

**THAILAND NATIONAL AIDS SPENDING
ASSESSMENT
2000-2004**

EXECUTIVE SUMMARIES

HIV/AIDS spending in Thailand was 4,943.32 millions baht (122.90 million USD) in 2004, nearly doubled from that of 2,623.27 millions baht (65.4 million USD) in 2000. HIV/AIDS spending per capita increased from 1.05 USD in 2000 to 1.91 USD in 2004 while expenditure per capita PLWA increased dramatically 2.3 times from 94.19 USD in 2000 to 214.68 USD in 2004. In addition, the share of HIV/AIDS expenditure to total health expenditure (THE) increased from 1.57% in 2000 to 2.64% in 2004.

Public spending played a major role in financing Thailand's AIDS program. It increased averagely ten percent per annum from 2,487 million baht in 2000 to 3,737 million baht in 2004, external spending on HIV/AIDS, though small proportion, boosted almost nine folds, from 137 million baht in 2000 to 1,210 million baht in 2004 notably by the funding from the Global Fund. As a result, the proportion of public spending decreased from 94.8% of total spending to 75.53% in 2004, while external sources increased from 5.20 % in 2000 to 24.47% in 2004. Among public sector, the Ministry of Public Health was major financing agent.

For AIDS spending by healthcare function, a major share was on treatment and care component. The total HIV/AIDS spending on treatment and care was 4,184 million baht in 2004, 2.48 times higher than level of spending in the year 2000. As a result of universal access to Anti-retroviral Therapy (ART), the spending on ART increased nearly five folds, from 498 millions baht or 30% of total spending on treatment and care in 2000 to 2,054 millions baht or 49% in 2004; to which, external assistance contributed to the increasing share of ART in 2004. The expenditure on prevention has been relatively small, increased from 483 million Baht in 2000 to 640 million Baht in 2004. The Prevention of Mother to Child Transmission (PMTCT) was the major share among prevention related activities. ROW played critical role in filling the gap in prevention efforts, for example, scale up PMTCT during 2001-2002, initiatives among IDUs in 2003, and prevention among special population—sea-farers in 2004.

Recommendations

We recommend to renew HIV/AIDS prevention by an increase in the public spending and to ensure effective and innovative interventions on high risk behavior, and addressing

emerging sub-population especially among the youth, who had increasing unsafe sex practices.

As the universal access to ART Program becomes mature, there is an increasing need for more expensive patented second line ARV, to replace the first line generation that might not work well, and that has major impact on program resources. Policy to adopt second line drugs must be formulated carefully, take into account a long term significant fiscal needs; and not to jeopardize the level of resources allocated to prevention. At this juncture, ART program efforts should be given to secure the highest adherence to the first line drugs.

There is a need to establish an integrated information system for the efficient management of HIV/AIDS resources. NASA is useful tool to inform policy decision on effective allocation of limited resources. It provides information on amount of resource used and pattern of spending. NASA reports resource availability, when matching with resource need forecast, a financial gap is estimated. Resources gap is important information for resource mobilization and efficiency improvement.

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Chapter 1 Country background

Thailand Profile

Human development profile

- 2003 HDI 0.778
- HID trends 1975 0.614, 1980 0.652, 1985 0.678, 1990 0.714, 1995 0.749, 2003 0.778

Demographic parameters:

- Population 63.1 million 2003
- Life expectancy (200-2005) 69.7
- Total fertility rate (2000-2005) 1.9

Economic performance

- GDP per capita 7,595 US\$PPP 2003, growth rate 2.8% (1990-2003)
- Income distributions, richest 10% to poorest 10% 13.4, richest 20% to poorest 20% 8.3, Gini index 43.2 (survey year 2000)

Education profile

- Adult literacy rate (5 ages 15 and above)(HDI), 2003 92.6
- Public education expenditure(2000-2002) 5.2 %GDP, total government expenditure 28.3%, of which primary 42.3%, secondary 20.5%, tertiary 21.7 (2000-2002)

Health profile (2003)

- IMR 23, U5MR 26, adjusted MMR 44 (2000), reported MMR 36 (1985-2002)
- One year old fully immunized against measles 94%
- Birth attended by skilled health staff 1995-2003, 99%
- Physician per 100,000 population, 1990-2004, 30
- 2002 Total Health Expenditure: Public 3.1%GDP, Private 1.3%GDP, per capita 321US\$PPP

HIV/AIDS profile (2003)

- 2003 People Living with HIV/AIDS adult 15-49, 1.5% [0.8-2.8]
- Adult HIV Prevalence (% ages 15-49), 2003 2.8%
- HIV/AIDS Infected Adults and Children (thousand persons) 572.5 (2004)

