretary for Health, Dr. Mum Bun Heng.

Annex 2 provides a list of persons met; Annex 3 the detailed itinerary of the visit; and Annex 4 the summary reports of the three field visits.

4. Summary of findings

4.1 The burden of Tuberculosis in Cambodia

Cambodia is among the 23 countries in the world with a high burden of TB; these countries together comprise 80% of the global TB burden. Currently the annual incidence of all forms of TB combined is estimated at 540 cases per 100,000 population and that of smear-positive pulmonary TB is 241 cases per 100,000 population. It is estimated that 64% of the population is infected with *Mycobacterium tuberculosis* and that 90 per 100,000 Cambodians die of TB annually².

² National Health Strategic Plan for Tuberculosis Control 2001-2005. National Center for Tuberculosis and Leprosy Control (CENAT). November 2001. Page 3

Related to the growing HIV epidemic, HIV seroprevalence among TB patients increased steadily from 2.5% in 1995 to 7.9% in 1999. Due to the HIV epidemic, the increasing population, and expanding national TB case-finding efforts, the number of TB cases will double in the next five years.

The burden of TB in Cambodia is the highest in the region and comparable to the size of the TB problem in HIV affected sub-Saharan African countries with high TB prevalence. The TB burden has a serious impact on the socioeconomic development of Cambodia; TB predominantly affects young people in the productive years of their lives, mothers of families, and in particular the poor. As a chronic infectious disease causing high morbidity and mortality, TB is a main cause of poverty itself by incurring high expenditures on affected families.

4.2 The NTP of Cambodia

The National Tuberculosis Control Program (NTP) was established in 1980, and from 1980 to 1993, the program implemented long-term TB treatment strategies. In 1994, the government adopted the DOTS strategy and the following year the National Committee for TB control was established. The committee is headed by the Prime Minister, which clearly demonstrates the government's political commitment.

Before the implementation of the Health Coverage Plan (see below), TB diagnosis and treatment was centralized in 21 provincial hospitals and 121 district hospitals. Following the implementation of the HCP, the NTP was reorganized based on the creation of 73 Operational Districts. In 1999, the program piloted decentralization of DOTS to the health center level in 9 Health Centers (7 ODs from 3 provinces). The pilot program covered a population of 108,000.

Based on the success of the pilot program, the NTP expanded DOTS to 298 HCs in 27 ODs during the period 2000-2001, covering 47% of the 632 functional HCs in Cambodia. In 2002, the NTP plans to expand DOTS to 30 additional HCs in the initial 27 pilot ODs, as well as to 242 HCs in 24 other ODs.

When the NTP achieves its objective by the end of 2002 a total of 570 HCs in 51 ODs will be covered, i.e. 90% of the functional HCs in the country.

In addition to the table below, [Annex 5](#) shows the HC DOTS expansion plan by OD, HC and year of implementation.

	1999	2000	2001	2002 (Pending)	2003 (Pending)
# of Health Centers with DOTS	9	61	291	563	720
# of ODs with DOTS Programs	0	4	31	51	63
of Provinces with DOTS programs	0	4	14	16	20
Estimated Population covered	108,000	750,000	4,000,000	7,200,000	9,000,000

In Phnom Penh, the NTP has provided DOTS home care since 1994, which covered a population of 550,000 in 1998 (last estimate).

In Cambodia, all TB patients receive monthly food supplies (15 kg of rice, 900 grams of vegetable oil, and canned fish) from the World Food Program (WFP).

At the National level, a team of 15 staff is responsible for the implementation of the program. The central team is directly involved in the introduction of DOTS at the HC level in the ODs. At the provincial level, TB supervisors are responsible for supervision of the ODs, and OD TB supervisors supervise the HCs, that provide DOTS. The previous TB units in 66 referral hospitals and 75 former district hospitals (FDH) provide diagnosis by direct microscopy. X-ray facilities are only available in specialized hospitals in the main cities.

4.3 Results of case-finding and treatment

During the 1980's, the case-notification rate of smear-positive new and relapse cases fluctuated around 95/100,000 population. After the introduction of the DOTS strategy in 1994 the rate gradually increased from about 120/100,000 to 130/100,000 in 1999 and 126/100,000 in 2000. The notification rates of smear-positive cases per 100,000 population in 1999 varied considerably by province. One third of the provinces reported rates over 150. Kampong Speu, Svay Rieng, Kampong Chhnang, Kandal, Kampong Thom and Prey Veng provinces reported the highest rates. In one-third of the provinces the rate was 85/100,000 or lower. Pailin, Preah Vihear, Ratanakiri and Koh Kong provinces reported the lowest rates. See [Annex 7](#) for more detail.

In 1999, 4% of cases notified were smear-negative pulmonary TB and 10% were extra-pulmonary TB (EPTB). The proportion of suspects with sputum smear positive results in Cambodia was very high in 2000 at 33.6%³. Quality control of smears shows that 5.5% of smears by routine laboratories were false positive and 5.3% false negative.

During the period 1996-1999 the NTP started 49,427 new smear-positive cases on DOTS. The overall cure-rate achieved during this period was 90%, well above the WHO target of 85%. During the same period 2,681 smear-positive cases were treated with the WHO-recommended retreatment regimen; the cure-rate in this group was 88%. The fatality rate in new cases was low at 2% to 3%. The default rate was low as well at 2% to 3%. See [Annex 8](#) for more detail.

In 2000 and 2001 the first round National Drug Resistance Surveillance (NDRS) was carried out. The results have shown total resistance of 9.8% (CI 7.3-12.3) in new cases and no MDR resistance. Total resistance in previously treated cases is 16.5% (CI 10.2-22.8) and MDR is 3.1% (CI 0.7-8.9).⁴

[Annex 6](#) provides NTP case-notifications and rates during the period 1982 – 2000.

³ NTP Tuberculosis Report 2000, page 8.

⁴ Unpublished data from the JICA National TB Control Project. (Not for wider circulation till published)

4.4 NTP financing and collaborating partners

During the current plan period, the NTP received external support from the following collaborating partners.

- JICA under a five year agreement running from August 1999 through July 2004. The average annual support concerns US\$300,000 for operational costs and US\$ 250,000 for equipment, totaling some US\$2.75 million for the entire period.
- Additional JICA support for training of NTP staff in Japan and the salaries of three expatriate technical assistants.
- Other support through JICA is from RIT in Japan for research projects such as the NDRS.
- JICA has also provided funds to NGOs like KHANA, CHC, and SHARE, for smaller projects involving TB activities.
- Japanese Grant funds have been provided for the construction of the new CENAT building in Phnom Penh and three new TB units in one province and the Japanese Embassy has provided funds for the construction of TB wards in various places. The Japanese government is considering providing more funds in the future for the rehabilitation of 2 to 3 FDHs or RHs per year.
- The Japanese Foundation for AIDS prevention provided US\$42,000 for research projects in 2000-2001.
- The Japanese Ministry of Health provided the program in 2001 with US\$300,000 to support the DOTS expansion program. The funds are channeled via WPRO and the WHO country office to the NTP.
- The World Bank Disease Control and Health Development Project, which was approved in December 1996 and runs through December 2002, includes support to the NTP of US\$2.1 million (after 17.5% depreciation). The budget provides for equipment and management support to both national and provincial levels. Funds are disbursed by the PCU on request of the PUs as aggregate installments for HIV/AIDS, malaria and TB control activities. Over the last several years considerable underspending has occurred. As of December 2001 US\$1.16 million remained unspent.
- The World Food Program is a major donor to the NTP providing food aid to TB patients at the value of about US\$1.5 million per year.
- USAID has supported the NTP through FHI in developing IEC materials.
- Unquantified Government finances for salaries, infrastructure and operational costs at the service delivery level. Some 15% of the World Bank project is through government counterpart funds.

4.5 NTP strategic plan 2001-2005

During 2001, the NTP developed two important documents laying out the policies and strategies for the program for the period 2001-2005:

- National Health Policies and Strategies for Tuberculosis Control in the Kingdom of Cambodia 2001-2005. Published in July 2001.

The main purpose of this document is to provide policy and strategy directions of the MoH. The directions mainly focus on the management structure, service provision, health information

system, IEC, research, investment, drugs, financing and partnership development in line with the overall national health policies, strategies and the health sector reform. A working group was set up under the Chairmanship of the Director General of Health Services, with members from CENAT and the Communicable Diseases Control department. Technical assistance was provided by JICA, WB, WHO, Medicam and USAID.

- National Health Strategic Plan for Tuberculosis Control 2001-2005. Published in November 2001.

This strategic plan describes ten major outputs with related main strategies, objectives and activities to achieve the major objectives of the NTP. The overall objectives are to ensure equity and access to TB services and to maintain a high cure rate of more than 85% and a high case detection rate of at least 70% by the end of 2005.

The ten main outputs are:

1. Policies, Plans and Guidelines
2. Capacity Building and Human Resources Development
3. Financing
4. Drugs and Consumables
5. Service Provision
6. DOTS expansion to Health Center Level
7. IEC and Advocacy
8. Information System
9. Research
10. Partnership

4.6 The size and trend of the HIV epidemic and the TB/HIV profile

Since the identification of the first case of HIV in 1991, it is estimated that out of a population of 11 million, Cambodia currently has approximately 169,000 people living with HIV/AIDS. Although the estimated prevalence among adults aged 15-49 has shown a gradual decline from 3.9% in 1997 to 2.8% in 2001, Cambodia is still the worst affected country in the region. Among the general population, prevalence levels are about 50% higher in men than in women. The infection prevalence among pregnant women tested in ANC clinics was 2.3% in 2000. Notable perinatal or mother to child transmission has been reported and higher levels of infection are suspected. In 2000 a household survey conducted in 5 provinces found that the prevalence rate among males was 1.8% and among females 1.2%. On the whole, infection rates are much higher in urban than in rural areas. The geographical focus of the epidemic is in Phnom Penh and provinces bordering Thailand, especially in the northwestern parts of the country.

Co-infection with HIV increases the likelihood that a person with TB infection will progress to active TB disease from 5-10% over the person's lifetime to 5-10% per year. Current estimates are that nearly two-thirds of the population of Cambodia is infected with TB, and approximately 170,000 persons in the country are infected with HIV. Additionally, the HIV seroprevalence among TB patients increased from 2.5% in 1995 to 8.9% in 2000. Given the considerable

overlap of populations at risk for TB and HIV infection, the growing number of TB and HIV co-infected persons in the country will continue to increase the country's TB case burden substantially over the next 5-10 years. The NTP priorities of rapid DOTS expansion and increased TB case-finding efforts, the effects of HIV and a population growth rate of 2.5% per year, could result in more than 50,000 additional TB cases during the next 10 years above the existing case burden the NTP currently handles.

4.7 NCHADS and NAA policy and strategy

National AIDS Authority (NAA)

The Royal Cambodian Government established the NAA in 1999 to develop a broad multi-sectoral response to the growing HIV epidemic. According to the National Strategic Framework, the NAA is responsible for coordination of an expanded approach to the epidemic across all sectors, is chaired by the Minister of Health, and reports directly to the Prime Minister. It operates through a Central Committee made up of the Secretaries of State from twelve line ministries and has Provincial AIDS Committees (PACs), chaired by provincial governors, which set policy and co-ordinate the national response at the provincial level. In the *National Strategic Framework for a Comprehensive and Multi-sectoral Response to HIV/AIDS 2001-2005*, specific goals for the national response to the HIV epidemic are:

- to reduce new HIV infections
- to provide care and support to those people living with and affected by HIV/AIDS
- to alleviate the socioeconomic and human impact of AIDS on the individual, the family, community and society.

Regarding its potential role in helping to address the need for an integrated response to issues of TB/HIV, the NAA has set priorities to strengthen and expand effective actions for care and support proven to be effective and to pilot "new" interventions as part of its core strategies. The objectives for this strategy are:

- to ensure that appropriate care and support services are strengthened and available to all people living with HIV/AIDS and their families
- to ensure the strengthening and expansion of existing care and support programs (including home-based care, institutional care, and treatment for opportunistic infections such as TB)
- to ensure community support for children and adolescents affected by HIV/AIDS.

With continued support from the highest levels of government and consistent funding, the NAA could play a key role, particularly through the PACs, in coordinating and integrating services for TB and HIV/AIDS at the provincial level.

Ministry of Health (MOH)

The MOH is committed to addressing the growing issues of TB/HIV by developing an integrated approach to providing HIV/AIDS and TB prevention and care services. This commitment is demonstrated in both the HIV/AIDS and the national TB programs, respectively. The National Center for HIV/AIDS, Dermatology and STD (NCHADS) of the MOH is responsible for the

health sector's response to HIV/AIDS and has outlined the following priorities in their *Strategic Plan for HIV/AIDS and STI Prevention and Care in Cambodia, 2001-2005*:

- integrate vertical programs including HIV/AIDS and TB
- ensure that drugs for opportunistic infections (like TB) are available for HIV/AIDS care services
- disseminate national guidelines and protocols on HIV/AIDS management throughout the country (including the management of TB), and ensure that all health workers dealing with HIV/AIDS in the public sector are trained in the use of the guidelines
- support networks and associations of persons living with AIDS to improve utilization of AIDS care services
- conduct annual HIV prevalence surveillance among TB patients as part of the ongoing HIV Sentinel Surveillance (HSS) activity

Likewise, the National Tuberculosis Control Program (NTP) under the Center for Tuberculosis and Leprosy (CENAT) of the MOH outlined the following priorities in its *National Health Strategic Plan for Tuberculosis Control, 2001-2005*:

- develop, in collaboration with NCHADS, specific strategies for addressing TB/HIV issues, and to formulate and implement action plan to reflect these strategies
- determine the circumstances under which chemoprophylaxis for TB will be provided to some target groups such as people living with HIV/AIDS
- mobilize resources for the management of TB/HIV patients
- promote NGO and community involvement in certain aspects of TB control
- collaborate with NCHADS to organize the HIV seroprevalence survey among TB patients
- organize operational research such as preventive therapy for HIV infected people, clinical studies, tuberculosis mortality survey, etc.

To initiate the process of coordinating activities of the two vertical programs for TB/HIV, in 2001 the MOH formed a national working group comprised of high-level staff of NCHADS and CENAT to develop the framework and action plan. The working group currently meets on a monthly basis to exchange information and to discuss general programmatic issues related to TB/HIV and creating linkages between the two programs. Additionally, the MOH in 2001 staged a JICA-supported TB/HIV symposium with staff of both programs from the central level and with NGOs to provide information on the specific effects of the two combined epidemics. However, to date, the framework and strategic plan for an integrated approach to TB/HIV have not been developed.

Ultimately, the ability of the MOH, through the NTP and NCHADS, to address the added morbidity and mortality from TB among HIV/AIDS patients will depend strongly on integrated service delivery at the district referral hospitals, at health centers, through health center outreach to villages, and through home-based care programs. Expanding partnership with NGOs currently supporting and strengthening health services at these levels will be essential to this process.

4.8 NCHADS collaborating partners

Non-governmental Organizations (NGOs)

Currently, several NGOs are involved in health service delivery for TB patients and HIV/AIDS patients both in Phnom Penh and in distant provinces. Their activities include activities such as supporting referral hospitals with TB and HIV/AIDS services, health centers for general health care and DOTS delivery for TB treatment, and home-based care projects for AIDS patients. These NGOs would be natural partners for the NTP and NCHADS to include in the process of developing the framework and action plan for TB/HIV and for the actual process of implementation and expansion. Examples of NGOs providing TB/HIV linkages include:

1. Caritas Cambodia

Caritas Cambodia currently supports seven health centers in Siem Reap OD in Siem Reap Province. It specifically supports DOTS at three of the seven health centers including offering inpatient TB care, smear microscopy for TB diagnosis, staff training and re-training for TB, and transportation for health center staff to track patients interrupting treatment. Additionally, it supports an HIV/AIDS home care program for Siem Reap City at Po-Mean-Chey health center. Home-based DOTS for AIDS patients with TB is offered through the home care program in coordination with the TB Provincial Director. Caritas has capacity to assist with further expansion of DOTS and TB/HIV service integration in the OD.

2. CARE

CARE currently supports eleven health centers in Banthey Meanchey Province and specifically supports DOTS activities in eight of these health centers. The activities include training and retraining of health center staff on TB management and DOTS delivery, patient counseling on TB, and feedback committee training on TB issues such as compliance. CARE is also involved in supporting HIV activities in Poipet where rates of HIV transmission are high due primarily to the presence of casinos, twenty brothels, and a highly mobile population. CARE manages a home-based care program in Poipet recently inherited from MSF-Holland. Activities of this program are less focused on clinical care and more focused on social support for patients and their families and teaching families to care for patients. CARE will be working in close conjunction with FHI who will undertake more of the clinical care activities for patients in the program. All activities are closely coordinated with provincial and operational district health authorities following existing national guidelines from the MoH. CARE also supports DOTS in 11 health centers in Kampong Chhnang provinces.

3. Sihanouk Hospital Center of HOPE Hospital (SHCH)

SHCH is an NGO-supervised hospital in Phnom Penh that provides free medical and surgical care for Cambodians, primarily for the poorest of the poor. Nearly half of the presenting patients come from provinces away from Phnom Penh. SHCH began formal co-operation with the NTP in August of 2001 to solidify management of TB patients, particularly those transferring back to the provinces while still under active treatment. However, it has been caring for a large number of TB patients, particularly TB patients with HIV infection, for several years. Staff in the SHCH TB clinic received training from the NTP to begin its ambulatory and home care TB DOTS program. Home care team staff and volunteers facilitate case detection and treatment monitoring in the community with special focus on persons living with HIV/AIDS. Patients receiving TB care at SHCHs TB clinic or through its home care network have access to all medical and

surgical care services of the hospital. Additionally, patients under TB treatment in the ambulatory clinic have access to transportation to the clinic during the 2 months of intensive phase therapy, and SHCH makes foodstuffs available to TB patients through the World Food Program. SHCH would have capacity for expansion. SHCH is an ideal model of how TB/HIV services could be offered at the level of a referral hospital.

4. Khmer HIV/AIDS National Alliance (KHANA)

KHANA works as a contracting agency with 40 local NGOs across Cambodia. It directly supports several home care teams in Phnom Penh and some in other provincial areas. Each team is comprised of home health aides and part time nurses. The teams provide counseling and support for persons living with HIV/AIDS and their families, basic care, basic medical treatment of symptoms, DOTS for patients with TB, training for care givers, referral and transport for medical treatment and for HIV testing, and food and housing support on a limited basis. Each team manages approximately 80-90 patients. KHANA has had a closely coordinated working relationship with NCHADS and has been increasing its coordinated activities with CENAT and the NTP. Because of its relationship with an extensive network of local NGOs operating in Cambodia, KHANA would be an excellent partner for the MOH in addressing TB/HIV issues.

5. Family Health International (FHI)

FHI has been a working partner with the NTP and has identified TB/HIV as a key priority in its activities to support the NTP with DOTS expansion and NCHADS with expanding HIV/AIDS services. In collaboration with the NTP, NCHADS, international TB organizations, and other NGOs, it has performed cross-training for home-based DOTS and HIV home-based care teams, performed community-based sputum smear microscopy surveys of HIV-infected persons, research on health-seeking behaviors and attitudes towards TB, and IEC development for promoting DOTS. Additionally, FHI is piloting an isoniazid preventive therapy project among HIV-infected persons in Battambang province and is continuing to strengthen IEC for the NTP and to support TB care projects among HIV-infected persons. It has developed a proposal based on the availability of future funding that focuses on provinces with high HIV prevalence for TB/HIV activities. FHI would promote voluntary testing and counseling in these provinces. Among persons identified with HIV, counseling on TB would be provided, as would voluntary TB screening, DOTS for active TB, and isoniazid preventive therapy for persons with HIV and TB infection but without active TB disease.

6. Preah Sihanouk Hospital (PSH)

PSH has a 60-bed dedicated AIDS ward opened in 1997 with the support of MSF-France. It provides good treatment of opportunistic infections, but is limited by its laboratory facilities and Drug supply. PSH has good social support services and linkages with NGO community groups, including KHANA. In addition, it receives many referrals from Sihanouk Hospital Center of HOPE. A fee of 5,000 riel per day (US\$1.25) is requested for inpatient care, but 90% of patients receive care for free. There is good follow up of patients on treatment, maintenance therapy, and prophylaxis for opportunistic infections such as cryptococcal meningitis; however, the referral process for hospitalized patients with active TB, many of whom are smear-negative at the time of diagnosis or have extra-pulmonary TB, is weak. This situation brings to light inherent issues of diagnosing and managing TB in persons with HIV/AIDS in the context of the national strategy of DOTS expansion and increased detection of smear-positive TB cases. The experience of PSH

in treating AIDS and managing TB in AIDS patients would be highly valuable for the process of developing the framework and action plan for TB/HIV.

4.9 Health Sector Development

Through health sector development, the MOH aims “to improve the health of the Cambodian people and contribute to their productivity and social development through increased access and utilization of essential health services, whether the public or private sector delivers those services”.

Under organizational reform (which was started in 1997 and implemented under Project Phases I and II), the Health Coverage Plan provides the criteria used to locate public health facilities within the district-based health care system. These criteria indicate that a Health Center (HC) should be within 10km, or two hours walk, to cover an optimal population of 10,000. Each HC is under an Operational District (OD) and linked to a Referral Hospital (RH) that covers between 100,000 and 200,000 people. The service package that has been defined for HC’s is the Minimum Package of Activities (MPA) and for RHs it is the Complimentary Package of Activities (CPA).

4.10 Health Sector Financing

Under budget reform, the Government health budget expenditure has increased from US\$1.00 per capita in 1998 to US\$2.10 per capita in 2000 and it is aimed to increase this to US\$4.40 per capita by 2003. A major obstacle to the delivery of public health services is the under-funded health sector. Household spending on health care is approximately US\$29.00 per year, which is 11% of the GDP and one of the highest household contributions to health in the world. External donors contribute about US\$5.00 per capita per year to health in Cambodia.

Two budget decentralization initiatives have been introduced: the Accelerated Development District (ADD) in 1996 and the Priority Action Program (PAP) in September 2000. The ADD is a transitional cash advance system designed to give program managers in the provinces greater certainty about the level of funding available to them and greater flexibility in the use of their funds. The Priority Action Program (PAP) was introduced by the Ministry of Economy and Finance to improve the health sector’s access to government funding and increase the efficiency and effectiveness of public expenditure. The project provided support to the MOH for introduction and monitoring of PAP in 7 pilot provinces. ADD and PAP have initiated a change in the management culture at the district level with evidence of delegated authority and responsibility and the allocation of government funds has been rationalized through a budget allocation formula for the ODs.

Under financial reform, pilot studies have been set-up to assess the Contracting – Out and the New Deal strategies. Pilot studies on Contracting-Out are underway in two ODs, where the contractor has autonomy to manage OD Health Services with full control over staffing and budget. The New Deal approach is being followed in two ODs and Takeo Hospital in Takeo province. New Deal means setting-up transparent and accountable management systems with

increased control over staffing and budget. Wages are performance-based and are funded by Government, donors and revenues from user fees.

The MOH, with the cooperation of the Health Sector Reform Phase III (HSR III) Project, has developed a strategy to overcome “obstacles” to improving the delivery of public health services and outcomes. This strategy is referred to as the Boosting Strategy. Overall, this strategy focuses on (1) ensuring access to sufficient financial and human resources, (2) improving management of resources, and (3) increasing demand for and utilization of services. Reforms have also been implemented in the areas of organization, public administration, budgeting and financing and Phase IV of the Health Sector Reform Project is currently under development.

4.11 Collaborating Partners of the Ministry of Health

The MOH and many donors recognize that the health problems of Cambodia cannot be addressed successfully if all parties and programs work in isolation. Existing donor coordinating mechanisms like COCOM, which have been highly successful, concentrate on programmatic issues, but do not deal adequately with the coordination of overall strategies, policies or financial resources. As an initial measure to improve donor coordination, the MOH aims to use the Sector Wide Management (SWiM)⁵ system to promote broad government and donor agreement on and commitment to a common set of sector goals and strategies. Donors in the Health Sector Reform Project Phase III include DFID, the Dutch Government, NORAD, UNDP, UNFPA and WHO. AusAID, GTZ, ADB and Belgian Co-operation have shown interest in implementation of the Boosting Strategy in their future support to the health sector in Cambodia. UNICEF has also supported health sector strategy development.

4.12 WHO and Health Sector Reform

WHO has been one of the leading partners of the MOH in the health sector reform process and provided US\$753,000 funding from 1998 to 2001. The team leader for the Health Sector Reform project is currently located within WHO. The HSR III Project (1998 – 2001) of the MOH aimed to reduce poverty in Cambodia through the development of quality basic health services, particularly in rural areas. The project was implemented jointly with WHO and other partners following Phases I and II of the Strengthening Health Systems project. The end point of the project was the development of a Health Sector Master Plan and Medium Term Expenditure Framework as part of the MOH-led process of improving SWiM. WHO will continue to be a key partner in Phase IV of the Health Sector Reform Project.

4.13 Strategic Framework of the Health Sector, 2003 – 2007

A Draft “National Strategic Plan for Communicable Disease Control 2001 – 2005” has been developed clarifying the roles of the Communicable Disease Control (CDC) Department of the MOH, disease control programs, national institutions and ODS. A joint health sector review for the period 2001 – 2005 has also been conducted and the MOH is engaged in preparations for the design of the health sector program for 2003 – 2007. This will include a common strategy and

⁵ SwiM: “...is a new way for the Ministry of Health to manage the health sector, and for the MoH, donors and stakeholders to work together to achieve better results and better health for the Cambodian people.”

national health master plan that summarizes all government and donor inputs through a consultative process. A key component of the sector program will be a medium-term expenditure framework that indicates the cost of different plan components and their resource allocations by year.

As a part of the health sector planning process, the First National Workshop on Health Sector Strategy, 2003 – 2007 was convened by the MOH from January 21-22, 2002 to review the strategic planning options identified during the joint health sector review. At the workshop, five Working Groups were formed (and a sixth contemplated for Institutional Development). The five groups are: Health Service Delivery, Health Financing, Behavioral Change Communication, Quality Improvement, and Human Resources Development. These working groups will help guide and inform the overall strategic planning process. The MOH considers the development of a national health strategy as the key to ensuring sustainable health system development, within the framework of the SWiM philosophy.

4.14 USAID/Cambodia-funded partner's current TB activities

The prevention and control of TB is not explicitly addressed in the current USAID strategy which ends in October 2002. However, several USAID CA's are providing support to Health Centers (see field reports), some of which participated in the HC DOTS pilots, and all of which may be expected to incorporate DOTS in their range of services in the near future, with the training and TA needs this entails.

FHI/Impact has provided a small subgrant to an NGO, Servants to Asia's Poor, to pilot the home delivery of DOTS to PLWHA in Phnom Penh. KHANA has proposed similar activities through several of its partner LNGOs. In addition, CARE has included DOTS in their existing programs. FHI/Impact conducted and disseminated a study of TB health seeking behavior among the urban poor: "Ideas, Attitudes and Tuberculosis Treatment-seeking Behavior among AIDS and Tuberculosis Patients in Phnom Penh, Cambodia". FHI/Impact conducted two studies concerning traditional healers and pharmacists and TB care: "Traditional Healers and Tuberculosis Care in Phnom Penh, Cambodia" and "Pharmacists: The Front Line in Providing Tuberculosis Care in Phnom Penh, Cambodia".

4.15 USAID/ANE TB assistance to Cambodia

HIV/TB Model project to address TB and HIV co-infection among PLWHA. In Cambodia, the care objective of the ANE strategy, with ANE funding, has supported FHI/Impact to implement a pilot collaborative project with Gorgas Memorial Institute, the University of Alabama Birmingham, to address the problem of low TB case-detection in Cambodia. The Tuberculosis Expanded Response and Access Project (TB ERA) has been working with the NTP to: (1) assess the impact of TB among disadvantaged populations in Phnom Penh, including HIV-infected and chronically ill persons serviced by a home-care network (KHANA and World Vision); and (2) improve access to TB care by linking public TB services with selected groups using innovative approaches through existing community structures. In addition, the project is conducting qualitative research to develop BCC materials to be used by local leaders and NGOs to promote awareness of TB symptoms, diagnosis and treatment options in the community.

The above studies were funded by ANE through support to the FHI Asia Regional Office, Bangkok (FHI/ARO). Other components of FHI/ARO support to Cambodia are:

- HIV/AIDS surveillance strengthening in collaboration with NCHADS
- Care and support and PLWHA through the Asia Pacific Council of AIDS Services Organizations (APASCO)
- Regional capacity building strategy and program
- Cross-border STD/HIV interventions in collaboration with CARE International

The ANE Regional HIV/AIDS and Infectious Diseases program, approved in June 2000, focuses on strengthening surveillance systems and linkages between countries to respond to HIV/AIDS and infectious diseases. While the strategy seeks to phase out activities in USAID-presence countries, the strategy states that it will continue to focus on multi-country linkages and supporting and improving countries capacity to respond to epidemics. [Note: due to the on-going reorganization within USAID/W, there may be changes in this strategy and funding sources between ANE and BGH.]

4.16 USAID/Cambodia's Interim PHN Strategy: 2002-2005

USAID/Cambodia finalized the mission's follow-on 3-year Interim PHN Strategy – 2002-2005 in late 2001. The strategy, with three year funding levels, was just approved by USAID/W in January 2002. The strategy builds on past and current USAID assistance to Cambodia. The mission's new Strategic Objective is: *Increased Use of High Impact HIV/AIDS and Family Health Services and Appropriate Health-Seeking Behaviors.*

This strategic objective will be supported by four interconnected Intermediate Results:

- 1) Increased access to information and services;
- 2) Strengthened capability of individuals, families and communities to protect and provide for their own health;
- 3) Improved quality of information and services; and,
- 4) Improved capacity of health systems.

The mission strategy, as it is more fully articulated during the design process, will address potential synergies in PHN activities, such as those between tuberculosis and HIV/AIDS.

Four principles guided the development of the strategy:

- 1) Working closely with the Cambodian and other donor partners under the umbrella of RGC national policies and strategies;
- 2) Integrating HIV/AIDS and RH/MCH health education and service delivery programs wherever feasible to build upon synergies and preserve scarce resources;
- 3) Concentrating health assistance in key provinces and operational districts to achieve a critical mass and enable Cambodians to make choices that will improve their health;
- 4) Ensuring that capacity building is part of every activity that USAID supports.

The strategic framework design team for the interim strategy did not include a plan for USAID/C to address the problem of tuberculosis when they were in Cambodia in August/September 2001 since the mission had already scheduled an expert visit in early 2002. The January 2002 Tuberculosis Coalition for Technical Assistance (TBCTA) team visit, and options from this report, will be used by USAID/C, USAID/W and CDC to address the pressing TB and TB-HIV issues in Cambodia over the next few years. While USAID/C has not yet identified specific activities for funding, its strategy is likely to support the following illustrative areas: (a) strengthening surveillance of TB including drug resistant forms of the disease; (b) improving case detection of new cases of TB, especially in people also infected with HIV; (c) maintaining high treatment success rates; (d) expanding DOTS services to lower-level health facilities; and (e) strengthening collaboration with other partners such as NCHADS, communities and NGOs.

USAID/Cambodia Funding: In late CY 2000, under a new Agency-wide expanded response to the global HIV pandemic, Cambodia was identified as one of four Rapid Scale-Up countries world-wide (and the only one outside Africa). At the same time, Cambodia was also designated as a priority country for TB control. Funding for HIV/AIDS activities increased significantly, from approximately \$2.5 million in FY 00 to approximately \$8.25 million in FY 01, while the mission received TB funds (\$1.923 million) for the first time in FY 01. In terms of HIV/AIDS and other infectious diseases, the program planning levels are approximately \$10 million per year -- approximately \$7.0 million for HIV/AIDS, \$2.0 million for TB, and \$1.0 million for other infectious diseases and children affected by AIDS. New funding projections are expected soon and may replace these planning figures.

4.17 CDC/Global AIDS Program (GAP) proposed assistance to HIV/TB activities

In 2001, Cambodia was identified as one of the countries targeted for the United States Government's (USG) response to the global problem of HIV/AIDS infection. Subsequently, in May 2001, an assessment team of technical experts from CDC conducted an in-country assessment of HIV/AIDS-related activities to determine areas in which CDC could best be involved in the delivery of HIV prevention and care services in Cambodia as part of the USG effort. The report of that team assessment, which is on file with USAID/Cambodia, delineated team observations in key HIV program areas. Among others, these areas included voluntary counseling and testing, AIDS Care, laboratory services and capacity, TB, administration and management, and monitoring and evaluation. Based on the CDC assessment, the TBCTA team made initial recommendations to be undertaken by CDC's Global AIDS Program (GAP) upon in-country placement of staff. The recommendations include:

- Strengthen laboratory capacity, especially to support HIV testing for VCT, and surveillance and care of STIs and AIDS opportunistic infections (including TB)
- Support policy and program development for blood safety, VCT, AIDS care, TB/HIV, laboratory standards, etc.
- Support national capacity in monitoring and evaluation
- Support training for capacity development
- Support behavior change and stigma reduction activities with focus on youth
- Support an integrated approach within one or two provinces and/or operational districts to strengthen linkages between and build synergy within HIV/AIDS, STI, and TB services.

With these stated priorities and activities, as well as the associated resources to be made available to support them, the CDC-GAP program for Cambodia would be a highly beneficial and effective partner – along with USAID/W (ANE and BGH) and USAID/C -- for helping to support the integration of HIV/AIDS and TB services.

5. Summary of Conclusions

5.1 SWOT NTP

The success of the WHO recommended DOTS strategy depends on the implementation of a five-point package TB control policy package:

- 1) Government commitment to a National Tuberculosis Program;
- 2) Case detection through case-finding by sputum smear microscopy examination of TB suspects in general health services;
- 3) Standardized short-course chemotherapy to, at least, all smear-positive TB cases under proper case management conditions;
- 4) Regular, uninterrupted supply of all essential anti-TB Drugs;
- 5) Monitoring system for program supervision and evaluation.

The key features of the WHO recommended NTP are:

- 1) NTP has a central unit.
- 2) NTP manual available at district level.
- 3) A recording and reporting system using standardized registers.
- 4) A training program covering all aspects of the policy package.
- 5) Nation-wide network of microscopy services in close contact with PHC services and subject to regular quality control.
- 6) Treatment services within the PHC system, with priority for directly observed Short-course chemotherapy.
- 7) Regular supply of Drugs and diagnostic materials.
- 8) Plan of supervision.
- 9) A project development plan, with budget details, funding sources, and responsibilities.

A Strengths, Weaknesses, Opportunities and Threats analysis of current NTP achievements and operations in implementing the policy package and key NTP features shows the following results:

Strengths

DOTS package:

- The strong political commitment to TB control demonstrated by the adoption of the DOTS strategy in 1994 and the establishment in 1995 of the National Committee for TB control, headed by the Prime Minister.
- The Joint Health Sector Review identified that health services should give priority to key public health services.
- TB is included in the MPA at the HC level.

- A network of 142 laboratories for direct microscopy for AFB is in place in all ODs serving on average 80,000 population per laboratory.
- In 2000 and 2001 DOTS was expanded to nearly 50% of the MPA implementing HC's in the country.
- DOTS is provided to all smear-positive cases diagnosed and the cure-rate achieved is 90%, well above the WHO target of 85%.
- Anti-TB Drugs are available without interruptions in all DOTS implementing HC's and hospitals.
- A HMIS system is in place based on laboratory registers in the diagnostic units, treatment registers in the DOTS units and OD TB registers at the OD level.
- The level of primary MDR TB in Cambodia is negligible.

Program management and planning:

- The program has a Central Unit at CENAT and clear technical guidelines.
- Policies and strategies and a Strategic Plan 2001-2005 have been developed.
- A training program is being implemented. In 2000, more than 600 HC, OD, provincial and central staffs were trained in training courses at all levels and abroad.
- A program for supervision is implemented achieving 78% of the target in 2000.
- An Inter-Agency Coordinating Committee was established in 2001.

Weaknesses

DOTS package:

- The quality of direct microscopy is inadequate in one third of the laboratories and moderate in one other third. Only one third of the laboratories perform according to the required standards.
- A high false-positive rate of 5,3% of diagnostic smears is observed.
- The proportion of smear-positive suspects is well above the levels observed in other well-established DOTS programs in high TB prevalence countries.
- For various reasons a considerable proportion of patients are diagnosed in an advanced state of disease. Contributing to this is the lack of awareness about TB, current health seeking behavior practices, low priority for using public health facilities and access to health services.
- In 2000, only 55% of Cambodians had geographical access to primary level health facilities as defined in the Health Coverage Plan, meaning they live within a 10 km radius or two-hour walk of a health center. Thus, by the end of 2001, only about a quarter of the population had access to ambulatory DOTS at the HC level. The NTP has planned to increase DOTS expansion to 90% of MPA implementing HC's by the end of 2000. Nonetheless, ambulatory DOTS will still only be in reach of about 50% of Cambodians.
- The NTP and the health services lack facilities for diagnosis of smear-negative TB. So the proportion of smear-negative TB cases started on treatment is too low.

Program management and planning:

- The capacity for planning and management of NTP staff at all levels is not yet well developed.

- Financial flows for TB control activities are complicated using different systems depending on the source of funding. In particular, World Bank funds for TB activities have been difficult to access resulting in considerable underspending.
- Although a Strategic Plan has been developed, the NTP still lacks a comprehensive development plan with measurable programmatic objectives, related activities, inputs, expected outcomes, time frame and budget showing the different sources of income per collaborating partner and activity group.
- Current planning is too centralized taking insufficiently into account the opportunity to involve the PHDs in planning and implementing DOTS at the OD level. While TB activities are included in the MPA, coordinated planning of TB control as part of the OD and provincial health plans has still to be developed.
- Current external support to the NTP relies mainly on JICA and Japanese Government support. It is not yet clear how full financing of the 2001-2005 plan will be secured.
- The Joint Sector Review concluded that National programs, while mostly effective, are poorly coordinated and integrated with other MOH functions. The review recommends strengthening the involvement of national program staff and provinces in policy and strategy health planning.

Opportunities

DOTS package:

- Opportunities to improve the quality of the laboratory network exist in a thorough assessment of factors underlying the high false positive rate and high rate of smear-positive suspects. There is no need to create additional microscopy centers as the current coverage is in accordance with IUATLD and WHO recommendations.
- DOTS coverage could be extended further into the community by introducing community based DOTS delivery systems. In view of the excellent collaboration of the MOH and a range of NGOs involved in health care delivery and community based health initiatives the NTP has an opportunity to develop such approaches in close collaboration with the NGO sector.
- The existence of FBCs, that are functioning well in some 50% of the ODs offers another opportunity to decentralize DOTS further into the community.

Program management and planning:

- The new Sector Strategy of the MOH aims at strengthening coordination with the Disease Programs. The process of developing the Strategy offers an excellent opportunity to the NTP to integrate core planning and management activities for TB control into the overall Health Strategy.
- The NTP and MOH have established strong internal and external partnerships for TB control. In particular, the WPRO Stop TB Project and the TBCTA offer new opportunities for further development of the program in regard to TA, planning and management.
- The emerging collaboration with NCHADS offers an opportunity to develop and implement a policy and strategy for care and support to HIV/TB cases and PLWHAs.

Threats

- The main threat to TB control is the emerging HIV epidemic. It is estimated that until 2005, the annual number of notifications might double as a result of the influence of HIV, the increase of the population and the effect of program expansion.
- A major challenge to the NTP is to maintain a high cure rate while decentralizing DOTS as the number of cases increases.
- Sustainability of program funding for the period 2001-2005 needs to be secured as a matter of priority.
- The quality of TB diagnosis and treatment by private health providers is uncontrolled and a potential risk in view of the development of MDR
- The introduction of user fees may have a negative influence on early reporting and diagnosis of TB in particular among the poor.
- The relative capacity and skills of health staff and low wages may affect the quality of DOTS due to lack of interest and motivation.
- The need to provide some kinds of work incentive and additional funding to ODs to ensure that DOTS is well delivered.
- The missed opportunity to actively engage in the Health Sector Strategy development process.