Source: UNDP 2005 Human Development Indicators

Population and major demographic parameters: Thailand is a middle-income country that has seen remarkable progress in human development in the last twenty years with Human Development Rating of 0.778 in 2003. ¹ The population of Thailand reached 64.86 million in 2004, of which approximately 25 percent are under the age of 15. With a growth rate of 1.2 to 1.4 percent per year the population is projected to exceed 70 million by 2010. ²

Economic performance: In the year 2004 Thai economic growth is 6.1 % slowing down from 6.9 percent growth rate in the previous year, with per capita income of 102,447 baht (at 1988 constant price). The country reported poverty incidence of 11.25 percent in 2004. For the year 2005, Thai economic growth is 4.7 % with 4.5 % inflation. ³

Education profile: Adult literacy rate increased from 87.4% in 1980 to 94.2% in 1995, 95.5% in 2000 and is predicted at 97.0% in 2010, of which female literacy rate are 82.6%, 92.0%, 93.9%, and 95.6%, and male literacy rate are 92.3%, 96.3%, 97.2%

and 98.1%, during corresponding period.⁴ The emphasis on development of the Kingdom's human resources is highlighted as the highest priority in the Eighth National Economic and Social Development Plan (1997-2002) and this emphasis is expected to continue.

Health profile and health financing in general

In 2000-2005, the report of UNDP 2005 indicated the life expectancy at birth of Thai people was 69.7 years. Moreover, The World Health Report 2003 also revealed that, in 2002, Thailand's healthy life expectancy (HALE) was 60.1 years: 57.7 for males and 62.4 for females, which were lower than those for several other ASEAN countries.⁵ The maternal mortality ratio (MMR) has declined from 374.3 per 100,000 live births in 1962 to 13.7 per 100,000 live births in 2003. The infant mortality rate (IMR, per 1,000 live births) rapidly declined from 84.3 in 1964 to 40.7 in 1984 and to 26.1 in 1996. It is expected that IMR will drop further to 20.5 in 2020. The child mortality rate (among children aged under 5 years per 1,000 live births, U5MR) has not significantly changed from 12.8 per 1000 live birth in 1990 to 12.0 per 1000 live birth in 2003. Overall, the trends in STI prevalence in Thailand between 1977 and 2003 have been improving. In particular, after 1986, the prevalence rate of STIs has fallen from 7.85 per 1,000 population in 1986 to 0.17 per 1,000 population in 2003.⁶ In 2003, there were 28,920 medical doctors who were still alive and registered with the Medical Council of Thailand. But according to the 2000 population census, there were actually 22,465 doctors actually practicing.⁷ National Health Account indicated that the total health expenditure (THE) of Thailand in 1994 was 127,655 million baht at current price including capital formation. Ratio of THE to Gross Domestic Product (GDP) at constant price was 3.2 percent in 1994 and 3.9 percent in 1997, the year which Thailand faced the economic crisis, after that period the ratios of THE to GDP had decreased continuously to 3.2 percent in the year 2001. In 2001, it was found that 51.8% of THE was spent in public hospitals, while 16.1% was spent in private hospitals. Private clinics and chemists had about the same share of 6.4%. The expenditure in public healthcare center was only 1.9%. The provision and administration of public health programs consumed 9.1% and the expenditure on general health administration and insurance was 7.5%. In 2001, 95% of THE was spent on recurrent expenditure, of which 79% was personal healthcare consumption. The biggest share of personal healthcare consumption was attributed to outpatient healthcare services (40%) and inpatient healthcare (33%). The health administration

and health insurance expense was 8%, whereas, the prevention and public health services consumed 8%. Only 5% of THE was spent on investment. ⁸

HIV/AIDS epidemiology data

The first case of AIDS was reported in Thailand in 1984, and it is believed that widespread transmission began in the late 1980s.⁹ In 1987 and 1988, HIV infection exploded among injecting drug users (IDUS). The second wave of infection spread among sex workers in 1989 to 1990. The rising infection level among sex workers launched subsequent waves of the epidemic in the male clients of sex workers, their wives and partners, and their children.¹⁰ Estimated number of adult (15-49) people living with HIV: 560,000 (range 310,000 to 1,000,000) by the end of 2003, HIV prevalence among adults (15-49): 1.5% (range 0.8-2.8) by the end of 2003. ¹¹ International Health Policy Program –Thailand and national Economics and Social Development Board have published National Aids Account (NAA) in 2005. NAA is a matrix illustrating the total HIV/AIDS expenditure from all sources of finance, including public, private, households and external source during a four year period of 200 to 2003. In 2001 the per capita health expenditure was 254 US\$PPP, or 3.6% GDP (Public sources 2.1% GDP, private source 1.6% GDP). AIDS expenditure increased from 113 to 179 USD per PHA, or 2% to 2.24% of Current Health Expenditure. The provision of ART (46%) and treatment of opportunistic infection (33%) were the two major components, whereas others prevention constituted 9% of total program expenditures. Public sector spending accounted for 65% of total HIV/AIDS expenditures in 2003. The share of household out-of-pocket spending increased from 17% in 2000 to 21% in 2003. ¹²

HIV/AIDS intervention in country

Condom Promotion Program in Thailand

The results of the 100 % Condom Program and Condom Promotion Program to prevent HIV infection have been satisfied. The 100% Condom Program was established in 1991 to prevent sexual transmission among sex workers and their clients through Government subsidization. As a result of the program, the rate of condom used among SW has since been maintained at a level higher than 95%; this has concrete a benefit effect to prevent HIV infection.

According to the continuous dynamic movement of sexual behavior, Condom Promotion Program was launched to encourage condom use in general population, particularly those who are at the reproductive age. There are 3 main measures to promote condom use in general population. First, by providing more convenient and accessible condom at low price by installing automatic condom vending machines in public places. The second is to enable positive environment for safe sex behavior in Thai society. Programs promoting awareness of HIV/AIDS among general Thai people and the target population and the people at reproductive age has been implemented. The third measure is to adopt correct and positive attitude to safe sex and to implement sustainable preventive behavior in youth.

Antiretroviral Program for People Living with HIV/AIDS (PLWA)

The National Anti-retroviral Program has been continuously developing and can be divided into 3 phases, as the following:

Phase 1 1992 – 1997: The aims were to prepare the readiness health service system, and to conduct a study to identify the most appropriate way to provide service to the AIDS patients. These included: Assessment of the readiness of the health care service for HIV–infected and AIDS patients in antiretroviral treatment. Study of proper channel of antiretroviral treatment for HIV/AIDS patients. Use of mono therapy (Zidovudine, AZT) free of charge for low–income HIV infected patients.

Phase 2 1997 – 2000: The main objectives were to strengthen clinical service centers through capacity building, networking, with strategy to integrate ARV into a comprehensive care for PLWA, and to monitor long term treatment with ARV. Main activities were; Development of clinical research network to provide and assess comprehensive care which anti-retroviral medicine usage and to identify the most effective formula, development of the health personnel and health center's capacity to be ready to treat HIV/AIDS patients with anti retroviral medicines. Shift from mono therapy to dual therapy, and at the final year the triple therapy was introduced. Start of the development project to expand the service system under a project entitled Access to Care Program (ATC): 1,200 patients were treated using highly active antiretroviral treatment (HAART). Patients co – payment for the cost of HAART has been tested

Phase 3 2000 – Present: This phase is currently ongoing with the expansion of ARV services. The factors which attribute to the development were based on the lowering of the price of ARV and the local production of generic medicine. The activities in this phase include: Infrastructure development in the health service system under ATC program. The Government Pharmaceutical Organization (GPO), Ministry of Public Health, produce high quality antiretroviral medicines. Increase the number of hospitals to provide care and support HIV/AIDS patients. Enhance collaboration among the government sector, private sectors, community organizations, and HIV patient networks. Strengthen quality assurance of medical care and lab check. National ARV regimen which are being conduct throughout the country include GPO-vir, as first line treatment, GPO-vir is a mixture of Stavudine (d4T), Lamivudine(3TC) and Nevirapine(NVP). For those who are allergic to the first line drug, the second line comprised of d4T, 3TC and Efavirenz(EFV), or the third line, comprised of d4T, 3TC. and Indinavir (IDV) / Ritonavir(RTV), will be available.

Present Activities: The National Access to Antiretroviral Program for PHA (NAPHA) to accelerate the service extension to all medically eligible HIV/AIDS patients. Set up the achievement bench mark for ARV expansion. By the year 2004, a target has been set as 50,000 cases. The Governments budget for medicines covers 40,000 patients, and the rest, 10,000 persons, are supported by the Global Fund to Fight AIDS, TB, and Malaria. Currently (March 2004), there are 30,430 cases receiving ARV. It is anticipated that by the end of this fiscal year, the target will be achieved.

HIV/AIDS Care with Community Involvement

To mitigate the impact of HIV/AIDS epidemic, the national program, called Comprehensive and Continuum Care (CCC), was initiated in 1994 and expanded throughout the country in order to provide continuum support and care for People Living with HIV/AIDS (PLWA) and their families. CCC composed bio-medical care, counseling, and social services to meet the physical, psychological, and socio-economic need through many health care facilities as well as supportive health care agencies at the provincial and regional level. Up until present, CCC are completely incorporated into health care system and health networking in community. It is integrated in all levels of health facilities including regional hospital, general hospital (provincial hospital), community hospital (district hospital) and health center.