5.2 Health Sector Reform and the National Tuberculosis Program

To date, the main approach of the NTP has been TB treatment through hospitalization. With broader health sector reforms being undertaken by the MOH, in 2000 the NTP, in collaboration with WHO and JICA, implemented a pilot study to examine the feasibility and effectiveness of decentralized DOTS delivery at the HC level. The study was conducted in 9 HC's (4 with microscopy facilities and 5 without microscopy) of 7 ODs.

During the study, more than 90% of cases from the HC catchments successfully received DOT through the HC's. It was also shown that a case detection rate of more than 70% could be achieved (current case detection is <50%) and that DOTS implementation through HC's improved the access of women and the poor to TB services. An added benefit was that community confidence in the HC's was strengthened and health service utilization was improved. A potential disadvantage was the possibility for a decline in the quality of sputum smear microscopy. After the successful results of this pilot study, the NTP has committed to nationwide implementation of DOTS through HC's. It is planned to establish model operational districts with effective technical backup from TB Units at the Referral Hospital level and to expand DOTS to more than 250 HC's in 2002.

This process will be undertaken in collaboration with NGOs. CARE has already undertaken discussions with the NTP to provide support in HC's of five provinces for DOTS training, implementation, supervision, logistics, transportation, drug control and IEC. There is wide scope for future NGO involvement in DOTS expansion at the HC level, which could be funded through USAID. In addition, some NGOs also have a comparative advantage in the provision of ambulatory DOTS for TB/HIV co-infected patients.

In the future, the work of NGOs will require close coordination with the NTP to ensure uniform DOTS coverage throughout the country and to avoid a “piecemeal” approach. This collaboration could be facilitated through national workshops of NGOs (one such meeting has already been convened by CENAT). In addition, partner agencies could also provide increased direct program support to provincial level staff for DOTS expansion.

Baseline Demand Surveys have shown that private health providers, especially private drug stores, are often the first choice for people when ill, even for the poor. Hence, there is a need to further investigate the extent and nature of tuberculosis treatment in the private sector, particularly in urban areas, and to increase the collaboration of the private sector with the NTP in accordance with NTP policies and strategies. This issue could be addressed through operational research supported by NTP partners, including USAID.

The National Health Sector Strategy, 2003 – 2007, is currently under development. It will be important for the NTP to take an active role in this planning mechanism and integrate their strategy and plans with other major health programs, including the HIV/AIDS, in the health sector development process. Capacity building in planning and management of national and provincial TB staff could be developed by setting-up training programs within Cambodia (for example, by CDC). USAID could also fund TB staff to attend the IUATLD Hanoi training course and provide scholarships for public health degrees overseas. A detailed TB program development plan should also be prepared, including specific targets, timeframes and indicators, building on the “National Health Strategic Plan for Tuberculosis Control 2001 – 2005” which has already been drafted.

5.3 NTP strategy 2001-2005

The National Health Strategic Plan for Tuberculosis Control 2001-2005 provides a strong basis for planning and management of TB control during the plan period. The Plan addresses all of the areas described under 5.1 and 5.2. The strategy, however, needs to be translated into an implementable action plan as described above. Such a plan would serve the purpose of resource mobilization among current and potential partners interested in supporting the NTP during 2001-2005.

5.4 NTP Financing gaps

The plan estimates that between US\$0.40 to 0.50 per capita per year is needed for basic needs for TB control in Cambodia. Roughly US\$30 million will be needed for the period 2001 to 2005. This amount does not include financial requirements for food supplies from WFP. It also does not include financial input for technical assistance to the program. The budget for drugs accounts for around 20% and salaries make up 14% of the total budget required. Management, capital investment and capacity building take up 21%, 16% and 14% respectively. IEC/research/advocacy and diagnosis require 12% and 4% of the overall budget, respectively.

Funding of the 5-year plan budget has not yet been secured. JICA support at the rate of about US\$500,000 per year will continue until mid-2004.

During 2002, a mission from Japan will visit the program to advise the Japanese Government about potential grant aid to purchase TB drugs at the cost of US\$600,000 per year. Negotiations with WHO, CIDA (Canada), Japan's MOH, AUSAID and USAID are underway seeking support to subcomponents of the plan.

A proposal for support to TB control in the amount of US\$8.5 million has been prepared to be included in the Health Sector Support Project which is currently being developed by ADB/WB/DFID and the RGC. The new project would cover the period 2003-2007 and the total budget would be approximately US\$100 million, of which three quarters would be on a loan basis and one quarter provided as a grant.

WFP support will run through 2003. The NTP expects that WFP will continue support to the program in the future.

5.5 NTP-NCHADS collaboration

The MOH is committed to addressing the growing issues of TB/HIV by developing an integrated approach to providing HIV/AIDS and TB prevention and care services. To initiate the process of coordinating activities of the two vertical programs for TB/HIV, in 2001 the MOH formed a national working group comprised of high-level staff of NCHADS and CENAT to develop the framework and action plan. The working group currently meets on a monthly basis to exchange information and to discuss general programmatic issues related to TB/HIV and creating linkages between the two programs. Additionally, the MOH staged a JICA-supported TB/HIV symposium in 2001 with staff of both programs at the central level and with NGOs to provide information on the specific effects of the two combined epidemics. To date, however, the framework and strategic plan for an integrated approach to TB/HIV have yet to be developed.

6. Summary of recommendations

The overall objective of the TBCTA Team visit is to provide clear implementable recommendations to USAID/Cambodia on the most strategic use of mission TB funds in the context of the NTP, health sector reform, HIV/AIDS and the fact that Cambodia has been designated by USAID as both a "Rapid Scale-Up" country for HIV/AIDS and a priority country for TB control.

The team has formulated its recommendations in the form of options while taking into account the MoH's National Health Strategic Plan for Tuberculosis Control 2001-2005, USAID/Cambodia's Interim PHN Strategy 2002-2005, and options or opportunities for ANE Bureau and CDC [TB and GAP] interventions.

- The main goal of the NTP in Cambodia is to contribute to improving the health of the Cambodian people in order to contribute to socioeconomic and poverty reduction by reducing the morbidity and mortality rates due to TB.
- The main objectives of the NTP are to ensure equity and access to TB services and, for infectious sputum smear positive TB cases, to maintain a high cure rate of more than 85% and a high case detection rate of at least 70% by the end of 2005.

- USAID/Cambodia’s 3-year follow-on health assistance strategy supports a dual approach of: (a) rapid scale up and national level expansion of successful HIV prevention activities which change behavior and reduce transmission among high risk groups; and (b) a more comprehensive health systems strengthening approach to meeting the broader reproductive, family health and infectious disease needs of Cambodia’s largely rural population.
- USAID/Cambodia’s Strategic Objective for the PHN sector is: *Increased Use of High Impact HIV/AIDS and Family Health Services and Appropriate Health-Seeking Behaviors*. This strategic objective will be supported by four interconnected Intermediate Results: Increased access to information and services (IR1) ; Strengthened capability of individuals, families and communities to protect and provide for their own health (IR2); Improved quality of information and services (IR3); and Improved capacity of health systems (IR4).

The following recommendations are grouped according to the sequence of ten “Outputs” described in the NTP strategic plan entitled “National Health Strategic Plan for Tuberculosis Control 2001 – 2005, dated November 2001 [pages 6 – 15]. The support which is suggested to USAID relates directly to activities described under the main objectives and activities related to the respective output. For each option: (1) potential collaborating partners are suggested; (2) a tentative costing provided; and (3) a funding mechanism(s) is suggested.

6.1 Policies, Plans and Guidelines (Output 1)

NTP Activity: “ *To develop, with NCHADS, specific strategies addressing TB/HIV issues and to formulate and implement action plan to reflect these strategies*”.

To assist the MoH in developing the framework and action plan for coordinating activities of the NTP and NCHADS to integrate HIV/AIDS and TB services, the team recommends, as an initial step, conducting a workshop for developing collaborative TB and HIV/AIDS program activities. The specific objectives would be:

- to promote collaborative implementation of TB and HIV/AIDS control activities between NTP and NCHADS
- to identify resources and effective partnerships (NGOs) to support the joint interventions
- to develop specific proposals and plans of work for phased implementation of collaborative TB and HIV/AIDS program activities (referral system for screening, home-based DOTS care, preventive therapy, etc.).

The expected outcomes of the workshop would be:

- documentation of rationale and evidence for implementation of TB and HIV/AIDS collaborative activities
- fostered networking and on-going communication and collaboration among the NTP and NCHADS
- identification of potential resources and partners (NGOs, CDC-GAP) to support collaborative HIV/AIDS and TB program activities
- Specific proposals and a work plan for phased implementation of collaborative TB and HIV/AIDS program activities.

Specific activities for consideration might include:

- supporting and strengthening on-going annual HIV seroprevalence surveillance among TB patients to follow trends
- development of a referral system pilot project including VCT referral for TB patients and referral for TB screening for persons with HIV identified by VCT centers
- TB education for persons living with HIV/AIDS
- provision of TB preventive therapy for persons with HIV
- home-based DOTS delivery for AIDS patients with active TB
- TB/HIV linking activities conducted by local/internat. NGOs following the workshop

Suggested participants for the workshop would include:

- staff from the policy-making level of the NAA, MoH, NTP, and NCHADS
- staff from potential NGOs with experience in providing TB and HIV/AIDS services in Cambodia, including Caritas Cambodia, CARE, Sihanouk Hospital Center of HOPE Hospital, KHANA, FHI, and Preah Sihanouk Hospital, etc.
- Relevant local/international NGOs [6.1.2]
- staff from selected provincial and operational district health departments where projects might be piloted [implemented and monitored for expansion]

Collaborating partners

Potential organizers and facilitators for the workshop would be advisors from the TBCTA including WHO-WPRO, and CDC's Division of TB Elimination, and from JATA/JICA/RIT. The workshop would be prepared and organized in close collaboration with the TB/HIV working group of the Stop TB Partnership, ProTest and UNAIDS. In addition, relevant local/international NGOs will be funded to generate TB/HIV linking activities following the workshop.

Suggested funding mechanism(s): (1) USAID/C provide Field Support funds to USAID/Washington's Interagency Agreement with CDC [6.1.1]. (2) USAID/C obligate funds into local Cooperative Agreements with relevant partners [6.1.2].

Costs

6.1.1 US\$ 50,000 in FY 2002

6.1.2 US\$ 200,000 in FY 2003 (for support to local/international NGOs for potential TB/HIV linking activities following the workshop)

6.2 Capacity building and Human Resource Development (Output 2)

NTP Activity: “ *To organize training workshops on management, data analysis and interpretation, advocacy, social mobilization etc.*”.

The proposal aims at increasing the capacity of planning and management of TB program activities at national, provincial and operational district levels. It is recommended to widen the scope of the proposed training program to HIV/AIDS managers at the three levels as well as to include general health staff responsible for health planning at the provincial and operational district level in view of further integration of disease specific program activities at these levels.

It is proposed to develop a disease control training module which would integrate general health management and disease control specific principles, in particular in regard to TB and HIV/AIDS. Ideally, the development of such modules would be contracted out to a local organization with experience in training of Cambodian staff, e.g. the NIPH, which has developed a health services management training curriculum/module for training of Cambodian staff for the PHDs and operational districts.

To ensure adequate technical content, the local organization would receive both external and local technical assistance from TB and HIV/AIDS control experts. External assistance would be provided by TBCTA, in particular through its Training Task Force. The Task Force combines the training experience of the TBCTA partners -- WHO, IUATLD, KNCV and CDC, in particular.

CDC's experience with their "Hanoi course" established a successful health management training program for provincial TB managers which could serve as a model for developing a similar program in Cambodia. CDC, in collaboration with Cambodia's National Public Health Institute and NTP, could develop a similar course/program in Cambodia.

In view of the limited skills in English it would be useful to translate into Khmer the recently revised WHO module for TB control at the district level. The module would serve the basic technical requirements for TB control which would need to be incorporated in the training curriculum of the new program to be developed by the local organization.

The training program would provide more specialized health management training abroad for selected staff, in particular for those from national and provincial levels. CDC also offers a three month training course in Atlanta as a follow up to its training program in Vietnam. Alternatively, and certainly more proximate to Cambodia, the NIPH has a close collaboration with Mahidol University in Thailand, which offers short term training courses in public health.

Collaborating partners

TBCTA Training Task Force (WPRO, IUATLD, KNCV, CDC) NIPH, NCHADS, NTP

Suggested funding mechanism(s): (1) USAID/C provide Field Support funds to KNCV/TBCTA's Cooperative Agreement [6.2.2]; (2) USAID/C provide Field Support funds through USAID/Washington's Inter-agency agreement with CDC/A [i.e., 6.2.1 and 6.2.3].

Costing

6.2.1 US\$ 25,000 for development of module in FY 2003

6.2.2 US\$ 100,000 for 2 x 3 months courses with 20 participants each per year
(Total \$300,000 for FY 2003-2005)

6.2.3. US\$ 50,000 for follow-up courses for 5 students per year to CDC Atlanta and/or Mahidol University, Thailand (Total \$150,000 for FY 2003-2005)

NTP Activity: " To send key staff for long and short term training including Masters Degree courses".

- IUATLD TB control training course in Hanoi

IUATLD offers a 3 week TB control training course in Hanoi. This course will be held once in 2002 and twice in 2003 and 2004. The course provides specialized training in microbiology, diagnosis, epidemiology and control of TB for experienced national and provincial staff involved in TB control. The NTP has sent several staff over the past years and it is expected that demand will increase in the future. The course could also serve to provide the Provincial Health Department managers with better knowledge and understanding of the epidemiology and control of TB.

It is recommended to provide funding for 5 participants per year. Participants should be well selected as sufficient skills in English are a definite requirement for attending the course.

Collaborating partners

IUATLD

Suggested funding mechanism(s): (1) USAID/C provide Field Support funds to KNCV/TBCTA's Cooperative Agreement.

Costing

6.2.4 US\$ 25,000 for 5 participants per year (Total US\$ 100,000 for FY 2002-2005)

- Master of Public Health post graduate courses

Experience from other countries and programs shows that the opportunity to attend an MPH post graduate course is a strong incentive for staff to work in a public health program. In view of the need to strengthen the NTP and other disease control programs in Cambodia with young staff a program which offers this opportunity would be attractive particularly in view of the fact that government salaries are unlikely to rise substantially in the near and medium term future. Besides strengthening the NTP, offering a career perspective and strengthening the particular program investing in this activity would be beneficial to the public health sector at large.

It is recommended that USAID consider the possibility for fellowships for one to two candidates per year recruited from the NTP and NCHADS.

Collaborating Partners

TBCTA

Suggested funding mechanism(s): (1) USAID/C provide Field Support funds through USAID/Washington's Inter-agency agreement with CDC/A. (2) USAID/C provide Field Support funds to KNCV/TBCTA's Cooperative Agreement.

Costing

6.2.5 US\$ 100,000 for two fellowships per year (Total US\$ 300,000 for FY 2003-2005)

- Participation in International Conferences of the IUATLD and meetings of the DOTS expansion working group of the Stop TB Partnership

Participation of the central level NTP staff in International and Regional Conferences of the IUATLD, meetings of the DOTS expansion working group of the Stop TB Partnership and WPRO and Global and Regional AIDS conferences would serve the purpose of international collaboration of the NTP with the global TB control initiative and the exchange of experiences of the NTP with other DOTS programs. Participation would further provide an opportunity to present results of the operational studies (see below) to the international fora of TB experts and TB managers. Participation in AIDS conference would provide insight into newly developing mechanisms for joint action with the Global AIDS community.

Collaborating partners

IUALTLD, WPRO, WHO and UNAIDS

Suggested funding mechanism(s): USAID/C provide Field Support funds to KNCV/TBCTA's Cooperative Agreement.

Costing

6.2.6 US\$ 25,000 per year (Total \$75,000 for FY 2003-2005)

Costing total to support Output 2

US\$ 950,000

6.3 Financing (Output 3)

NTP Activity: *“To develop a 5-year expenditure framework in accordance with the strategic plan with active consultation with major partners”.*

In view of the limited capacity of the NTP to develop a comprehensive development plan with measurable programmatic objectives, related activities, inputs, expected outcomes, time frame and budget showing the different sources of income per collaborating partner and activity groups, the team proposes support to the NTP in developing the framework by providing technical assistance and funding workshops.

The proposed assistance would support a project formulation process using a logical frame work approach based on a series of workshops for stakeholder analyses and identification and formulation of programmatic objectives and measurable indicators. After these workshops a writing group consisting of representatives of the MoH, NIPH, NTP and NCHADS would develop the expenditure frame work of the plan based on the outcome of the workshops. A final consensus workshop with representation of all major stakeholders and collaborating partners would complete this activity.

The process would contribute to strengthening the involvement of the NTP in policy and strategy health planning since the plan would be developed as a component of the wider Health Sector Strategy 2003-2007.

The National TB Development Plan 2001-2005 would serve as a tool for:

- planning and management of TB program implementation at the national, provincial and OD levels
- resource mobilization
- coordination of activities with NCHADS
- integration of planning and management of TB activities in the provincial and OD health development plans
- monitoring and evaluation of programmatic objectives
- monitoring and evaluation of expenditures

Collaborating Partners

TBCTA (KNCV, WPRO, CDC), MOH, NTP, NCHADS, USAID, JICA, WB, ADB, DFID and other potential donors.

Suggested funding mechanism(s): USAID/C provide Field Support funds to KNCV/TBCTA's Cooperative Agreement.

Costing

US\$ 75,000 once in FY 2003 for 3 workshops, consensus meeting and technical assistance, including contracting an organization to introduce the log frame approach and facilitate the workshops.

6.4 Service Provision (Output 5)

NTP Activity: *“To strengthen laboratory capacity at all levels and develop the quality assurance system.”*

It is proposed to invest in an operational research project/studies addressing the following areas:

- Quality assessment of the microscopy network in view of the high false positive rate observed by the current quality control system.
- A study to explore the underlying factors of the elevated level of smear-positive suspects, which is well above the level observed in other well established DOTS program in high TB burden countries.

The expected outcome of the studies would contribute to the improvement of the routine laboratory network and quality control system by identifying the causes of current poor performance. The studies would identify areas for further support, e.g. additional training of laboratory staff, training of staff in selecting and enhancing early identification of suspects etc.

Collaborating partners

CDC, NIPH, JICA, RIT

Suggested funding mechanism(s): (1) CDC/GAP; (2) USAID/C provide Field Support funds through USAID/Washington's Inter-agency agreement with CDC/A

Costing

6.4.1 US\$ 50,000 once in FY 2003

NTP Activity: *“To involve private sector, starting from pilot testing, in implementing DOTS and other TB control activities like IEC and make expansion if found to be effective”.*

It is proposed to invest in an operational research project addressing DOTS delivery through a public/private partnership in Phnom Penh; e.g., via pharmacists, drug sellers or private practitioners. The pilot would build on FHI’s work in this area in Phnom Penh. The study would provide evidence-based information about the feasibility of involving the private sector and for policy decisions on building a wider partnership with the private sector at large.

Collaborating partners

FHI, TBCTA (CDC, WPRO) (WHO/HQ working on public private partnerships for TB control)

Suggested funding mechanism(s): (1) USAID/C obligate funds into local Cooperative Agreements with relevant partners; (2) USAID/C provide Field Support funds to Population Council [HORIZONS or FRONTIERS?]; (3) USAID/C provide Field Support funds through KNCV/TBCTA’s Cooperative Agreement for WHO HQ team working on public-private partnerships.