To provide health care services for PLWA , it is necessary to consider the situation, the nature of the problems, and the effects on PLWA both as an individual and a family. Problems and effects on PLWAs and their families happen in several aspects and change overtime. In this regard, a health care system for PLWA should be developed to cover both the aspects and time dimension. For Comprehensive care, care services must include medical care, psychological care, socio-economic care, and right protection corresponding to PLWA's problems and needs. For continuum care, the care from health service units to home and community must be developed. 'Time' is considered as one dimension of continuum care which should be long enough to ensure PLWA and their families being able to work and to live normal life in their societies. 'Place' is another crucial dimension where care and support should be continuously provided apart from health service facility. Training the skills on self-care, as a part of health education program, has been done. Meanwhile, home visit is also the vital component to provide medical care, psychological and socio-economical support to PLWA.

Based on the evaluation of CCC system during 1997-2001, it was revealed that the system of CCC has been well developed. Lesson learned was that commitment of health personnel and the participation of all parties concerned were important factors in the success the Comprehensive and Continuum Care program.

Collaboration among GO, NGO, PLWA and Civil Societal Organization in National HIV/AIDS Program

The Thai Government has foreseen the importance of the involvement from civil societal organizations in the development and implementation of the HIV/AIDS program since the beginning of the epidemic in the country. Partnership among governmental organizations (GO), non-governmental organizations (NGO) and groups of people living with HIV/AIDS (PLWA) has been fostered and strengthened through out the course of the Program development during the past twenty years.

Starting in year 1992, an annual national budget has been allocated to support the works performed by NGOs and PLWA groups. This financial amount has grown up and is still in the scope of partnership in HIV/AIDS program up until the present time. The national budget is provided to NGO and PLWA groups in order to support all kinds of prevention

and care activities aiming towards different target groups. It can also be used to mitigate the impact which occurred among HIV/AIDS affected families and individuals. NGOs and PLWA groups have to submit their project proposals which have to be in accordance with the National AIDS Plan and its strategies. All the proposals are reviewed and rated by a committee, representing by staff of Government, NGO and PLWA, at the regional level. Selected project with high score receive grant from the Government budget.

The most important point in this topic is the network of work among these organizations. The Thai NGO Coalition on AIDS (TNCA), whose members are now over 150 is the core mechanism in networking all HIV/AIDS works among NGOs. In addition to the members in TNCA, it is estimated that, country wide, there are more than 500 NGOs or community based organization working in the field of HIV/AIDS.

Besides, the Thai Network of People Living with HIV (TNP+), whose member are now over 700 PLWA groups, are the vital hub for networking and collaboration on HIV/AIDS work among PLWA. Moreover, at the policy level, the representatives from both TNCA and TNP+ are members to the National AIDS Committee. Both of them have been serving as key members in problem solving, policy and intervention formulations in several occasions.

National Plan for the Prevention and Alleviation of AIDS in Thailand 2002-2006

The Ninth National Economic and Social Development Plan (2002-2006) address the holistic approach targeting the people as the center of the development. In this regard, the plan strongly urged for balancing development among economy, society, political system, and environment in order to assure social well being, improve economic self-reliance, and to maintain its distinctive identity. It also called for changes in the administrative system of the country in order to assure sustainable development.

The National Plan for the Prevention and Alleviation of HIV/AIDS in Thailand 2002-2006 follows the concept of the overall National Development Plan. In addition its specific direction has been adapted to response to the rapid change HIV/AIDS epidemiological situation. Followings are a few key components of the National AIDS Plan.

Vision: Individuals, families and communities form a strong and healthy society where people possess wisdom and knowledge, have a mutual sense of concern, and work together to prevent and alleviate the HIV/AIDS problem.

Orientation: Emphasize developing the capacities and participation of individuals, families, and communities in preventing and alleviating the HIV/AIDS problem. Emphasize a holistic community-based approach to the prevention and alleviation of the HIV/AIDS problem to assure that all relevant parties provide support in addressing the specific needs of each locality and target group in an appropriate manner. Emphasize administrative integration so that the work of HIV/AIDS prevention and alleviation becomes the shared task of all related parties.

Goals: To have individuals, families, and communities work together to prevent the spread of HIV/AIDS

- To have individuals, families, and communities work together to alleviate the impact of HIV/AIDS at all levels of society
- To facilitate prevention and alleviation of the HIV/AIDS problem by strengthening the foundations of society

Targets: The incidence of HIV/AIDS prevalence among reproductive age population (15-49 years of age) will have been reduced to less than 1% by the end of the plan period.

At least eighty percent of persons living with HIV/AIDS and affected individuals will have access to and be receiving appropriate care and support from public, private and community providers of social, economic, educational, and primary health care services.

Local administrations and community organizations throughout the country will efficiently and continuously plan and carry out the work on HIV/AIDS prevention and alleviation.

Strategies of the National Plan for the Prevention and Alleviation of HIV/AIDS in Thailand 2002-2006

There are 5 strategies included in this plan

1. Developing the potential of individuals, families, communities and the broader social environment to prevent and alleviate HIV/AIDS problem.

2. Establishing health and social welfare services for the prevention and alleviation of HIV/AIDS.
3. Developing knowledge and research for the prevention and alleviation of HIV/AIDS.
4. International collaboration for the prevention and alleviation of HIV/AIDS.
5. Developing a collective program management system to integrate the tasks of HIV/AIDS prevention and alleviation.

The National Plan for the Prevention and Alleviation of AIDS in Thailand 2002-2006 seeks to develop problem framework for integrating the prevention and alleviation efforts of all relevant parties, public and private, at all levels of society. Up to the present, AIDS prevention and problem alleviation efforts in Thailand have been undertaken by mobilizing all relevant sectors of society. At the national, provincial, district, and local levels, state agencies, public interest groups, private businesses, community organizations, and groups run by people living with HIV/AIDS have administered and implemented prevention and problem alleviation Programs under the auspices of the National Committee for the Prevention and Control of AIDS. In broadening participation and allowing various sectors to freely determine the direction of work efforts, Thailand has been able to prevent and alleviate its AIDS problem to certain degree.

At the same time, the Plan and its working mechanisms have helped to reduce redundant efforts, allowing for greater economy in the use of resources.

Chapter 2 Objective and method

Objective

1. To build up capacity in Thailand on development of National AIDS Spending Assessment (NASA)
2. To estimate the total HIV/AIDS spending from public and external source of finance during a five year period of 2000-2004 by spending profile.
3. To provide policy recommendation on proper proportion of finances by different functions.

Method

To achieve the National AIDS Spending Assessment (NASA), a study will assess direct expenditure for managing HIV/Aids problem, particularly on prevention and control of HIV/AIDS epidemic and caring for people affected and afflicted with HIV/AIDS ; over all expenditure will be classified by its sources of finance, financing agent, and type of function. Where:

- Financing sources: institutions or entities that provide the funds used in the system by financing agent.
- Financing agent: institution or entities that channel the funds provided by financing sources and use those funds to pay for, or purchase, the activities.
- Function: the type of goods and services provided and activities; there are five main function as follow 1. Prevention-related activities 2. Treatment and care components 3. Orphan and Vulnerable children 4. AIDS program costs 5. Human resources receiving wage benefits

The main sources of finance will be classified into 2 parts; the first part is Public Sector expenditure and the second part is external assistance (donor). This study does not take in to account of out of pocket household spending.

Thai working group provide Thailand National AIDS Account 2000-2003, in which there are HIV/AIDS spending by sources of finance and function. Thus the primary data collection method for Thailand National AIDS Spending Assessment (NASA) 2000-2004 is based on the re-categorization of the existing 2-dimensional Thai National AIDS Account (NAA) 2000-2003. The data for the year 2000-2003 from Thai NAA were verified, re-

categorized and translate into the new categories according to the NASA Matrix as follow (see table 2.1).

Table 2.1 Data transform from NAA into NASA

NAA		NASA	
Code ICHC	Function	Code	Function
HC6.3.4	AIDS education & life skills	1.1	<i>Mass media</i>
HC6.3.1	Voluntary Counseling and Testing	1.3	<i>Voluntary counseling and testing (only for general population)</i>
HC6.3.9	IVDU harm reduction (free distribution of syringes and needles, detoxification)	1.8	<i>Harm reduction Programs for IDUs</i>
HC6.3.8	Safer sex practices (Condom)	1.13	<i>Public and commercial sector condom provision</i>
HC1.3.5	STIs	1.14	<i>Improving management of STIs</i>
HC6.1.1	Prevention of Mother to child transmission (lab, drug, and breast milk substitution)	1.15	<i>Prevention of mother-to-child transmission</i>
HC6.3.2	Blood safety	1.16	<i>Blood safety</i>
HC1.3.6	OI treatment and monitoring	2.3	<i>OI Treatment</i>
HC1.1	Inpatient care (OI + lab)	2.3	<i>OI Treatment</i>
HC1.3.7	ART program (including CD4, viral load, drug resistance and medicine)	2.5	<i>ART, including nutritional support</i>
HC1.3.7	ART program (including CD4, viral load, drug resistance and medicine)	2.6	<i>Laboratory testing</i>
HC1.2	Comprehensive continuum of care (CCC) at home	2.7	<i>Home base care</i>
HC1.2	Day care	2.8	<i>Day care</i>
HCR3	Mitigating impact (care for orphan, protecting rights of PLWA and social supports)	3.3	<i>Family/home support</i>
HC7	Program Administration	4.1	<i>Management</i>
HCR3	Research and development	4.4	<i>Operations Research (research and development)</i>
HCR3	Social Research	4.4	<i>Operations Research (research and development)</i>
HC6.3.10	Surveillance of HIV/AIDS	4.5	<i>surveillance (sero-sentinel, behavior surveillance)</i>
HCR2	Education and training	4.6	<i>Training</i>

The main approaches to conduct this NASA exercise is similar to that of Thailand National Aids Account 2000-2003 (NAA)

1. Direct compilation from existing financial records

The data on actual expenditure was retrieved from available government and donor sources such as ministry of public health, the comptroller general department, OECD, Global fund, and Thailand International Development Cooperation Agency. After data cleaning and verification, it was fill in the dummy matrix table on spending by financing

sources, agencies and by 5 main health care functions which were agreed upon by participating countries during the induction workshop.