Costing

6.4.2. US\$ 50,000 once in FY 2003

NTP Activity: *“To involve the NGO sector and the community, starting from pilot testing, in implementing DOTS, and make expansion if found to be effective”.*

It is proposed to invest in an operational research project in selected ODs studying the feasibility of DOTS delivery; e.g., via Village Health Volunteers, TBAs, FBC members, etc. The studies would provide valuable information to the NTP to design a policy for community based DOTS to extend reach beyond the HC-based DOTS delivery system in the future.

The studies are considered to very important in view of the fact that even after implementation of the Health Coverage Plan and the expansion of DOTS to all MPA providing HC’s, an estimated 50% of the population still remain out of reach of daily DOTS at the HC level.

The studies should be carried out in a number of pilot projects each studying different mechanisms for community based DOTS using different groups of DOTS supervisors as indicated above. Protocol development would be undertaken in collaboration with the WHO working group on community based TB control, which has gathered experience in a range of pilots in sub Saharan Africa. Study sites would be chosen in collaboration with PHDs, OD health departments and NGOs involved in community-based health care initiatives, such as CARE and CARITAS.

Collaborating Partners

MEDICAM, WHO, NGOs, PHDs, ODs

Suggested funding mechanism(s): (1) USAID/C obligate funds into local Cooperative Agreements with relevant partners; (2) USAID/C provide Field Support funds to Population Council [HORIZONS or FRONTIERS?]; (3) USAID/C provide Field Support funds through KNCV/TBCTA's Cooperative Agreement for WHO working group on community based TB control.

Costing

6.4.3 US\$ 150,000 once in FY 2003 for five pilots and protocol development workshop

6.5 DOTS expansion to the Health Center level (Output 6)

NTP Strategy: *“Expand the DOTS strategy to provide good quality curative care by trained staff using hospitalization, ambulatory and home care approaches, giving emphasis on the implementation of DOTS at health center level providing minimum package of activities”.*

The NTP budgets the costs for DOTS expansion in 10 ODs at US\$146,000. The list of activities carried out to implement DOTS in an OD is shown in [Annex 9](#).

In 2002, the NTP has plans to expand to 264 HC's in 23 ODs. The total estimated costs of the expansion is approximately US\$440,000. From this total, the expansion will include 234 HC's in 18 ODs in 9 provinces where there is currently a USAID/Cambodia partner presence. If USAID/Cambodia would choose to support the expansion of DOTS in these province the total amount of funds needed would be US\$ 345,000 in 2002.

The following parameters need to be considered when deciding in which geographical areas to concentrate the support to ODs:

- Size of the population and population density ([Annexes 10 and 11](#))
- Numbers of TB cases diagnosed and rate per 100,000 population by province ([Annex 7](#))
- The HIV prevalence in the adult population
- Functional Health Infrastructure ([Annex 5](#))
- Presence of USAID/Cambodia CA's providing MPA
- Numbers of HC's in OD supported by the CA

According to the NTP plan most of the expansion in 2002 will take place in the first half of the year. This plan seems ambitious, particularly in view of the fact that the NTP plans to carry out the National Tuberculosis Survey during most of 2002, which will not allow the Central Team to invest much time in the DOTS Expansion plan for most of the year. If the NTP achieves the planned DOTS expansion by 2002, 68 functional HC's will still have to be covered. Estimated costs for DOTS expansion in 2003 amount to some US\$70,000

While the team considers the DOTS expansion as a high priority for support it finds it difficult to advise on support to specific ODs in geographical areas. If USAID decides to provide funds for this activity, this decision should be based on further discussions between USAID, the NTP, MOH senior officials and USAID-funded CA's taking into account the above considerations. Tentatively the team would suggest directing support to the densely populated provinces in the South East and the provinces bordering Thailand in the Northwest.

Collaborating partners

NTP, CA's, JICA, WB, WHO country office through WPRO.

USAID/C could consider availing funds to the NTP through support to the WPRO stop TB project earmarked for DOTS expansion in Cambodia and channeled through the WHO country office.

Alternatively, USAID could provide funding through its CAs, which would coordinate with the OD health department for DOTS expansion in all HC's in the OD. The OD CoCom would serve as the forum for planning the DOTS expansion in collaboration with the PTS and NTP.

Suggested funding mechanism(s): USAID/C provide funds through USAID/Washington's WHO Umbrella Grant [as has been done by Dennis Carroll to WHO/C for malaria and dengue].

NOTE: Need to check this mechanism carefully in terms of "notwithstanding" language vis-à-vis assistance to the RGC.

Costs

US\$ 415,000 (US\$ 345,000 in FY 2003 and US\$ 70,000 in FY 2004)

6.5 IEC and Advocacy (Output 7)

NTP Activity: *"To enhance IEC activities by ways of capacity building, IEC material producing and disseminating from central level till the community".*

Creating community awareness on the symptoms of TB and the availability of DOTS at the HC level is an essential activity in view of the current late reporting of suspects.

The team proposes to continuing existing support by USAID through CA's, e.g. FHI and PSI. The focus of the support should be on the development of materials and messages geared towards the need of the communities and preferably developed with community input. It would be advisable to coordinate the development of materials and messages with the IEC department of the MOH.

Collaborating Partners

NTP, MoH IEC department, FHI, PSI

Suggested funding mechanism(s): USAID/C obligate funds into local Cooperative Agreements with relevant partners; e.g., FHI and PSI.

Costs

US\$100,000 (Total US\$ 400,000 for FY 2002-2005)

6.6 Partnership (Output 10)

NTP Activity: *"To liaise with international organizations and NGOs involved in TB control activities and identify areas of cooperation and funding for the program".*

Cambodia is one of the 22 high burden countries listed by WHO. Together, these countries account for 80% of the TB burden in the world. In 1998, the Director General of WHO launched the Stop TB Initiative to raise global awareness of the burden of TB in these countries. In March 2000, a Ministerial Delegation of Cambodia participated in the Ministerial Conference on TB and Sustainable Development in Amsterdam, The Netherlands. The Cambodia NTP is a member of the DOTS Expansion working group which is part of the Stop TB Partnership and has established close collaboration with new partners as WPRO, IUATLD and the TBCTA.

Though the NTP and its in-country partners, JICA, WB, WHO, has made considerable progress in establishing the program and DOTS expansion. However, the program still faces numerous challenges and problems. These challenges are related to providing DOTS to the majority of the population, the TB/HIV co-epidemic, improving the quality of the diagnostic network, reaching out to the poor and remote populations and the private sector. So far, the NTP has not benefited from regular external technical support to assist the program in reviewing its performance and advise on strengthening its operations.

The team proposes that USAID/C fund regular visits of a senior TB consultant to provide this service to the NTP as part of the support of the DOTS Expansion Working Group of the Stop TB Partnership to its members. This could best be effected through the TBCTA.

The technical assistance would consist of two visits per year which would provide the NTP with regular external monitoring and evaluation of ongoing program implementation. The expert would as well provide the NTP with a direct channel of communication to the WPRO Stop TB Project and the DOTS Expansion working Group.

Collaborating Partners

TBCTA, NTP, JICA

USAID could consider providing funds to TBCTA to finance the activity.

TBCTA would develop an agreement with WPRO for support to the WHO sub-regional HIV/TB office for Vietnam, Laos and Cambodia to enable the technical assistance visits.

Suggested funding mechanism(s): (1) USAID/C provide Field Support funds to KNCV/TBCTA's Cooperative Agreement; (2) USAID/C provide funds through USAID/Washington's WHO Umbrella Grant to pass to WPRO/Hanoi.

Costs

US\$ 30,000 per year for 2 technical assistance visits of 2 weeks, reporting and backstopping. [AusAID is providing salary costs for the new WPRO person in Hanoi] (Total US\$ 105,000: US\$ 15,000 in FY 2002 and US \$30,000 per year for FY 2003-2005)

6.7 Monitoring and Evaluation (Strategic Plan, page 15)

"The strategic plan implementation should be annually evaluated based on the main indicators set for the plan. Midterm evaluation should be conducted in 2003. Corrections should be made to gear forwards attaining objective by 2005. End-term evaluation should be conducted in mid 2005 prior to the formulation of the next phase plan."

NTP Activity: “Midterm evaluation should be conducted in 2003”

The team explored the idea of an external evaluation with a variety of in-country counterparts and selected donors. As a partner in that evaluation, the team proposes that USAID fund TBCTA external experts [2 international and 1-2 Cambodian experts] to join the Midterm Review in 2003. Similarly, other donors could fund external and local experts to join the team. It is suggested that the MOH request WHO to coordinate the external review since WHO has a wide experience in carrying out Country Review Missions. For example, in 1993 and 1996 WHO provided assistance to the NTP to review the program and assisted in the development of forward 5-year plans.

Collaborating Partners

KNCV, NTP, JICA, WHO, WB

Suggested funding mechanism(s): USAID/C provide Field Support funds to KNCV/TBCTA’s Cooperative Agreement. [USAID/W, WHO, WB, etc. would pay for other international and local experts for the team.]

Costs

US\$ 50,000 once in FY 2003

6.8 Total Costs of the proposed USAID assistance

The total costs of the USAID assistance would amount to US\$ 2,295,000; i.e.:

FY 02 US\$ 190,000

FY 03 US\$ 1,375,000

FY 04 US\$ 500,000

FY 05 US\$ 430,000

6.9 Options for CDC/GAP support to NTP and NCHADS

See 4.17

6.10 Options for ANE support to TB control in the region

The team recommends continuation of ANE support to WPRO/Manila as indicated in the *Summary of Regional Infectious Disease Activities with Linkages to Cambodia*.

- USAID/ANE-supported TB Adviser at WPRO/Manila. Budget US\$359,000 for 2 years (*Appendix 4 of Summary*)
- USAID /ANE-funded activities in support of the Stop TB Special Project of WHO-Western Pacific Regional Office. Budget US\$500,000 (*Appendix 5 of Summary*)

In addition, the team suggests that ANE considers funding for TB/HIV surveillance, prevention and control activities in Vietnam, Cambodia and Laos, through the new Stop TB Medical Officer

post, to be based in WHO, Hanoi and filled in the second quarter of 2002. The new office, which will be located in Hanoi, will give priority to the establishment of a Lower Mekong TB/HIV Control and Prevention Initiative enhancing close collaboration between the respective TB and AIDS Prevention and Control Programs and their partners in Vietnam, Laos and Cambodia.

Estimated costs for establishing the Initiative through country visits, meetings and subregional conferences are US\$300,000 for 2003-2005.

Suggested funding mechanism(s): (1) ANE funding to WHO for both WPRO/Manila and Hanoi. Alternatively, USAID/C provide Field Support funds to USAID/Washington's WHO's Umbrella Grant for WPRO/Hanoi.

7. Relation of NTP Outputs with Key Intermediate Results of USAID/Cambodia Interim PHN Strategy 2002-2005

7.1 IR1: Increased Access to Information and Services

Expanded access to diagnosis and treatment of TB, through expansion of the DOTS program to the HC level, will impact on the severe TB burden through the following mechanisms: a) early diagnosis of the majority of TB cases, and b) the establishment of a high cure rate by treating patients as near as possible to their residence.

IR1 is supported by:

- NTP Output 6: DOTS expansion to the HC level
- NTP Output 5: Service provision by NGOs, communities and the private sector

Results: By the end of three years:

- NTP will have developed a strategy for community-based DOTS
- NTP will have developed a strategy for private practitioners to implement DOTS
- All HCs with a Minimum Package of Activities (MPA) will provide DOTS
- 60% of new cases will be detected in the early stage of the disease
- 90% of detected cases will be cured

Illustrative activities:

- DOTS expansion to HCs in collaboration with ODs, PHDs and NTP (see Annex 9)
- Pilot studies in selected ODs on the feasibility of DOTS provision by VHVs, TBAs, FBC members etc.
- Pilot study in Phnom Penh on feasibility of DOTS provision by private health providers.

7.2 IR2: Strengthened Capacity of Individuals, Families and Communities to Protect and Provide for Their Own Health

This IR aims to increase public awareness about the signs and symptoms of TB, the availability of DOTS at the HC level, and the fact that TB can be cured.

IR2 is supported by:

- NTP Output 7: IEC and Advocacy

Results: By the end of three years:

- Improved public KAP regarding TB as demonstrated by early self-referral of possible TB patients manifesting chronic cough
- Families will bring family members with chronic cough for examination
- Community health workers and FBC members will identify potential TB patients and promote examination at the HC
- Communities will support families with TB
- Stigma of TB reduced

Illustrative activities:

- Development of IEC messages in collaboration with ODs and FBCs
- Establishment of sensitization/stigma-reducing meetings conducted by Village Development Committees
- Integration of TB awareness education in primary schools
- Development and broadcast of media spots (TV, Radio)
- Collaboration with NCHADS and MoH IEC department

7.3 IR3: Improved Quality of Information and Services

While the results of treatment achieved by the NTP are well above the WHO target of 85%, the quality of the microscopy network is still inadequate in many centers as demonstrated by an elevated false-positive rate in diagnostic smears.

The HIV-epidemic requires a coordinated approach by NTP and NCHADS to provide consistent and sustained care for HIV-positive TB cases and PLWHA.

IR3 is supported by

- NTP Output 5: Strengthen laboratory capacity
- NTP Output 1: Develop specific strategies for addressing TB/HIV issues

Results: by the end of three years:

- The quality of the laboratory network will have improved as demonstrated by a false-positive rate of less than 0.5%
- A joint NTP/NCHADS TB/HIV strategy and action plan will have been developed and established

Illustrative Activities:

- An operational research study will be undertaken to examine the underlying factors resulting in moderate function of the laboratories, and advice on remedial action
- A joint policy formulation workshop to address HIV/TB issues will be organized by NTP and NCHADS and a broad range of stakeholders to develop an action plan for the provision of consistent and sustained care for PLWHA and HIV positive TB patients

7.4 IR4: Improved Capacity of Health Systems

Although the NTP was established in 1982 and has made commendable progress in recent years, the program still has insufficient capacity for planning and management at all levels. It needs further integration in overall planning and management and would benefit from regular external technical assistance for program monitoring and review.

IR4 is supported by

- NTP Output 2: Capacity Building and Human Resource development
- NTP Output 3: Financing
- NTP Output 10: Partnership
- NTP Monitoring and Evaluation of the Strategic Plan 2001-2005

Results: By the end of three years:

- The capacity for planning and management of TB control at the national, provincial and OD level will have improved
- TB control planning will be coordinated at the MoH level and integrated with general health planning at the PHD and OD levels
- A 5-year Expenditure Framework will have been developed and financial support will have been solicited
- A planning and management course for Infectious Disease Control will have been developed in collaboration with NIPH and NTP and general health staff will have been trained
- Selected NTP staff will have received specialized Health Planning and Management courses
- A Country Review Mission will have been held in 2003
- Regular external assistance for monitoring and evaluation will have been secured

Illustrative Activities:

- Translation in Khmer of the WHO module for TB control at the district level
- Development of a training module for CDC control and planning and management, geared towards the need of PHDs and ODs
- Development of the Expenditure Framework through workshops and stakeholder analyses, identification of objectives, formulation of measurable indicators and a consensus meeting with all stakeholders
- Development of integrated CDC plans by the PHD and OD levels
- Conduct a Country Review of the NTP, providing recommendations for further program development and financing for the period 2006-2010

ANNEX 1

SCOPE OF WORK

TBCTA TEAM ADVISORY VISIT TO CAMBODIA
February 2002

1. Objective: Within the programmatic context of Cambodia's National TB Program [NTP] and Stop TB efforts, provide clear, implementable recommendations to USAID/Cambodia and USAID/Washington's Asia Near East Bureau (ANE) on the most strategic use of mission and ANE regional TB funds.

The objective is not to again assess or review the NTP. That has been done recently.⁶ However, it will be important for the team to consider the NTP/Stop TB within the broader context of the nascent health delivery system in Cambodia, the dearth of trained staff, the current HIV/AIDS situation, and the fact that USAID has designated Cambodia as an HIV/AIDS 'Rapid Scale-Up' country [one of only four in the world, and the only one in Asia]. It is also important that the team review TB-related activities currently being funded by USAID/Cambodia (e.g., CARE, Family Health International, KHANA, etc.) and the ANE,⁷ TB-assistance from other donors, and HIV/AIDS/TB activities being contemplated by the Centers for Disease Control (CDC), and the on-going work of the Naval Medical Research Unit (NAMRU). Within this context, the team is asked to provide strategic, coordinated recommendations to USAID/Cambodia and ANE regarding the maximization of USG resources for TB.

2. Background -- Cambodia:

USAID/Cambodia is currently finalizing a new 3-year interim PHN strategy – 2002-2005. The proposed strategy builds on past and current USAID assistance to Cambodia. The mission's new Strategic Objective is *Increased Use of High Impact HIV/AIDS and Family Health Services and Appropriate Health-Seeking Behaviors*. This strategic objective will be supported by four interconnected Intermediate Results:

- 5) Increased access to information and services;
- 6) Strengthened capability of individuals, families and communities to protect and provide for their own health;
- 7) Improved quality of information and services; and,
- 8) Improved capacity of health systems.

The mission strategy will also address potential synergies in PHN activities, such as those between tuberculosis and HIV/AIDS.

Demographic situation: The 1998 population census estimated the population of Cambodia to be 11.4 million, with women accounting for 51.8% of the total. The annual population growth rate--the highest in Southeast Asia--is estimated to be 2.5%. The total fertility rate (TFR) is 4.0 children per woman, and contraceptive prevalence remains relatively low at 19%. Approximately 42.5% of the population is under the age of 15--an age structure that implies

⁶ See attached: (a) "CDC Global AIDS Program Cambodia Country Assessment", May 16-30, 2001; "Cambodia GAP Assessment Team Report—TB Care and Prevention Services," May 21-26, 2001 memo from Charles D. Wells; and (c) Leo Blanc's Cambodia report

⁷ See attached: "Summary Of Regional Infectious Disease Activities With Linkages To Cambodia", September 13, 2001.

continued high rates of population growth, even in the event of significant declines in fertility. Life expectancy at birth is 58.6 years for females and 50.3 years for males.

Health Sector: The RGC launched its ongoing health sector reform program in 1995 with the presentation of the National Health Coverage Plan (1996-2000). Key features of the plan included the creation of the Operational District (OD)--a population-based unit comprising anywhere from 100,000 to 300,000 people--as the functional focus of health reform efforts; designation of health centers (HC) as the first level of health care; and a stated intention to provide a Minimum Package of Activities (MPA) and the Complementary Package of Activities (CPA) at the health centers and referral hospitals respectively. The plan called for the establishment of 940 health centers. As of late 2001, approximately 700 health centers were in place (75% of the total) in 74 Operational Districts around the country. Of the 67 referral hospitals called for in the plan, only 15 are currently in place. The range and quality of services offered at these facilities vary widely.

The trend in RGC expenditures for health is positive. The Government's per capita budget for health in 1998 was about \$1.00, representing approximately 0.3% of GDP. This rose to \$1.70 in 1999 (0.8% of GDP), and to \$2.10 in 2000 (1% of GDP). Most observers predict that these increases are likely to continue in the years ahead.

Problem Analysis/General: Despite this encouraging budgetary trend, the health sector faces enormous and persistent challenges. With regard to safe motherhood, these include a high maternal mortality ratio (437/100,000 live births); low antenatal attendance at health centers; a low level of deliveries assisted by trained health providers; and harmful traditional practices during pregnancy, childbirth and postpartum. Child health challenges include high infant, child and neonatal mortality rates (95/1000, 125/1000 and 37/1000 live births, respectively); low use of oral rehydration salts, low EPI coverage (40%); low rates of exclusive breastfeeding (5.4%) of infants below five months of age; and indiscriminate use of antibiotics for childhood infections. With respect to birth spacing, they include low contraceptive prevalence (19%, modern methods); large unmet needs for family planning services; and a high prevalence of unsafe abortion. Prevention of HIV/AIDS and transmission of STDs is hampered by low use of condoms with intimate partners, a lack of counseling and testing services, and a paucity of information and services geared to the needs of especially vulnerable groups such as youth and internal migrant populations.