2. Imputation

As some data were incorporated into general spending, especially OI treatment, PQ approach was applied. P refers to unit cost from the existing studies; the adjustments by CPI index were also applied to enable more accurate comparison. Q refers to quantity of services or other specific activities. The estimate of quantity applied mostly epidemiological data where available. The results of PQ approach were filled in the dummy table based on several assumptions.

Limitation

All agencies had different reporting profile and functions which were not consistent with the NASA format. Moreover, some of the functions contain overlapping expenditure functions and can not be disaggregated. This had made it difficult to assign the expenditure into the NASA function precisely, especially the data retrieved from Global Fund and Thailand International Development Cooperation Agency which provides only project level information and does not contain break down into functions.

Regarding the PQ approach, almost all of the calculation of "P" derived from the research is based on base year. In the context of healthcare, price (such as drug, medical supplies equipment) changes very quickly and by using CPI adjusted price, we only capture part of the changes which does not reflect the true price. The method of treatment which influences and is influenced by the change in drug price is also susceptible to change. This change will challenge the validity of the research based on static methodology.

Chapter 3 Results

3.1 National HIV/AIDS spending 2000-2004 and essential indicators for 2000-2004

NASA Thailand reveals that, the spending on HIV/AIDS has almost doubled in the last 5 years, from 65.4 million USD in 2000 to 122.90 million USD in 2004. As a result expenditure on, HIV/AIDS spending per capita increased from 1.05 USD in 2000 to 1.91 USD in 2004 while expenditure per capita PLWA increased dramatically from 94.19 USD in 2000 to 214.68 USD in 2004 (128% increase). Share of HIV/AIDS expenditure to total health expenditure (THE) increased from 1.57% in 2000 to 2.64% in 2004. Meanwhile, Thailand spending on HIV/AIDS as a percentage of GDP increased from 0.05% in 2000 to 0.08 % in 2004. Table 3.1 shows HIV/AIDS spending during 2000-2004 including selected indicators derived from such amount of spending.

Table 3.1 Total amount of HIV/AIDS spending and selected indicators on HIV/AIDS spending, Thailand 2000-2004, current year price

Essential Indicators	Years				
	2000	2001	2002	2003	2004
Total population(1000 persons)	62,237	62,668	63,142	63,656	64,197
Number of new HIV/AIDS	26,650	24,933	24,226	24,114	22,877
Number of People living with HIV/AIDS	694,564	665,344	635,057	603,942	572,484
Nominal GDP at current price (million Baht)	4,922,731	5,133,502	5,446,043	5,930,362	6,576,023
Health Exp (million Baht)	167,225.95	170,306.31	161,634.57	171,673.32	187,112.38
HIV/AIDS expenditure					
· total amount (million Baht)	2,623.27	2,571.75	3,174.24	3,549.39	4,943.32
· total amount (million USD)	65.40	57.88	73.89	85.56	122.90
· per capita general pop (USD)	1.05	0.92	1.17	1.34	1.91
· per capita PLWA (USD)	94.16	86.99	116.35	141.67	214.68
· as % GDP	0.05%	0.05%	0.06%	0.06%	0.08%
· as % Total health expenditure	1.51%	1.45%	1.89%	1.99%	2.49%
as % Total health expenditure	1.57	1.51	1.96	2.07	2.64
Exchange rate (Baht per 1 USD)	40.11	44.43	42.96	41.48	40.22

Source: PLWA: Thai working group projection on PLWA, 2001 (1995-2010)

No of new HIV/AIDS: Bureau of Epidemiology, MOPH

Nominal GDP: NESDB

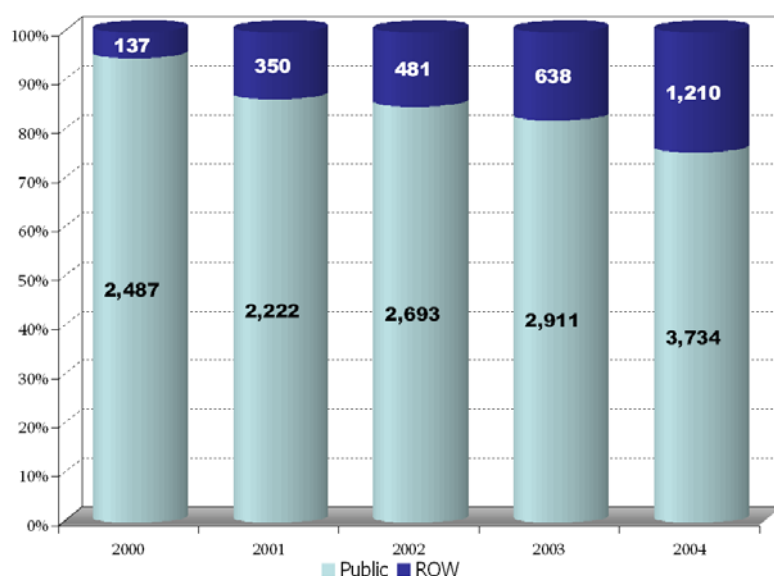
Health Expenditure: Preliminary estimates, National Health Accounts unit, EIP/HSF/CEP, World health Organization