The still nascent public health system is not yet playing a major role in responding to these challenges. That system's existing workforce, while perhaps excessive in number, is grossly inadequate in skills; salaries are so low as to create little or no incentive to work; and supplies and equipment at health centers are not adequate or appropriate for many health care situations. Not surprisingly, most Cambodians look to other, non-government outlets (pharmacies, traditional healers, and Drug sellers) as their preferred sources of services for most health problems, including delivery assistance, birth spacing methods, STD Drugs and abortion. A number of studies have suggested, however, that very few of the personnel at these outlets are familiar with common symptoms of reproductive health problems, correct Drug dosage or potential side effects, or correct management procedures for many of the health problems they

treat. In consequence, most Cambodians are receiving very poor quality of care, and little value for their money, at either public or private sources of health services.

Problem Analysis/Specific:

HIV/AIDS: The HIV/AIDS epidemic in Cambodia threatens to undermine successes that could be achieved through other development efforts in economic growth and the reduction of morbidity and mortality. While there has been an apparent stabilization of seroprevalence in certain target groups, rates are too high in antenatal women (over 4% in several provinces), and there may be a movement of the virus into the general population. An estimated 169,000 adults are currently living with HIV/AIDS. An estimated 13,000 children have lost one or both parents to AIDS. Pediatric AIDS is not yet a major killer of children, but is likely to increase, particularly in the absence of any efforts to prevent mother-to-child transmission. Behavior change has occurred; again, in some target groups, but in general, high-risk sexual behavior remains unacceptably high.

Constraints to addressing the HIV/AIDS problem in Cambodia include the lack of condoms, especially in rural areas; continued and widespread risky sexual behavior; limited public sector diagnosis and treatment of STDs and inadequate and often ineffective private sector treatment; disempowerment of women; continuing vertical orientation of the health sector; lack of trained health workers, supervisors and managers; low salary levels of health workers; a virtual absence of voluntary counseling and testing centers; no active program for the prevention of mother-to-child transmission; limited capacity of the curative sector to effectively diagnose and treat symptoms of AIDS; a lack of resources and capability to provide social services for persons living with HIV/AIDS; and the stigma associated with HIV.

Since 1993, USAID has been an active and important partner in the battle against HIV/AIDS. USAID's support with other donors of policy change, national information campaigns, targeted interventions with high risk populations and critical surveillance and behavioral studies have contributed to heightened HIV awareness, behavior change and reduced prevalence among key populations and good use of resources. There are good models of successful interventions with high-risk populations that can be scaled up. While awareness of HIV/AIDS is high and concern is increasing, the social environment is still one of the most permissive, wherein there is a very active sex trade and many participate in high-risk behavior. A quarter of men engaging in commercial sex still do not always use condoms. Moreover, men who have unprotected sex outside of marriage with commercial sex workers and "sweethearts" put their own wives at risk of HIV infection as well. Current condom social marketing programs do not reach into the rural areas where 80% of Cambodia's population live. There is a considerable turnover among sex workers, and little is known about what happens to them once they leave brothels.

Infectious Diseases: Malaria, dengue hemorrhagic fever (DHF), and tuberculosis (TB) continue to be leading causes of morbidity and mortality. The emergence of Drug-resistant malaria strains has been confounded by extensive national and cross-border mobility. There has been increasingly large DHF epidemics every two to three years, the largest and most recent occurring in 1998. Even though case fatality rates due to DHF can be maintained below 0.5% with proper case management (as in Thailand), rates in Cambodia can be as high as 15-20% in certain

locations. In recent years, transmission has spread from the urban centers of Phnom Penh and Battambang to smaller towns and villages.

Capacity Building: The bulk of Cambodia's public health system staff was recruited and trained quickly during the Vietnamese occupation of 1979-89. Many of the skills these new personnel learned were/are not adequate to respond to the country's burden of disease. Moreover, the planning, management and supervisory systems and skills needed to support the health care delivery system are similarly weak. Local and international NGOs are helping to fill this gap in many important ways; but such heavy reliance on external assistance should not delay the strengthening of the public health system's own capacity to meet citizens' basic health care needs.

3. USAID/Cambodia Funding: In late CY 2000, under a new Agency-wide expanded response to the global HIV pandemic, Cambodia was identified as one of four Rapid Scale-Up countries worldwide (and the only one outside Africa). At the same time, Cambodia was also designated as a priority country for TB control. Funding for HIV/AIDS activities increased significantly, from approximately \$2.5 million in FY 00 to approximately \$8.25 million in FY 01, while the mission received TB funds (\$1.923 million) for the first time in FY 01. In terms of HIV/AIDS and other infectious diseases, the program planning levels are approximately \$10 million per year -- approximately \$7.0 million for HIV/AIDS, \$2.0 million for TB, and \$1.0 million for other IDs and children affected by AIDS.

Other Royal Government of Cambodia (RGC) and other donors are also providing funding to the NTP. The TBCTA team should review all funding to the NTB when providing recommendations to USAID.

4. ANE Funding: See attached: "Summary Of Regional Infectious Disease Activities With Linkages To Cambodia", September 13, 2001.

Purpose: Within the programmatic context of Cambodia's National TB Program [NTP] and Stop TB efforts, provide clear, implementable recommendations to USAID/Cambodia and USAID/Washington's Asia Near East Bureau (ANE) on the most strategic use of mission and ANE regional TB funds.

Deliverables:

1. Upon arrival, the team will be briefed by USAID and CDC officials. At that time the SOW will be reviewed and modified, as necessary.
2. A comprehensive report ⁸ that Draws upon previous assessments and documents of Cambodia's NTP and Stop TB efforts. The report should address the following points: (1) the nature of the TB problem and where it most serious – within Cambodia and its immediate neighbors; (2) institutional and donor resources currently available for TB, as well as future projections of funding requirements; and (3) USAID's comparative advantage in supporting Cambodia's TB program vis-à-vis other donors. The report

⁸ The report must be in English and in a format acceptable to USAID – i.e., MS Word and Excel.

should provide clear, implementable recommendations to USAID/Cambodia and the Asia Near East Bureau on the most strategic use of mission and ANE regional TB funds over the next 3-5 year period. Based on the recommendations, USAID/Cambodia will incorporate these recommendations into its new 3-year interim strategy – 2002-2005.

The report should provide USAID/Cambodia with the information necessary to proceed with the design of future activities and the selection of appropriate partners for the interim strategy. In addition, the team should identify appropriate technical assistance required by the MoH and other local partners to implement and monitor the activities.

Specifically, the report should include:

- An executive summary and a list of acronyms and persons interviewed;
 - Recommendations regarding administrative/health system level and geographical focus of the USAID/CDC supported elements of the program;
 - Opportunities for capacity building of Cambodian institutions and organizations (organizationally, programmatically, and human resources);
 - An estimate of the quantities and organizational/funding source for Drugs, equipment and other supplies;
 - As estimate of the resources needed to accomplish USAID/CDC objectives (within the context of the overall NTP);
 - Recommendations regarding further technical assistance and/or the use of USAID-supported local Cooperating Agencies and NGOs.
 - Recommendations for a monitoring plan, including universally accepted indicators and results, and source and quality of information.
3. Prior to departure, the team will debrief USAID and CDC officials.
 4. The Team Leader is responsible for all deliverables, and is expected to leave the final Draft of the report with USAID prior to departure from Cambodia.

Team Composition:

As agreed between USAID/Cambodia and the TBCTA's Board of Directors at the BoD meeting in The Hague, August 27 - 28, 2001, the team will consist of the following TB experts:

- Dr. Maarten Bosman, KNCV, Team Leader
- Dr. Charles Wells, CDC/Atlanta
- Dr. Marcus Hodge, WPRO/WHO

Level of Effort: The level of effort is planned for approximately 2-3 weeks starting on/about February 4, 2002. Additional days will be allowed for team members to review background materials (maximum of 2 days) prior to arrival in country as well as completion of the final report (maximum of 3 days).

The Team Leader will be responsible for completing the final product. He will be responsible for any/all final revisions, editing and formatting of the Draft report and will leave the final Draft

with USAID/Cambodia prior to his departure. USAID/Cambodia will be responsible for sharing the report with USAID/W and CDC. Unless discussed and agreed further, the report will be for internal distribution only with USAID/Cambodia.

Methodology:

The above tasks will be completed through the following means: (1) review of recent NTP assessments and other documents; (2) meetings with USAID/Cambodia, CDC and NAMRU officials, the National TB Program (CENAT) director and staff; appropriate MoH officials; RGC's National Laboratories; other donors; USAID/C-supported Cooperating Agencies currently involved in TB activities – e.g., CARE, Family Health International, KHANA, etc.; and other potential local partners – e.g., Sihanouk Hospital Center of Hope, etc.; and (3) field visits, as appropriate.

ANNEX 2**List of persons met****Ministry of Health**

- Dr. Mam Bun Heng, Secretary of State for Health
- Professor Eng Huot, Director General for Health
- Dr. Lo Veasna Kiry, acting Director, Department of Planning and Health Information

National AIDS Authority

- Dr. Tia Phalla, Secretary General

National center for Tuberculosis and Leprosy control (CENAT) and National Tuberculosis Program (NTP)

- Dr. Mao Tan Eang, Director
- Dr. Touch Sareth, vice Director
- Dr. Tieng Sivanna, Chief of Statistics Planning and IEC
- Dr. Khun Kim Eam, vice Chief of Statistics
- Mrs. Ton Chhavivann, Chief Laboratory Department

National center for HIV/AIDS, Dermatology and Syphilis (NCHADS)

- Dr. Hor Bun Leng, Deputy Director
- Dr. Seng Sut Wantha, Deputy Director

USAID/CAMBODIA

- Lisa Chiles, Mission Director for USAID/Cambodia and mainland Southeast Asia
- David Piet, acting Director, Office of Public Health, USAID Cambodia and mainland Southeast Asia
- Daniel Levitt, Health/Population Specialist, Office of Public Health
- Ngudup Paljor, MCH Advisor, Office of Public Health
- Dr. Chantha Chak, Development Assistance Specialist, Office of Public Health

WHO

- Dr. Henk Bekedam, acting WHO Representative & team leader, Health Sector Reform project, Cambodia

Japan International Cooperation Agency (JICA), Phnom Penh

- Dr. Ikushi Onazaki, JICA TB advisor

World Bank

- Dr. Pratap P. Jayavanth, Tuberculosis Program Coordinator, PCU / World Bank

Asian Development Bank

- Dr. Peter Godwin, Regional Adviser

International HIV/AIDS Alliance

- Mr. Andy Bauman, consultant
- Mr. Peter Gordon, consultant in sexual health, HIV and development

CARE Cambodia

- Ms. Jesse Rattan, health sector coordinator

Family Health International

- Dr. Chawalit Natpratan, Country Director
- Pratin Dharmarak, program manager, Cambodia

KHANA

- Ms. Pok Panhanvichetr, executive Director

Medecins Sans Frontieres, MSF Holland – Belgium, Phnom Penh

- Dr. Wim van Damme, Medical Coordinator

Field trip of Dr. Marcus Hodge (WHO), Mr. David Piet (USAID), and Dr. Ikushi Onazaki (JICA)

Kampong Speu province**Reproductive Health Association of Cambodia (RHAC)**

- Dr. Var Chivorn, associate executive Director Sam Oeun, chief, Trapeang Krleing Health Center

National Institute of Public Health

- Dr. Sam An Ung, Activity Director

Naval Medical Research Unit 2 (NAMRU-2)

- Dr. Jim Olson, Epidemiologist/Lab Manager

Kampong Som Province (Sihanoukville)

- Dr. Kiv Bun Sany, Director, Provincial Health Service and deputy Chairman, Provincial aids Committee, Sihanoukville
- Dr. Khem Saron, vice Director, Provincial Health Service
- Dr. Long Ngeth, Provincial TB Supervisor, Sihanoukville
- Dr. Ouk Saram, Director, Sihanoukville Provincial Hospital TB unit
- Dr. Yang Vissot, Chief, Veal Rinh Health Center

Field trip of Dr. Charles Wells (CDC), Mr. Chantha Chak, USAID**Siem Reap Province**

- Mr. Borithy Lun, advisor, logistics unit, Reproductive and Child Health Alliance (RACHA)
- Kong Saith, deputy Director, Soth Nikum Operational District
- Mr. Seng Sophy, Samrong Health Center, Dam Daek commune
- Ms. Bernadette Glisse, coordinator, CARITAS Cambodia

Bantey Meanchey Province

- Dr. Chhum Vannarith, Director, Bantey Meanchey Provincial Health Department
- Mr. Muon Sopha, Provincial Coordinator, CARE Cambodia
- Dr. Lydia Ettema, HIV/AIDS advisor, CARE Cambodia

Field trip of Dr. Maarten Bosman, Dr. Mao Tan Ieng, Mr. Ngudup Paljor**Kampong Chhnang Province**

- Dr. Tek Saroeun, Director PHD
- Dr. Prak Vonn, Director Kampong Tralach OD
- Mr. Ieng Siv Ngeng, Director Kampong Chhnang OD
- Mr. Keo Samon, PTS
- Mr. Lim Leang Ngoun, PAC
- Mr. Sam Hing, MCH Assistant CARE

Field trip of Dr. Maarten Bosman, Dr. Khun Kim Eam, Mr. Ngudup Paljor**Takeo Province**

- Dr. Om Sok Khon, Director PHD
- Mr. Bun Kompheak Jeudi, Chief TB program PHD

AMDA

- Dr. Akhlakur Rahman Sowdagor, Project Officer
- Mr. Bamba Kenichi, Project Manager

Ang Roka OD

- Mr. Hean Chim, TB supervisor OD
- Dr. Iao Phea, Chief of TB RH
- Mr. Prak Saotola, Liaison officer for TB and Leprosy

Prey Kabas OD

- Mr. Hing Samith, TB supervisor OD
- Dr. Pho Thol, Chief OD
- Mr. Chea Ang, Chief TB RH

ANNEX 3 Itinerary

SCHEDULE FOR TBCTA TEAM
January 13- 30, 2002

Date	Time	Activities	Accompanying USAID Staff	Location	Confirmation
Saturday and Sunday 01/12-13/02	Arrival time and date (please see above)	Team arrival	Pick up by USAID Expediter		
Monday 01/14/02	8:00 a.m.	Meeting with USAID/OPH to review SOW and Plan for Activities	OPH Team	USAID small conference room	Confirmed
	11:00 a.m.	Briefing with Ms. Lisa Chiles Mission Director		USAID small conference room	Confirmed
	1:30 p.m.	Review SOW and Planning (cont.) PowerPoint presentation by OPH, Interim PHN Strategy (2002-2005)	OPH Team	In David's Office	Confirmed
	3:30 p.m.	Dr. Eng Huot, Director General for Health, MoH		MoH	Confirmed
Tuesday 01/15/02	8:00 a.m.	Security briefing with RSO		USAID small conference room	Confirmed
	9:00 a.m.	Dr. Mao Tan Eang, Director CENAT Dr. Ikushi Onazaki, Chief Advisor CENAT/JICA Dr. Pratap Jay Avanth, WB Advisor for CENAT	David/Chantha	TB Center	Confirmed
	2:00 p.m.	Dr. Peter Godwin, WB		NCHADS Office	Confirmed
	3:30 p.m.	Dr. Mean Chhi Vun, Director NCHADS Dr. Seng Sut Wantha, Deputy	David/Chantha	NCHADS Office	Confirmed
	4:45 p.m.	Dr. Henk Bekedam, Acting WHO Representative		WHO	Confirmed

Date	Time	Activities	Accompanying USAID Staff	Location	Confirmation
Wednesday 01/16/02	8:00 a.m.	Dr. Chawalit Natpratan, Country Director, FHI Ms. Pok Panhavichetr, Executive Director, KHANA Ms. Jesse Rattan, Health Sector Coordinator, CARE	OPH team	USAID Small Conference room	Confirmed
	10:30 a.m.	H.E. Dr. Mam Bun Heng, Secretary of State	David/Chantha	MoH	Confirmed
	2:30 p.m.	Participate in Inter –Agency Coordinating Committee at CENAT		CENAT	Confirmed
	5:30 p.m. Charles and Chantha depart via Siem Reap Airway for Siem Reap				

Note:**Arrival and departure date for TBCTA Team:****Arrival/ Departure**

1. Dr. Maarten Bosman (KNCV): TG 698 on 01/13/02 at 18:45 p.m. TG 699 on 01/30/02 19:45 p.m.
2. Dr. Charles Wells (CDC): TG 696 on 01/12/02 at 9:25 a.m. TG 697 on 01/27/02 10:20 a.m.
3. Dr. Marcus Hodge (WHO/WPRO): TG 698 on 01/13/02 at 18:45 p.m. TG 697 on 01/23/02 10:20 a.m.

Date	Time	Activities	Accompanying USAID Staff	Location	Confirmation
Thursday 01/17/02	<u>Field Visit</u>				
	Charles, Chantha, Bo Rithy, Dr. Kruey Chheang Tay, CENAT Representative in Siem Reap				
	7:30 a.m.	Meeting with Mr. Bo Rithy, RACHA, Logistic Coordinator TB and essential drug logistic and overall RACHA program in Siem Reap	Chantha		Confirmed
	10:00 a.m.	Visit a health center in Soth Nikum OD, DOTS piloting, supported by MSF	Chantha		TBC
	2:00 p.m.	Meeting with Dr. Dy Bun Chem Provincial Health Department Director (and TB Control Unit)?	Chantha		TBC
4:00 p.m.	Meeting with CARITAS, NGO, implementing linkages between DOTS and community	Chantha		TBC	
Friday 01/18/02	In Bantey Meanchey				
	7:00 a.m.	Departure for Bantey Meanchey	Chantha		
	9:00 a.m.	Meeting with Provincial Health Department Director and Provincial DOTS Program Manager, and Visit DOTS program at provincial hospital	Chantha		TBC
	12:00 p.m.	Lunch at Sisophon	Chantha		
	1:00 p.m.	Meeting with Health Center Feedback Committee and Management Committee at Snoul Meanchey Health Center			
	2:00 p.m.	Meeting with OD Preah Neth Preah and DOTS program	Chantha		TBC
	4:00 p.m.	Return to Siem Reap	Chantha		TBC

Date	Time	Activities	Accompanying USAID Staff	Location	Confirmation
Thursday 01/17/02	<u>Field Visit</u>				
	Marcus, David, Chivorn and Ikushi in Sihanouk Ville				
	7:00 a.m.	Pick up David and Marcus at MICASA	Motorpool		
	7:15 a.m.	Meeting Dr. ONOZAKI at CENAT			
	7:30 a.m.	Pick up Dr. Chivorn at RHAC office, House # 6, St. 150 (Depo Market)			
	10:00 a.m.	DOTS at Health Center at Prey Nop District	David		Confirmed
	12:00 p.m.	Lunch			
	1:30 p.m.	Visit Health Development Program of RHAC	David		Confirmed
3:30 p.m.	Arriving at Sihanouk Ville, Visit port construction site and other sites	David		Confirmed	
Friday 01/18/02					
	8:30 a.m.	Meeting with Dr. Kiv Bun Sany, Provincial Health Department Director and Deputy Chairman of Provincial AIDS Committees.	David		Confirmed
	9:30 a.m.	Visit Provincial Hospital, DOTS, STD Clinic, Reproductive Health Clinic.	David		Confirmed
	10:30 a.m.	Visit 100% Condom Use Site	David		Confirmed
	12:00 p.m.	Lunch			
2:30 p.m.	Visit RHAC Reproductive Clinic and Reproductive Health Activities among youth	David		Confirmed	

SECOND WEEK
(From 01/21-25/2002)

Date	Time	Activities	Accompanying USAID Staff	Location	Confirmation
Monday 01/21/02		Work at MiCasa Hotel			
Tuesday 01/22/02	8:00 a.m.	TBD	OPH Team		
	10:00 a.m.	Dr. Tia Phalla, Secretary General NAA		NAA	Confirmed
Wednesday 01/23/02	8:00 a.m.	Visit HOPE Center	Chantha/Charles	Hope Center	Confirmed
	3:00 p.m.	Dr. Sam An Ung, Acting Director NIPH	Chantha/Charles	NIPH	Confirmed
	4:15 p.m.	Dr. James Olson, Epidemiologist Laboratory Manager, NAMRU-2	David/Chantha/Charles	NIPH	Confirmed
Thursday 01/24/02	8:00 a.m.	Visit Sihanouk Hospital (Kampuchea- Soviet Hospital)	Chantha/Charles	Sihanouk Hospital	Confirmed
		COCOM Meeting	David/Maarten	MoH	Confirmed
	10:30 a.m.	Dr. Seng Sut Wantha, NCHADS & Dr. Khun Kim Eam, CENAT Representative	David/Chantha Maarten/Charles	NCHADS Office	confirmed
Friday 01/25/02	TBD	Debrief with CENAT			

THIRD WEEK
(From 01/28-30/2002)

Date	Time	Activities	Accompanying USAID Staff	Location	Confirmation
Monday 01/28/02		Work at MiCasa Hotel			
Tuesday 01/29/02		Work at MiCasa Hotel		MiCasa Hotel	
Wednesday 01/30/02	9:00 AM	Dr. Mam Bum Heng - Debriefing	David, Paljor	MoH	Confirmed
	10:30 AM	Dr. Ung Sam An, NIPH	Paljor	NIPH	
	2:00 PM	Final Document Debriefing	OPH Team	USAID	Confirmed

Annex 4

Summary reports of field visits

Summary of Field Trip to Kampong Som and Kampong Speu Provinces

by Dr. Marcus Hodge, WHO; Dr. David Piet, USAID; and Dr. Ikushi Onazaki; JICA.