Exchange rate: Bank of Thailand

3.2 HIV/AIDS spending by financing sources 2000-2004

Public spending, consisted of government budget expenditure, civil service medical benefit scheme (CSMBS) and social security Scheme (SSS), played a major role in financing AIDS program in Thailand. It increased averagely ten percent per annum from 2,487 million baht in 2000 to 3,737 million baht in 2004, external spending on HIV/AIDS boosted almost nine folds, from 137 million baht in 2000 to 1,210 million baht in 2004 (See figure 3.1). However, proportion of public spending showed decreasing trend, from 94.8% in 2000, to 75.53% in 2004. On the other hand, external sources increased from 5.20 % in 2000 to 24.47% in 2004. Among ROW, the Global Fund was major financing source from ROW. It granted Thailand in the amount of 28.52 million USD in 2004 compared to 8.43 million USD granted in 2003. It should be noted that this study does not investigate private spending especially out of pocket spending by households.

Figure 3.1 Public and external sources spending on HIV/AIDS 2000-2004 (million Thai baht)

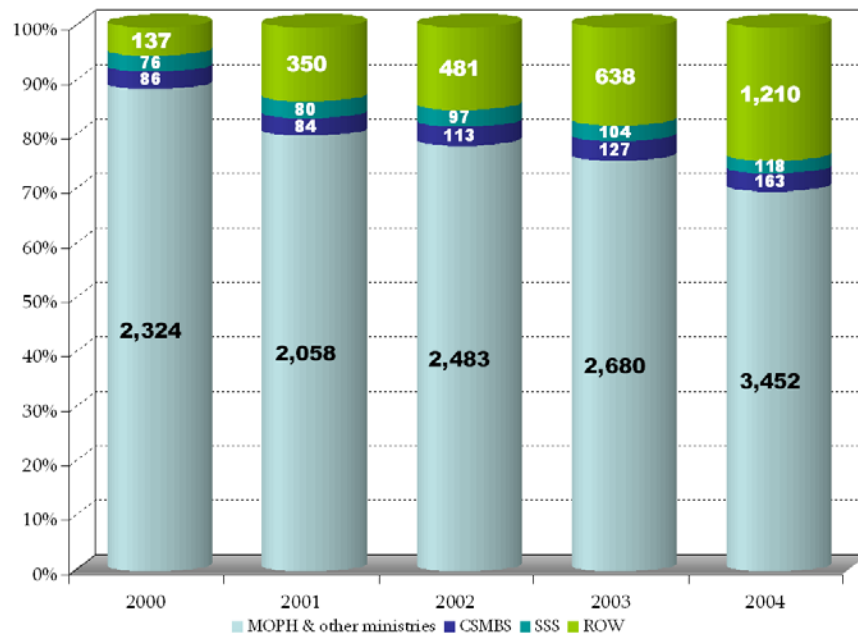


3.3 HIV/AIDS spending by financing agents 2000-2004

On financing agents, Ministry of Public Health and other ministries, as shown in Figure 3.2, increased from 2,324.0 millions baht in 2000 to 3,450.2 millions baht in 2004, or averagely ten percent per annum despite fluctuation, during 2000-2001, mainly due to economic crisis which Thailand had to observe strictly fiscal discipline.

However, the proportion of spending by insurance scheme namely Civil Servant Benefit Scheme, CSMBBS (3.3% - 3.6%) and Social Security Scheme, SSS (2.4% - 3.1%) were rather stable throughout the period 2000-2004.

Figure 3. 2 profile of financing agents and total amount of HIV/AIDS spending 2000-2004



3.4 HIV/AIDS spending by healthcare function 2000-2004

For spending by function, a major share of HIV/AIDS spending was on treatment and care component, as shown in table 3.2. It steadily increased, from 59.5% of total expenditure on HIV/AIDS in 2001 to 84.6% in 2004. This is due to Thailand's enhancement of the National ART program. In monetary terms, the total HIV/AIDS spending on treatment and care in 2004 was 4,184 million baht, 2.48 times higher than level of spending the year 2000.

The expenditure on prevention has been relatively small, increasing from 483 million Baht in 2000 to 640 million Baht in 2004. However, the share has been falling, especially, in the last 2 years when it fell by half, 24.5% in 2002 to 13.0% in 2004. The share of expenditure on orphans and OVC has also been declining from 3.29% in 2001 to less than 1% in 2004.