Sihanoukville, the capital of Kg. Som province, is the second largest city in Cambodia and a major coastal port and beach resort. It has a permanent population of about 150,000 people. The administrative boundary of Kg. Som province also represents a single operational district (OD). Major factors influencing health and TB control in Kg. Som province relate to the large mobile population people. People from all provinces of the country work temporarily in fishing, the port, manufacturing, and commercial sex industry; there is an associated high rate of HIV/AIDS: the HIV prevalence was 3.9 per 100,000 in antenatal clinic screening in 2000.

Upgrading of port facilities in 2002 will result a considerable influx of additional workers and their families, resulting in major further challenges for the health system. The mobility of the population creates difficulties for the continuity of treatment (especially for tuberculosis). Although a new clinic will be built with the development of the port, it will not serve the families of port workers. Provision of health care and housing to these new arrivals will be a major challenge to local authorities in the coming months.

Kg. Som and Kg. Speu provinces have received direct support from the Embassy of Japan through the “Grass Roots Program” for construction of TB Units (in several districts and at the Provincial Hospital, Sihanoukville). In Kg. Speu province, the TB Unit was constructed in a former district hospital. Japanese Government support is also received locally for operational costs and transportation (motorbikes). These facilities and equipment stand alongside health centers and hospitals that are not as well equipped and of much lower construction standards and maintenance. The TB Units in these provinces receive regular supervision from the central level because of the unique geographical location of Sihanoukville with relatively access by a quality national highway. Excessively high sputum–smear–positive case detection has now improved with closer supervision and monitoring.

The Provincial Health Service of Kg. Som has 313 personnel and most health centers are staffed by a doctor. Unlike more remote areas, staffing capacity is not a problem. The Director of the Provincial Health Service has established an innovative program for monitoring the health status of workers in the city’s 76 brothels, and for supporting 100% condom use. Sex workers are registered both in the brothel area and at the STD clinic of the provincial hospital. At each visit to the clinic, sex workers are given a supply of 25 condoms and brothels may purchase additional supplies at a nominal charge. Most brothels apparently adhere to a “no condom - no sex policy”. A VCT service for HIV is available in a separate clinic at the provincial hospital. There is potential for CDC involvement in the project in the future since current funding by external partners (including the European Union) will end in 2002. Public health staff from throughout Cambodia visit the program, as it has become a model for the rest of the country.

Kg. Som is one of seven target provinces of “The Reproductive Health Association of Cambodia” (RHAC), which implements a community based program for education on reproductive health and HIV/AIDS. USAID has been the major funding source for RHAC (about USD 1 million in 2000), however, in recent years RHAC has received an increasing

proportion of funding from other donors, including UNFPA. The community outreach work is backed by a well-equipped clinic in Sihanoukville providing a range of family planning, counseling and adolescent reproductive health services. RHAC aims to coordinate its work through quarterly meetings and referral systems with seven other NGOs, but there is still scope for coordination with other partners.

There is potential to add TB messages and advocacy to the community based work of RHAC to increase active detection of tuberculosis cases. Most villages would only expect one or two tuberculosis cases, on average, per year. We observed a male educator teaching effectively to a largely female audience in a minority Cham Muslim community. Adding information on TB to pre-existing HIV/AIDS community outreach would be an efficient approach to educating communities on tuberculosis and increasing case finding.

In conclusion, we observed a community undergoing major socioeconomic change associated with future development of the Sihanoukville port. Kg. Som province has a large mobile population and is facing the challenge of a rising incidence of HIV/AIDS. Innovative and multisectoral approaches have been developed to address the health needs of sex workers and NGOs are active at the community level in the field of HIV/AIDS and reproductive health. There is scope for greater coordination of the activities of NGOs, and issues related to tuberculosis could be supplemented to their community outreach work. The tuberculosis program receives strong support at the local level in the provinces visited from the Government of Japan, and DOTS is administered independently from Health Centers in these areas.

Visit to Siem Reap Province, 17 January 2002

Activities

- A. Briefing by Borithy Lun, Advisor, Logistics Unit, Reproductive and Child Health Alliance (RACHA)
- B. Meeting with Kong Saith, Deputy Director, Soth Nikum Operational District (OD)
- C. Visit to Samrong Health Center, Dam Daek commune, (Mr. Seng Sophy, director)
- D. Meeting with Bernadette Glisse, Coordinator, Community Health and Community development Programs and AIDS Home Care Program, CARITAS Cambodia
- E. Visit to Kamtreang Health Center, Siem Reap Operational District

Findings

Briefing with RACHA

1. Reviewed national Drug procurement and management system
 - a. The MOH procurement unit is responsible for Drug procurement with input from the finance committee. The unit meets formally twice a year and procures annually.
 - b. Essential Drugs Bureau (ESB) determines what the needs are to maintain the essential drug list for the MPA; ESB maintains a parallel management system for TB Drugs. ESB provides feedback and Drug supply needs information to the procurement unit.
 - c. All Drug supplies that procured by MOH are housed and managed by the central medical stores (CMS). CMS distributes drugs directly to the operational districts.
 - d. In the past, drug procurement has been based on case numbers, not by consumption. RACHA's projects, funded by USAID primarily with some funding by the Packard Foundation, are focused on better drug supply balancing among ODs within provinces. With the training and management system put into place, ODs are able to avoid overstocking and Drug supply shortfalls by moving Drugs between ODs. This approach of moving Drugs among ODs saves transport costs by avoiding moving supplies to and from CMS.
2. Project funded by USAID (and Packard Foundation) to improve Drug supply management and distribution
 - a. Training MoH personnel on drug supply logistics management (6 workshops – 208 trained)
 - procedures on drug management
 - trained government people at central level to be trainers
 - calculation of monthly stock and correct formulas to order stock
 - correct storage guidelines
 - b. Facility supervision in 3 provinces (7 operational districts)
 - c. Incentive scheme to motivate ODs - motorbike
 - ODs fully managed by computerized system - saves significant time on Drug supply report generation (hours versus days)
 - all health centers in 3 provinces closely supervised and stock level balanced

Soth Nikum OD

1. Soth Nikum is 1 of 3 ODs in Siem Reap Province
2. Population:227,696
3. OD TB system structure
 - a. 17 health centers divided into 2 administrative zones and 1 TB unit referral hospital
 - b. 2 sites with smear microscopy capabilities – 1 at TB unit referral hospital and 1 in health center at former district hospital
 - c. TB patients can be hospitalized at these same 2 sites

4. DOTS implementation began in early 2001
 - a. All health centers operational with DOTS
 - b. Delay on sputum smear results, 2-5 days
 - c. ~400 smear positive TB cases annually
 - d. Cure/completion rate: 89%
 - e. Training for DOTS implementation coordinated at provincial level with CENAT/JICA support
5. Problems with DOTS implementation
 - a. having good follow up for those patients who are at risk for default
 - b. laboratory delays
 - c. transportation for staff to supervise health center activities
6. NGO support for DOTS program
 - a. World Food Program – food supplements for TB patients
 - b. Medecins Sans Frontieres – infrastructure renovations
 - c. JICA – support CENAT training activities in the OD

Visit to Samrong Health Center, Soth Nikum OD

1. Health Center is approximately 10 km from OD center and 40 km from Siem Reap town; population – 12,700
2. Staff
 - a. 2 secondary nurses (3 years formal training)
 - b. 2 secondary midwives
 - c. 1 primary nurse (1 year formal training)
 - d. 1 primary midwife
3. TB situation and DOTS
 - a. 70-80 TB suspects evaluated / year
 - b. ~25 smear positive cases / year
 - c. < 5 smear-negative/extra-pulmonary cases/ year
 - d. ~4 patients / year sent to referral hospital
 - e. Patients come early in morning for dosing; 2 staff trained to perform DOT
 - f. Drugs delivered by OD monthly
 - g. Poor case finding among persons from outer areas of catchment of health center (zone C); only 2-3 cases per year detected. Opportunity costs for patients from these areas are too high to come for evaluation and treatment.
 - h. Less stigmatization from TB diagnosis now; still residual beliefs of disease being hereditary
 - i. Limited knowledge on HIV situation
4. Feedback Committee (FBC)
 - a. Consists of 1 man and 1 woman from each village of catchment area; usually literate, highly respected village members
 - b. Meets on monthly basis; members provide their own transportation
 - c. Assist with health messages to their respective communities and provide staff with feedback on problems and concerns as reported by the communities
 - d. FC members receive free services from HC and referral hospital (as do members of health center management committee)
5. User fees
 - a. first arrival for evaluation-1000 real
 - b. consultation-500 real
 - c. wound Dressings-500 real
 - d. ANC-1000 real; 2nd ANC-500 real

- e. birth spacing-1500 real for 3 mos., 1000 real for 1 mo.
- f. suturing-5000 real
- g. emergency care-5000 real
- h. normal delivery-15000 real
- i. malaria blood testing-1500 real
- j. referral/transport to referral hospital-20000 real
- k. EPI and TB services free, including transport of TB patients to TB referral hospital

Visit to CARITAS Cambodia, Siem Reap (SR) office

1. Overview of CARITAS
 - a. Began assistance with MoH health sector reform efforts in SR by supporting establishment of health centers according to “District Health Coverage Plan”
 - b. Currently supports 7 health centers in Siem Reap OD
 - c. Supports DOTS at 3 of the 7 health centers; each DOTS supported center with inpatient facilities and smear microscopy capabilities
 - d. Supports HIV/AIDS home care program for Siem Reap City at Po-Mean-Chey health center; provide DOTS through home care program in coordination with the TB Provincial Director
 - e. Supports comprehensive community development program to improve health of the population – water and sanitation, irrigation and sustainable agriculture, school construction, credits, infrastructure development (road crossings, animal husbandry, community organizations)
2. Specific TB activities
 - a. All activities closely coordinated with provincial health authorities and SR OD TB program, as well as CENAT
 - b. Renovation and construction of 40-50 bed TB provincial referral hospital (\$5000)
 - c. Construction of 2 in-patient facilities of 16 beds each at 2 health centers at request of provincial health department. These health centers diagnose ~10 new cases per month; hospitalize patients too sick to travel or those who live too far away from health center for DOT
 - d. Supplied full smear microscopy needs (microscope, sinks, cupboards, etc) at 3 health centers
 - e. Supplied motorcycles for health center staff to track patients interrupting treatment
 - f. Sponsor health center staff (per diems) for microscopy training
 - g. Sponsor “bonus according to performance” for DOTS staff as part of “New Deal”; averages ~\$35 per month per staff member based on performance (in conjunction with other health center targets). For DOTS activities, certain detection rate of smear positive cases must be met for bonus
 - h. Willing to assist with further expansion throughout OD

Visit to Kantreang health center, Siem Reap OD, sponsored by CARITAS

1. Situated just off highway 6, approximately 20km from Siem Reap town
2. DOTS started in May 2000
3. TB burden, 2001:
 - a. averaged 11 new cases per month
 - b. 134 patients under treatment, 46 (34%) under full ambulatory DOTS
 - c. outcomes: 48 patients completed treatment, 4 deaths, 1 patient default
 - d. 7 TB patients with AIDS on home-based DOTS
 - e. 30-40 suspects examined monthly; for initial smear negative suspects, 15 days amoxicillin given before repeating smears

Visit to Banteay Meanchey Province, 18 January 2002**I. Activities**

- A. Meeting with Dr. Chhum Vannarith, Director, Banteay Meanchey (BM) Provincial Health Department
- B. Site visit to Makak health center
- C. Meeting with Muon Sopha, BM Provincial Coordinator, and Lydia Ettema, HIV/AIDS Advisor, CARE Cambodia in Poipet on Cambodia-Thailand border
- D. Site visit to Chono Beanchey health center for meeting with feedback committee
- E. Site visit to provincial referral TB unit hospital

II. Findings**Briefing BM Provincial Health Department (PHD)**

1. Province with 51 health centers divided into 3 ODs
 - a. 23 health centers with DOTS presently
 - b. 10 additional health centers have received initial DOTS training
 - c. Each health center with 8,000-12,000 persons per catchment area
 - d. Poipet district in NW BM is under-served – 70,000 official population, but true population >100,000 secondary to casino/gambling industry. HIV seroprevalence growing rapidly. Currently only 2 health centers serving over 100,000 persons.
2. TB profile
 - a. Approximately 40-50 TB cases per year for each health center
 - b. Cases have increased by 20% with DOTS expansion thus far
 - c. Currently 7 smear microscopy sites in BM; plans for 2 more to be added
 - d. CARE providing DOTS support in 8 health centers
 - e. TB Drugs delivered directly from Central Medical Stores to the 3 ODs; Provincial health department supervises OD Drug supplies and shifts as needed among ODs
 - f. TB case reporting goes health center to OD to PHD to central level as part of the national health information system; additional TB data collected, but core data reported to central level must be identical
3. Problems with DOTS implementation
 - a. Have started thus far in health centers with local commitment of leaders and support of community; some health centers with DOTS have seen commitment decrease
 - b. Transportation for staff is critical issue
 - staff have to use their own transport to track patients who interrupt treatment
 - need transportation as incentive to support program
 - case detection in outer catchment areas of health centers is very difficult
 - c. HIV
 - province with mobile population contributing to growing HIV epidemic
 - PHD working closely with NCHADS to implement full 10 strategies plan for intervention
 - PHD working closely with NGOs (CARE, MSF, CIDO); beginning planning and coordination exercises

Site visit to Makak health center, Bun Thei commune, BM Province

1. Health center approximately 10km NW of Serei Sophorn Town
2. Population: 6,900
3. No NGO support for health center
 - ~300 consultations / month
 - staff – 2 secondary nurses, 1 secondary midwife, and 1 primary nurse
4. DOTS implemented in 3rd quarter 2001
 - staff received 2 training session – first was more general training on TB and DOTS principles; second was specific roles activities for staff performing DOTS responsibilities
 - slide sputum smear preparation monitored by OD laboratory supervisor
 - slides for TB suspects go to PHD/OD TB referral center; delays of ~3 days for results
 - have not yet made patient referrals for inpatient care
 - thus far, ~8 TB suspects identified each month with 1-2 confirmed cases
 - transportation during rainy season very problematic
5. Feedback committee – meets monthly; have been providing feedback on suspect cases from the community

Meeting with CARE Cambodia, BM Province staff in Poipet

1. Supporting DOTS in 8 health centers
 - a. refresher training
 - b. IEC – counseling on TB
 - c. Feedback committee training on TB issues such as compliance
2. 2002 plan
 - a. Planning with PHD on DOTS expansion support
 - b. DOTS training for health centers newly implementing DOTS
 - c. Training feedback committees on case-finding
 - d. IEC on TB with villages
3. HIV activities – Poipet with special focus due to casinos and presence of 20 brothels
 - a. condom social marketing
 - b. general prevention activities for high risk populations (military, police, brothels, casinos)
 - c. children in distress (abandoned, orphaned)
 - d. home-based care program (inherited from MSF-Holland) in Poipet
 - teaching families to care for patients
 - social only, not medical home care
 - FHI to undertake more SDI training and clinical care activities
 - e. No VCT available as of yet; private clinics “performing” testing but quality poor and results highly suspect
 - f. HIV survey in 2000 among direct sex workers showed seroprevalence of 37.3%, down from 50.7% in 1999.

Site visit to Chono Beachay Health Center with Feedback Committee (FC)

1. Health center approximately 15km from Serei Sophorn Town with 12 villages in catchment area; established in 1996
2. Population: 6,127 persons
3. DOTS not yet started; all patients referred for diagnosis and treatment. Since 1/1/2002, 15 TB suspects identified with 8 cases confirmed.
4. Feedback Committee profile

- a. meets every other month
- b. members receive free health services
- c. feedback received by the health center director
 - clients don't feel welcome
 - wait too long for service
 - providers impolite
 - user fee causes problems; barrier to access
 - rumors of side-effects of contraceptives
 - more transparency in operations desired by community
5. Health center management committee
 - a. "Board of Trustees" and "business affairs" committee for health center
 - b. Promotes access
 - c. Sets user fees - ~50% shared among staff; ~50% covers running costs
 - d. Addressing needs such as establishing accommodations when patients coming from farther away in the catchment area

Site visit to BM OD TB unit referral center

1. 12 health centers in OD
2. OD population: 122,648
3. 5 health centers with DOTS implemented
4. Facility profile: 60 TB beds; 30 staff; 3-4 suspect TB cases evaluated / week
5. Provide training and evaluation to health centers on DOTS; monitor health centers monthly
6. Reported cases have increased substantially since DOTS implemented
7. Plans for DOTS expansion to additional 4 health centers during 2002; await NTP direction

Report on field visit to Kampong Chhnang province on 17 January 2002

Visiting team:

Dr. Mao Tang Eang, Director CENAT
 Mr. Ngudup Paljor, MCH Advisor, OPH, USAID
 Dr. Maarten Bosman, Senior TB Consultant, KNCV

Places visited:

1. Prey Khmer Health Center
2. Kampong Chhnang Provincial Health Department
3. Kampong Chhnang Operational District Office
4. Care Office of the Jivit Thmey Project in Kampong Chhnang Operational District

1. Prey Khmer Health Center

Prey Khmer Health Center was rebuilt and reopened in December 2000. The center with 11 staff provides the MPA to a population of 17,000 in 3 communes. The center is one of the 7 health centers in the Rulia Phaiar OD.

The center operates on MoH funds and user fees and receives support from CENAT for TB activities. CARE assisted in the establishment of the Feedback Committee (FBC) and in increasing staff capacity through the COPE project.

The HC charges user fees as indicated below:

Intervention	Cost in Riel
Registration for 6 consultations	300
Consultation	500
Birth Spacing	1,500
Tetanus Toxoid for ANC attenders	500
Vaccinations other than EPI package	500
Minor surgery	5,000
Wound Dressing	500
BS for malaria	2,000
IV fluids	7,000
Delivery	15,000
EPI and TB	Free of charge

The costs of the interventions are presented on a board clearly positioned in the waiting area of the HC. On average, the health center sees 20 patients daily. The average daily income of the HC from user fees varies from 10,000 to 20,000 Riel. About 30% of patients are exempted from the fees. The additional income per staff per month from user fees income is 10,000-15,000 Riel (about 3-5 US\$).

HC outreach covers EPI, birth spacing and ANC. It was unclear to what extent IEC on TB and patient identification with a chronic cough had been introduced as part of the outreach work.

The HC started DOTS in November 2001. 2 staff were trained, one of them being responsible for transporting sputum to the TB unit 4 km from the HC. The TB HIS comprised a chronic cough register and the HC TB patient book. During the course of November and December 2001, 18 suspected cases had been examined, of which 2 (11%) were smear-positive. The HC kept sufficient stocks of anti-TB Drugs. However, the rifampicin/isoniazid combination tablets in stock had expired by 12 January 2002.

In 1999, the HC Management Committee (MC) was established. The MC has 11 members elected by the commune committees of the 3 communes. The head of the HC is one of the chiefs of the communes on a rotational basis. The Chief and vice-Chief represent each HC. The MC further has representatives of the pagodas, monks and laymen, the women's association, and representatives of the commune populations. In 2001, the MC met 11 times in combined meetings with the Feedback Committee (FBC). The FBC has 53 members, of which 44 are from the 22 villages of the 3 communes.

The meetings discuss the monthly activity report, epidemic diseases, special patients, chronic patients, IEC issues concerning diarrhea, malaria, HIV/AIDS, and dengue fever. It was unclear if the meetings had discussed TB.

Conclusions

- Overall performance of the HC seems adequate and was graded as average by the team. The FBC and MC seem to function well, though it was decided to decrease the frequency of the meetings to once every two months instead of monthly.
- Attendance rates are low in view of the population in the catchment area, reflecting the general low utilization of public health services in Cambodia.
- Though DOTS is within access to part of the population, some patients had refused to attend daily due to the distance to the HC. The question was raised as to whether such patients could be given drugs for self-administration. The potential use of FBC members as DOTS supervisors was discussed as an option for providing DOTS at the village level.

2. Kampong Chhnang Provincial Health Department

At the PHD, the team discussed provincial health issues with the provincial health director, the health directors of the two operational districts, the chief of the provincial AIDS program, and the Provincial TB Supervisor (PTS).

Kampong Chhnang Province has an estimated population of 420,000 people. The province is divided into two operational districts. Kampong Chhnang OD with 23 HCs covering a population of 277,000, and Kampong Trialach OD with 11 HCs covering a population of 143,000. All HCs have provided the MPA since 2001. Thirty HCs were built or renovated with the support of the ADB and DFID. All HCs have FBCs, of which some 50% were functioning well, i.e. were meeting regularly with sufficient members attending. The province is one of the 7 provinces where the Priority Action Project (PAP) is piloted.

CARE supports the province in two administrative districts in selected HCs. CARE provides TA and assisted in mapping the HC catchment areas and establishment of the FBCs. Currently CARE provides direct support to 4 HCs for MCH and training of TBAs and

midwives. CARE focus is on remote populations and IEC. CARE collaborates closely with the PMT and PHD and participates in planning meetings of the PHD.

Other NGOs supporting the province are CESVI (Italy), World Vision International and LWS (Lutheran World Services). All NGOs participate in the monthly Pro CoCom meetings.

Provincial TB Supervisor

The PTS started as TB supervisor of the province in 1980. He is assisted by one assistant supervisor, two laboratory staff and one statistician. The team has two motorcycles. All HCs in the two ODs provide DOTS since 2001. Both ODs have a TB supervisor. Kampong Chhnang OD has 6 microscopy centers for AFB and Kampong Trialach has one microscopy center for AFB.

Each OD has an OD TB register in which all cases diagnosed by the respective HCs are registered. Each HC has a HC TB book for registration and monitoring of treatment intake. The registers were introduced in 2001. Before 2001, registration was based at the 7 TB units with microscopy services. It is the duty of the OD TB supervisor to update the OD TB register to include all cases diagnosed by the microscopy centers.

The activities of the PTS are based on a monthly activity plan. The two main activities are supervisory visits to HCs and microscopy centers, and home visits to patients. The PTS visits each health center bi-monthly and each microscopy center monthly. The PTS visits two to three patients to verify their status in each center. For 2002 the PTS plans to survey households for examination of contacts of known cases of TB and to provide IEC to village health volunteers (VHV) in collaboration with the FBCs.

The majority of cases are currently receiving DOTS at the HC level. Severe patients are admitted in one of the TB units with bed capacity (formal district hospitals). Some patients on HC DOTS had to build shelters near the HC to be able to attend daily for DOTS. All patients (admitted or ambulatory) receive food support monthly through the World Food Program (WFP), i.e. 15 kg rice, 900 gram vegetable oil and canned fish. In 2001 the total number of new smear-positive cases started on DOTS in the province is 670.

Provincial AIDS Coordinator

The Provincial AIDS Coordinator (PAC) started working in the province in 1994 when the National AIDS program was established. The program is supported by NCHADS as regards special activities as surveillance and training. Operating costs are funded by the World Bank (WB) through the Provincial Project Unit (PPU) which receives funds for TB, malaria and AIDS control from the WB Program Coordinating Unit (PCU) in Phnom Penh. Through this channel the Provincial AIDS program received 14,000 US\$ which was used for training, outreach work, supervision, STI services, social mobilization, establishment of peer groups and World AIDS day. When WB funds are not available the province provides per diem. During 2001 the Provincial TB Program received 1,000 US\$ from the PPU.

During 2001, 85 new AIDS cases had been registered, of which 60 had already died. HIV-prevalence in Kampong Chhnang is one of the highest in Cambodia. 42% of the commercial sex workers (CSW) are tested positive and 13% of the indirect sex workers (ISW). HIV

prevalence in ANC attendees is 3.3% in 2001. In view of this reported HIV prevalence of one percent in TB cases seems to be too low.

Current collaboration between the two programs is mainly in the areas of surveillance and case-management.

Operational District Health Directors

The team discussed overall challenges of the ODs and the perceived strengths and challenges of TB control.

Overall challenges mentioned were:

- Human resources. Moderate capacity of staff, low salaries of staff, “floating staff”, i.e. staff trained in the past, but not recognized by the government system as true health staff, staffing of remote areas.
- Reduction of the prevalence of infectious diseases
- Implementation of MPA as staff is not sufficiently skilled, in particular with regard to health management.

Perceived strengths of the NTP:

- Improved access to DOTS following expansion to the HC level
- Increased awareness of the population through dissemination of IEC via the FBCs
- Provision of clear guidelines
- Promotion of outreach work to identify suspects
- TB treatment free of charge
- Training of staff with JICA support
- Transport of sputum
- Support to supervision

Challenges to TB control:

- Diagnosis of smear-negative TB in the absence of X-ray facilities
- Side effects of treatment, though uncommon
- The problem of defaulters
- The problem of patients living too far away from HCs to be able to get ambulatory DOTS.

Conclusions

- The HC based DOTS program is well established in the province
- There is need to address the problem of TB patients living too far from HCs
- The PHD recognizes the support of the NTP to the program, however it seems that WB funds for TB play a limited role in developing the program further.
- The NTP and AIDS program operate largely separately at the provincial level.
- There is need to increase the planning and management capacity for TB control at provincial level.

3. CARE Jivit Thmey Project

CARE Jivit Thmey (New Life) Project is a USAID/CARE International funded project, which was initiated in July 1995. The project started in 11 districts in three provinces. In Kampong Chhnang the project covers Boribo and Rolea Phiear districts.

Overall in 2001 the project covered 33 health centers serving 61 communes with 505 villages with an estimated total population of 380,000.

The project focuses on improving the technical performance skills of health center staff through training in the topics of: birth spacing, ante/post-natal care, safe delivery, treatment of childhood diarrheal diseases and acute respiratory infections, immunization, basic curative care; providing training for selected traditional birth attendants (TBA), private health workers, private pharmacists and Drug sellers. CARE has also supported health education and promotion activities, basic equipment and establishing/strengthening outreach services. Other components include nutrition education and diagnosis and treatment of sexually transmitted infections (STI).

In Boribo and Rolea Phiear CARE provide direct support to 4 HCs and indirect support to another 7 HCs. The total population in the area is 127,000 in 176 villages. The TBA training program aims to improve the skills of 150 TBAs, that provide assist in home deliveries. The potential role of TBAs as DOTS supervisors at the community level was discussed with the MCH assistant at the CARE office in Kampong Chhnang town.

Conclusions

- CARE has played an important role in developing the health services in the area it covers
- CARE is fully supporting TB control work in the area
- CARE recognizes the potential role of TBAs as community based DOTS supervisors.

Report on field visit to Takeo province on 18 January 2002

Visiting team:

Dr. Kehn Kim Eam, CENAT supervisor
Mr. Ngudup Paljor, MCH Advisor, OPH, USAID
Dr. Maarten Bosman, Senior TB Consultant, KNCV

Places visited:

1. Takeo Provincial Health Department
2. Ang Roka District Health Project
3. Prey Kabas Operational District

1. Takeo Provincial Health Department

Takeo province has an estimated population of 850,000 and is divided in 10 administrative districts with 100 communes and 1,117 villages.

The health services are provided by 5 operational districts with 70 health centers, 5 referral hospitals and 9 TB units with microscopy services. The total bed capacity for TB patients is 165. At the start of 2002 all ODs are supposed to register TB cases in the OD TB register.

With WB and ADB funds 63 new health centers had been constructed to reestablish the health infrastructure planned in the Health Coverage Plan. Beside government funding the health sector receives support by a range of NGOs, i.e. Helen Keller International (HKI) providing eye health services and support to PHC, LWS providing health education, RACH, the Asian Medical Doctors Association (AMDA), Rachana, a local NGO involved in rural development, the Swiss Red Cross, Caritas, JOCS (Japan) and Enfants et Developpement (EED).

The TB program is has not yet introduced HC based DOTS, though in two ODs initial workshops have been organized. The process of introducing DOTS at HC level in an OD has the following steps:

- Preparation visit to do a situational analysis
- Sensitizing workshop
- Training program
- Preparatory meeting before the start of implementation
- Supportive supervision
- Evaluation visit.

The duration of the process is 6 months.

Conclusions

- The NTP in Takeo is just starting DOTS expansion to HC level in two ODs. Currently all TB cases are admitted in one of the 9 TB units during the intensive phase of treatment. During the continuation phase patients report monthly to the TB units to collect Drugs and for follow up smear examinations

2. Ang Roka District Health Project

Health service provision in Ang Roka Operational District is contracted out to AMDA on a 4 year contract of 1.9 million US\$ which runs through end 2002. AMDA contracted near 100% of actual government health staff to provide MPA at 9 HCs and CPA at one referral hospital. AMDA introduced user fees in November 2001. Following the introduction of the fees utilization rates at HC level has declined steeply. AMDA has started decentralizing provision of continuation TB treatment to 3 HCs.

The team visited the Ang Roka district hospital and its departments. The hospital is not able to provide the full CPA as it lacks an operating theatre and an X-ray facility.

Before the introduction of user fees the majority of patients (80-85%) were referred by one of the HCs. After the introduction of user fees the majority of patients attending the hospital bypassed the HC level and the bed occupancy rate had declined considerably. The hospital itself is an upgraded health center with new hospital wards. The hospital is well maintained and managed. The hospital has 25 staff including 4 doctors and 2 medical assistants.

The team visited the TB ward and interviewed a number of TB patients. Patients were well managed and all received WFP support. Patients were well informed about the duration of treatment. The laboratory was well organized. AMDA had initially bought its own supply of anti-TB Drugs in Phnom Penh, but would in the future use the NTP Drugs.

Conclusions

- AMDA follows the NTP guidelines for diagnosis and treatment
- AMDA is proactive in decentralizing DOTS to the HC level
- Ang Roka district is one of the two ODs where DOTS at HC level will be introduced during 2002
- User fees have had a negative effect on health service utilization and hospital admissions in a well managed system offering services free of charge
- Per capita expenditure of about US\$ 4 through contracting out are well above the national average. However, services provided are of good quality.

3. Prey Kabas Operational District

Prey Kabas OD, which borders Vietnam, covers a population of 140,000. The OD has 13 HCs and 2 TB microscopy centers. All except one HCs provide MPA. The referral provides CPA but lack an operating theatre and X-ray equipment. User fees were introduced in 2001. As yet no HCs provide DOTS and all TB patients are hospitalized during the intensive phase of treatment. It has been planned to start DOTS at Prey Kabas HC in March 2002.

The visit to Prey Kabas was used to examine the quality of direct microscopy and case-finding by the center in view of findings related to the quality as observed during the NDRS which was held in the district from October 2000 till March 2001. From the laboratory registers covering the period 1998-2001 the following information was collected (see table below).

Period	Suspects	Positive	Rate	% population examined
1998	328	215	66%	0.36%
1999	367	260	71%	0.41%
NDRS 10-10-2000 till 06-03-2001	149	42	28%	0.40% (extrapolated)
02-07-2001 till 31-12-2001	223	110	49%	0.59% (extrapolated)

The table shows a very high smear-positive rate in 1998 and 1999. During the NDRS the rate dropped to 28%, but thereafter again increased to 49%. The findings were discussed with the staff and the JICA adviser to the NTP.

Conclusion:

It is apparent that the microscopy center in Prey Kabas is dysfunctional at the moment. Reasons for this could not be explored in the frame of this visit.

ANNEX 5 DOTS expansion to HC level program 2001-2003

N	Kandal Province (5RH + 6FDH + 88 HC)	HC	2001	2002	2003
1	Takmao	14	14		
2	Saang	12			12
3	Koh Thom	12			12
4	Kean Svay	17		17	
5	Ksach Kandal	9	9		
6	Ang Snuol	8			8
7	Ponhea Leu	10			10
8	Muk kam Poul	6		6	
	Kampong Cham Province (10RH + 3FDH + 128 HC)				
9	Kampong Cham – Kampong Siem	22	12		10
10	Prey Chhor – Kang Meas	15	15		
11	Cheung Prey – Batheay	13		13	
12	Chamcar Leu – stung Trang	13		10	
13	Kroch Chhmar – stung Trang	9			9
14	Tbong Khum – Kroch Chhmar	13		11	2
15	Ponhea Krek – Dam Be	14			14
16	O Reang Ov – Koh Sotin	8			8
17	Memut	8	8		
18	Srey Santhor – Kang Meas	13			13
	Kampong Chhnang Province (2RH + FDH + 34 HC)				
19	Kampong Chhnang	23	23		
20	Kampong tralach	11	11		
	Kampong Speu Province (3RH + 3FDH + 50 HC)				
21	Kampong Speu	22		13	9
22	Oudong	9			9
23	Kong Pisey	19		12	7
	Kampong Thom Province (3RH + 5FDH + 50 HC)				
24	Kampong Thom	21	12		9
25	Stong	10			10
26	Baray - Santuk	19	11		8
	Kampot Province (4RH + 3FDH + 47 HC)				
27	Kampot	10	7		3
28	Chhouk	15	10		5
29	Kampong Trach	12	6		6
30	Angor Chey	10	6		4
	Kep Ville Province (4 HC)				
31	Kep Ville	4			4
	Koh Kong Province (2RH + 12 HC)				
32	Smach Mean Chey	6			6
33	Sre Ambel	6			6
	Kratie Province (2RH + 3FDH + 22 HC)				
34	Kratie	12		12	
35	Chhlong	10			10

N	Takeo Province (5RH + 5FDH + 70 HC)	HC	2001	2002	2003
36	Don Keo	15		15	
37	Kirivong	20		10	10
38	Bati	13		13	
39	Ang Roka	9			9
40	Prey Kabas	13		13	
	Battambang Province (4RH + 5FDH + 67 HC)				
41	Svay Por	34	11	20	3
42	Tomakol	16	16		
43	Mong Russey	11	4		7
44	Sampov Iuon	6	2		4
	Bantey Meanchey Province (3RH + 4FDH + 54 HC)				
45	Mongkol Borei	29	9	5	15
46	Thmar Puok	13	6	3	4
47	Preah Net Preah	12	5	2	5
	Pailin Ville Province (3 HC)				
48	Pailin Ville	3			3
	Prey Vieng Province (7RH + 7FDH + 90 HC)				
49	Prey Veng	17		6	11
50	Neak Loeung	17		7	10
51	Peareang	15	14		1
52	Kampong Trabek	11	7		4
53	Pheah Sdach	9		9	
54	Kamchay Mear	11	6		5
55	Mesang	10		10	
	Preah Vihear Province (12 HC)				
56	Preah Vihear	12			12
	Pursat Province (2RH + 3FDH + 30 HC)				
57	Sampov Meas	20	18		2
58	Bakan	10	10		
	Sihanouk Ville Province (11 HC)				
59	Sihanouk Ville	11	9		2
	Phnom Penh Province (37 HC)				
60	Kandal	10	2		8
61	Cheung	8	3		5
62	Lech	10	4		6
63	Tbong	9	4		5

	Mondolkiri Province (6 HC)	HC	2001	2002	2003
64	Sen Monorom	6			6
	Rattanakiri Province (10 HC)				
65	Rattanakiri	10			10
	Stung Treng Province (10 HC)				
66	Stung Treng	10			10
	Siem Reap Province (3RH + 4FDH + 53 HC)				
67	Siem Reap	29		29	
68	Soth Nikum	17	17		
69	Kralanh	7			7
	Odar Mean Chey Province (4 HC)				
70	Samrong	4			4
	Svay Rieng Province (3RH + 5FDH + 37 HC)				
71	Svay Rieng	20		20	
72	Romeas Hek	9		9	
73	Chi Phu	8		7	1
	Total	929	291	264	374
	Percentage	100	31	28	40
	Percentage of 632 functional HCs		46	42	10

ANNEX 6 NTP case-finding data 1982-2000

Table 1. Number of TB Cases Registered under NTP from 1982 to 2000

Year	Smear (+)			Smear (-)	Extra PTB	Total
	New	Relapse	Sub-total			
1982			5,579	2,663	233	8,475
1983			5,316	1,823	833	7,572
1984			5,507	316	2,007	7,830
1985			5,235	3,891	1,019	10,145
1986			8,715	1,295	271	10,281
1987			7,173	1,406	1,027	9,606
1988			8,246	1,714	731	10,691
1989			6,740	2,251	965	9,956
1990			5,132	163	672	5,967
1991			8,507	990	1,406	10,903
1992			12,685	2,491	972	16,148
1993	9,560	200	9,760	2,417	912	13,089
1994	11,058	540	11,598	2,195	1,319	15,112
1995	11,150	605	11,755	1,575	1,501	14,831
1996	12,065	607	12,672	708	1,477	14,857
1997	12,686	634	13,320	721	1,588	15,629
1998	13,865	705	14,570	705	1,671	16,946
1999	15,744	792	16,536	725	2,005	19,266
2000	14,826	814	15,640	1,108	2,144	18,892

(Source: CENAT)

Table 2. Case Registration Rate under NTP from 1982 to 2000

Year	Population x 1,000	New Smear (+) and Relapse Cases	New Smear (+) and Relapse/10 ⁵ Population	All New Cases	All New Cases/10 ⁵ Population
1982	5,900	5,579	94.6	8,475	143.6
1983	6,150	5,316	86.4	7,572	123.1
1984	6,400	5,507	86.0	7,830	122.3
1985	6,700	5,235	78.1	10,145	151.4
1986	7,000	8,715	124.5	10,281	146.9
1987	7,300	7,173	98.3	9,606	131.6
1988	7,600	8,246	108.5	10,691	140.7
1989	7,900	6,740	85.3	3,890	492
1990	8,200	5,132	62.6	5,967	728
1991	8,500	8,507	100.1	10,903	128.3
1992	8,800	12,685	144.1	16,148	183.5
1993	9,250	9,760	105.5	13,089	141.5
1994	9,700	11,598	119.6	15,112	155.8
1995	9,950	11,755	118.1	14,831	149.1
1996	10,200	12,672	124.2	14,857	145.7
1997	10,700	13,320	124.5	15,629	146.1
1998	11,426	14,570	127.5	17,093	149.6
1999	12,112	16,536	130.2	18,503	152.8
2000	12,414	15,640	126.0	18,892	152.2

(Source: CENAT)

ANNEX 7 Anti-TB activities by provinces, 1999

Province	New smear-positive cases	Total number of cases	New smear-positive cases per 100,000 population	Total cases per 100,000 Population
Kandal	1,825	2,167	177	197
Svay Rieng	844	1,028	185	210
Phnom Penh	845	1,322	87	128
Pursat	404	460	112	124
Battambang	686	1,108	85	131
Pailin	4	12	18	53
Banteay Meanchey	796	992	139	167
Siem Reap	1,458	1,701	198	216
Kampong Thom	954	1,249	170	214
Takeo	1,044	1,312	143	162
Kampong Speu	1,451	1,551	240	253
Kampot	473	586	85	103
Kep	24	25	84	84
Kampong Som	246	374	165	233
Koh Kong	70	88	55	64
Prey Veng	1,568	1,720	170	177
Kampong Chhnang	749	868	183	203
Kratie	267	367	103	136
Kampong Cham	1,786	2,076	114	125
Stung Treng	105	132	128	157
Preah Vihear	55	96	46	78
Mondulkiri	43	56	133	166
Ratanakiri	47	81	49	84
Total	15,744	19,371	155	181

ANNEX 8 Treatment results of cases treated with DOTS in 1996-1999

Year/Cat	Evaluated	Cured (%)	Completed (%)	Failure (%)	Died (%)	Default (%)	Tr. Out (%)
1996 Cat.1*	New: 9,111	8,139 89%	403 5%	63 1%	217 3%	227 3%	63 1%
Cat.2	Relapse: 625	548 88%	26 4%	4 1%	23 4%	21 3%	3 0%
	Others: 338	168 50%	110 33%	7 2%	24 7%	18 5%	13 4%
Cat.3	798		741 93%	0 0%	31 4%	12 2%	14 2%
1997 Cat.1	New: 11,329	10,088 89%	534 4.7%	48 0.4%	258 2.3%	292 2.6%	87 0.8%
Cat.2	Relapse: 589	520 88%	28 5%	8 1%	19 1%	12 2%	2 0%
	Others: 147	98 67%	18 12%	10 7%	10 7%	6 4%	6 4%
Cat3	917		864 94%	0 0%	31 3%	14 2%	8 1%
1998 Cat.1	New: 13,287	12,166 92%	402 3%	49 0%	311 2%	290 2%	72 1%
Cat.2	Relapse: 689	613 89%	19 3%	8 1%	27 4%	24 3%	0 0%
	Others: 133	111 83%	11 8%	6 5%	11 8%	6 5%	1 1%
Cat.3	893		853 96%	0 0%	19 2%	8 1%	13 1%
1999 Cat.1	New: 15,700	14,236 90.70%	433 2.76%	64 0.40%	411 2.62%	469 3%	83 0.52%
Cat.2	Relapse: 778	685 88%	25 3%	9 1%	29 4%	22 3%	8 1%
	Other: 85	66 78%	3 4%	0 0%	8 9%	7 8%	1 1%
Cat.3	768		739 96.22%	1 0.13%	17 2.21%	9 1.17%	2 0.26%

(Source: CENAT)

*

Cat 1 = New smear-positive cases

Cat 2 = Previously treated smear-positive cases

Cat 3 = New smear-negative and extra-pulmonary cases

ANNEX 9 Estimated costs for DOTS expansion per OD

Activity	N staff x N days	Costs in US\$
Central Team		
4 preparatory visits, including initial training and workshops	3 x 16	1,300
1 st supervisory visit	3 x 4	300
Quick review and quarterly meeting	3 x 4	300
6 months evaluation	5 x 5	700
First year review	4 x 4	400
Provincial Level		
Consensus workshop with PHD, OD, supervisors and TB unit staff		400
Extra supervision to OD	2 x 30	1,000
Operational District Level		
Workshop of one day at OD		400
HC Staff Training 2 courses of 3 days for 3 staff/HC		1,500
DOTS Implementation. Small ceremony at each center with community representatives		500
Quarterly meeting		1,200
Refresher Training: 2 courses of 2 days		1,200
Extra supervision to HCs 50 days		500
Laboratory and TB unit management		600
Motorbike by JICA		1,500
Health Center Level		
Health center costs for slide and sputum transportation and outreach work	20 US\$ x 15 HCs x 12 months	3,600
Total costs		15,400

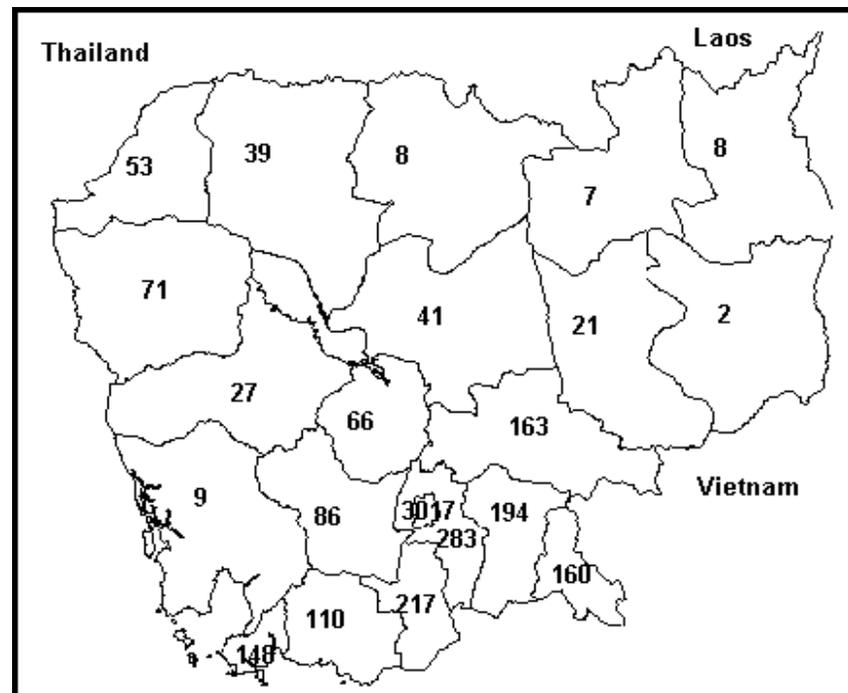
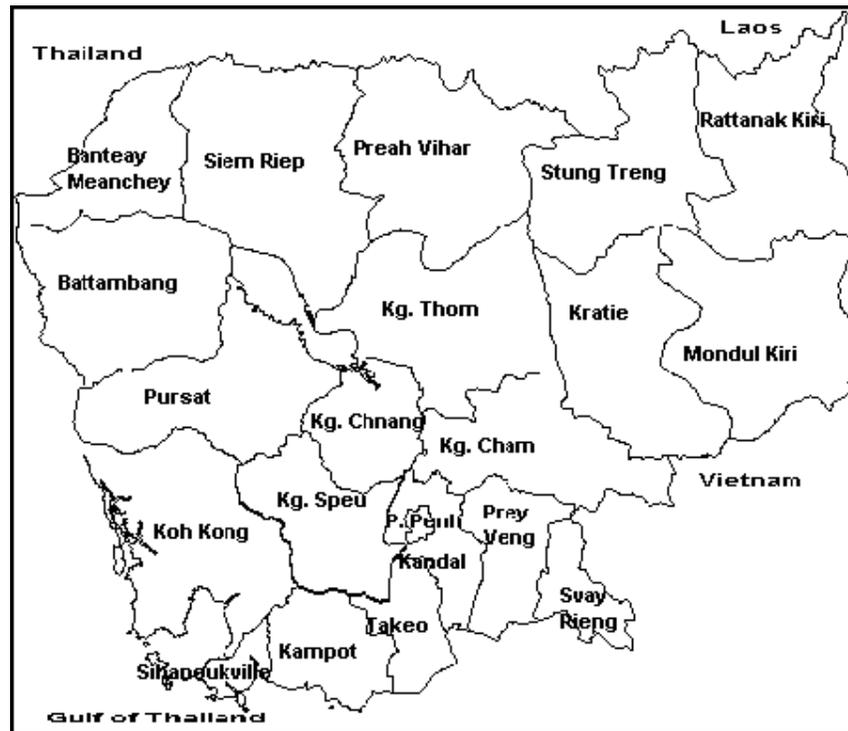
(Note: According to actual expenditures: Annual budget for DOTS expansion in 10 ODs: US\$ 146,000)

ANNEX 10 Population per province 1998 Census data

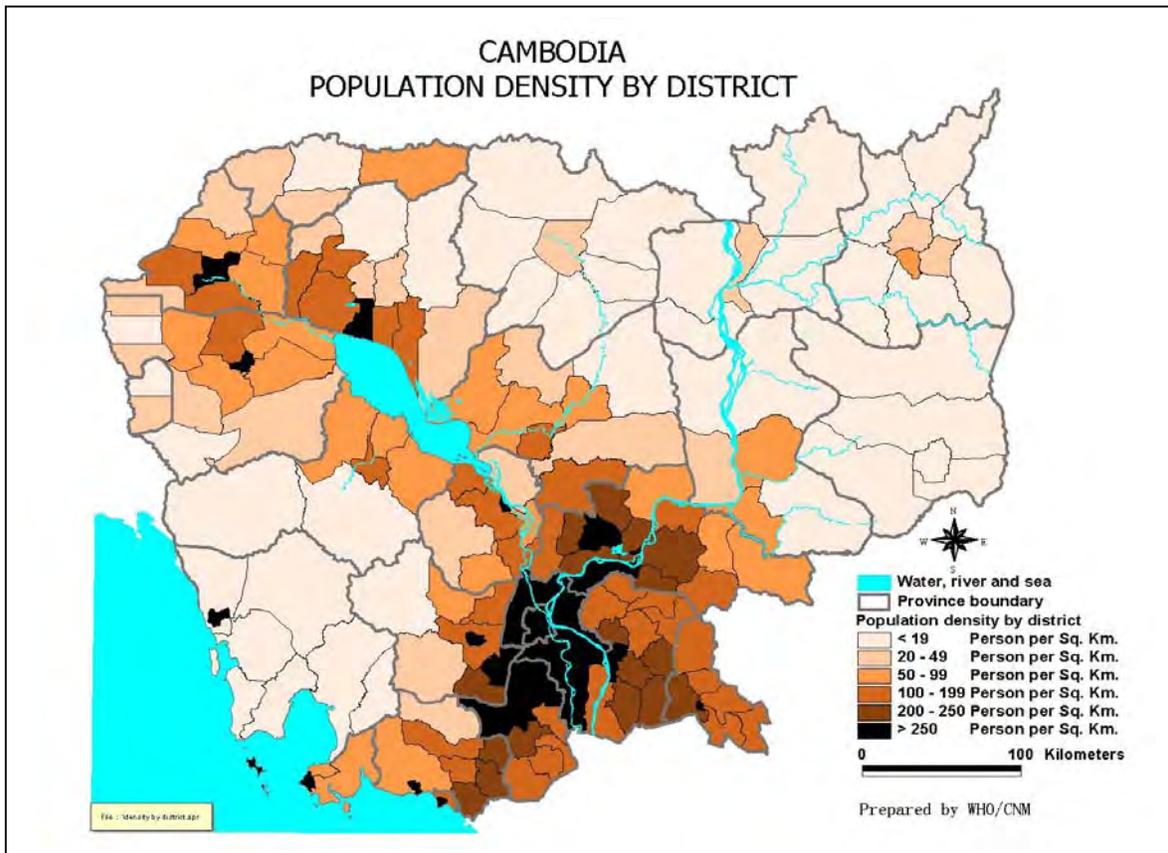
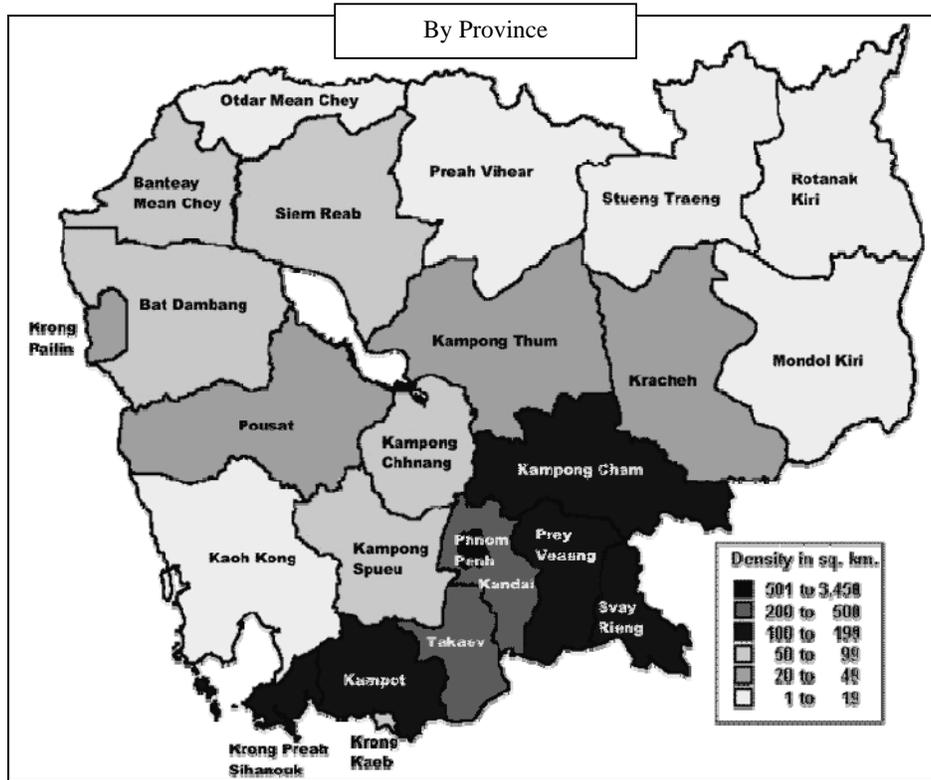
Code	Province	Area (km ²)	Density/km ²	Population	#Districts	#Communes	#Villages
1	Stey Rieng	2,968	181	478,099	7	80	899
2	Prey Veng	4,883	194	945,129	12	116	1,139
3	Kendal	3,588	381	1,073,588	11	147	1,080
4	Pinom Penh	280	3,441	957,998	7	78	498
5	Kampong Chhn	9,799	184	1,807,913	18	193	1,713
6	Kampong Chhnang	5,521	78	418,999	8	85	539
7	Kampong Speu	1,017	85	88,901	8	87	1,200
8	Taeko	3,583	222	793,710	10	98	1,114
9	Kampot	4,873	188	927,804	10	95	478
10	Svay Rieng	888	179	155,378	3	21	82
11	Koh Kong	11,180	12	13,912	7	30	119
12	Pursat	12,892	28	360,291	5	44	448
13	Battambang	11,702	88	799,888	12	88	811
14	Banteay Meanchey	8,679	88	577,300	9	82	599
15	Siem Reap	18,289	88	885,485	14	108	921
16	Kampong Thom	13,814	41	568,454	8	81	77
17	Preah Vihear	13,788	9	119,180	7	45	197
18	Kratie	11,091	24	262,945	5	45	249
19	Stung Treng	11,082	7	80,978	5	34	129
20	Mondul Kiri	14,288	2	22,382	5	21	87
21	Ratanak Kiri	18,782	9	54,188	9	50	249
22	Kep Vile	338	85	28,877	2	5	15
23	Odder Meanchey	8,158	11	88,838	0	0	0
24	Pailin Vile	803	28	22,844	2	8	53
Total :		181,835	84	11,428,223	182	1,888	13,818

Source : General Census of Cambodia 1998, Department of Statistics, Ministry of Planning

ANNEX 11 Map of Cambodia and population density per province



Population density based on 1998 census data



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USAID/TBCTA Summary of Costs for Recommended Plans of Action

Document Locator	NTP Output #	NTP Activity	Deliverable	Cost (US\$)				
				FY 02	FY 03	FY 04	FY 05	Total
6.1	Output 1	To develop, with NCHADS, specific strategies addressing TB/HIV issues and to formulate and implement an action plan to reflect these strategies	6.1.1	\$50,000				\$50,000
		To enable local and international NGOs to implement TB/HIV linking activities	6.1.2	\$200,000				\$200,000
6.2	Output 2	To organize training workshops on management, data analysis and interpretation, advocacy, social mobilization, etc.	6.2.1		\$25,000			\$25,000
			6.2.2		\$100,000	\$100,000	\$100,000	\$300,000
			6.2.3		\$50,000	\$50,000	\$50,000	\$150,000
		To send key staff for long and short term training including Masters Degree courses	6.2.4	\$25,000	\$25,000	\$25,000	\$25,000	\$100,000
			6.2.5		\$100,000	\$100,000	\$100,000	\$300,000
			6.2.6		\$25,000	\$25,000	\$25,000	\$75,000
6.3	Output 3	To develop a 5-year expenditure framework in accordance with the strategic plan with active consultation with major partners	6.3		\$75,000		\$75,000	
6.4	Output 5	To strengthen laboratory capacity at all levels and develop the quality assurance system	6.4.1		\$50,000			\$50,000
		To involve private sector, starting from pilot testing, in implementing DOTS and other TB control activities like IEC and make expansion if found to be effective	6.4.2		\$50,000			\$50,000
		To involve the NGO sector and the community, starting from pilot testing, in implementing DOTS, and make expansion if found to be effective	6.4.3		\$150,000			\$150,000
6.5	Output 6	Expand the DOTS strategy to provide good quality curative care by trained staff using hospitalization, ambulatory and home care approaches, giving emphasis on the implementation of DOTS at health center level providing minimum package of activities	6.5		\$345,000	\$70,000	\$415,000	
6.6	Output 7	To enhance IEC activities by ways of capacity building, IEC material producing and disseminating from central level till the community	6.6	\$100,000	\$100,000	\$100,000	\$100,000	\$400,000
6.7	Output 8	To liaise with international organizations and NGOs involved in TB control activities and identify areas of cooperation and funding for the program	6.7	\$15,000	\$30,000	\$30,000	\$30,000	\$105,000
6.8	Strategic Plan	Midterm evaluation should be conducted in 2003	6.8		\$50,000			\$50,000
Total				\$390,000	\$1,175,000	\$500,000	\$430,000	\$2,495,000

- ANE Funding:**
- **Continued** USAID/ANE-supported TB Adviser at WPRO/Manila. Budget US\$359,000 for 2 years
 - **Continued** USAID /ANE-funded activities in support of the Stop TB Special Project of WHO-Western Pacific Regional Office. Budget US\$500,000
 - **NEW** USAID/ANE-supported Mekong TB Medical Officer at WHO/Hanoi - Position to be filled in the second quarter of 2002. Budget US\$300,000 for 2003-2005

- Comments:**
- 6.1.1 to develop strategies/plans with NCHADS - **Suggested funding mechanism(s):** USAID/C Field Support to USAID/Washington's Interagency Agreement with CDC
 - 6.1.2 To enable local and international NGOs to implement TB/HIV linking activities
 - 6.2.1 for development of module in FY '03
 - 6.2.2 for 2 x 3 months courses with 20 participants each per year
 - 6.2.3 for follow-up courses for 5 students per year to CDC Atlanta and/or Mahidol University, Thailand
 - 6.2.4 for 5 participants per year to IUATLD TB control training course in Hanoi - **Sug. funding mechanism(s):** (1) USAID/C provide Field Support funds to KNCV/TBCTA's Cooperative Agreement.
 - 6.2.5 for two fellowships per year
 - 6.2.6 for participation in International Conferences of the IUATLD and meetings of the DOTS expansion working group of the Stop TB Partnership
 - 6.3 for 3 workshops, consensus meeting and technical assistance, including contracting organization to introduce log frame approach and facilitate workshops
 - 6.4.1 for operational research project/studies
 - 6.4.2 for operational research project/studies
 - 6.4.3 for five pilots and protocol development workshop
 - 6.5 for DOTS expansion
 - 6.6 for capacity building, IEC material, and disseminating from central level to community - **Sug. mechanism(s):** USAID/C obligate funds for Cooperative Agreements with partners; e.g., FHI or PSI
 - 6.7 for 2 tech, assistants for 2 weeks, reporting/backstopping - **Sug. mechanism(s):** (1) USAID/C Field Sup. to KNCV/TBCTA's CA; (2) USAID/C fund USAID/W's WHO Umb. Grant for WPRO/Hanoi
 - 6.8 for an external evaluation