The share of AIDS program, generally administration and management, also played minor role and dramatically decreased from 14.05 % in 2000 to 1.58 % in 2004. The HIV/AIDS spending for AIDS program in the year 2000 was 4.7 times in monetary term comparing to those in the year 2004.

Table 3.2 Thailand HIV/AIDS spending by functions, 2000-2004

Functions	Year				
	2000	2001	2002	2003	2004
Prevention-related activities	483 18.42%	562 21.87%	778 24.52%	522 14.72%	640 12.96%
Treatment and care components	1,687 64.30%	1,529 59.46%	2,124 66.90%	2,634 74.21%	4,184 84.64%
Orphan and OVC	85 3.24%	85 3.29%	84 2.64%	81 2.27%	41 0.82%
AIDS program costs	369 14.05%	396 15.39%	188 5.94%	312 8.80%	78 1.58%

Figure 3.3 shows that PMTCT had major share among prevention related activities. It increased to the peak 65% in 2002, as an influence of ROW finance which enabled Thailand to achieve universal coverage of PMTCT, then, reduced to 26 % in 2004. There was also increasing trend of mass media spending, from 4% to 18 % over the five year period.

Figure 3.3 Profile of HIV/AIDS spending on selected prevention activities, 2000-2004

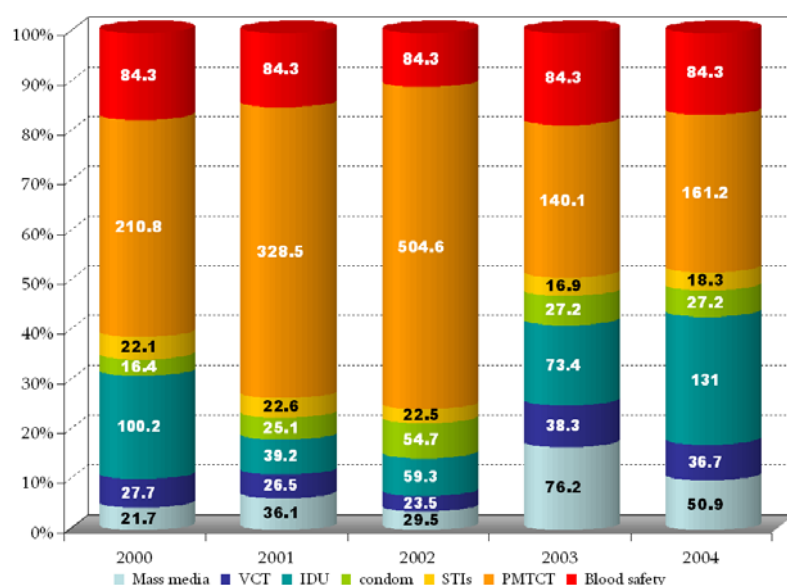
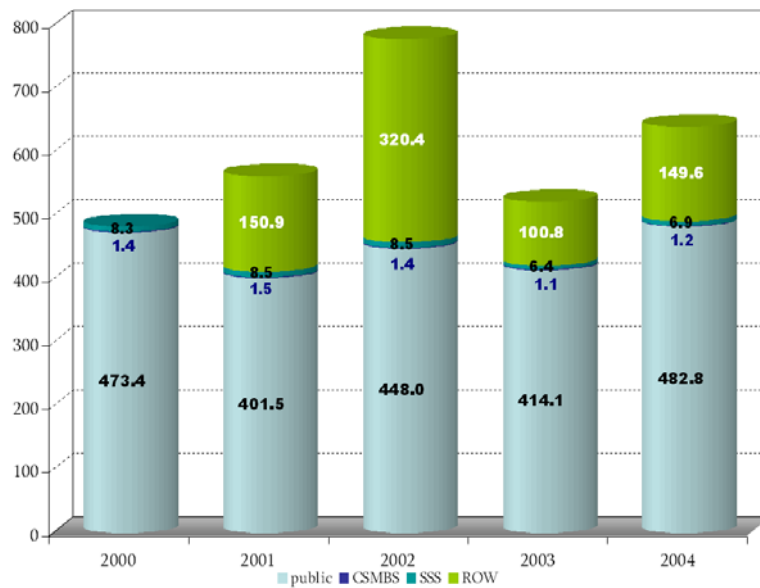


Figure 3.4 indicated that ROW spent substantial amount on prevention related activities from 2001 onward. Detailed on HIV/AIDS spending, in Table A2-Table A6, showed that ROW filled gap in Thailand prevention efforts, for example, scale up PMTCT during 2001-2002, initiatives among IDUs in 2003, and prevention among special population—seafarers in 2004.

Figure 3.4 Thailand spending on HIV/AIDS prevention classified by sources of finance, 2000-2004 (unit: millions baht)

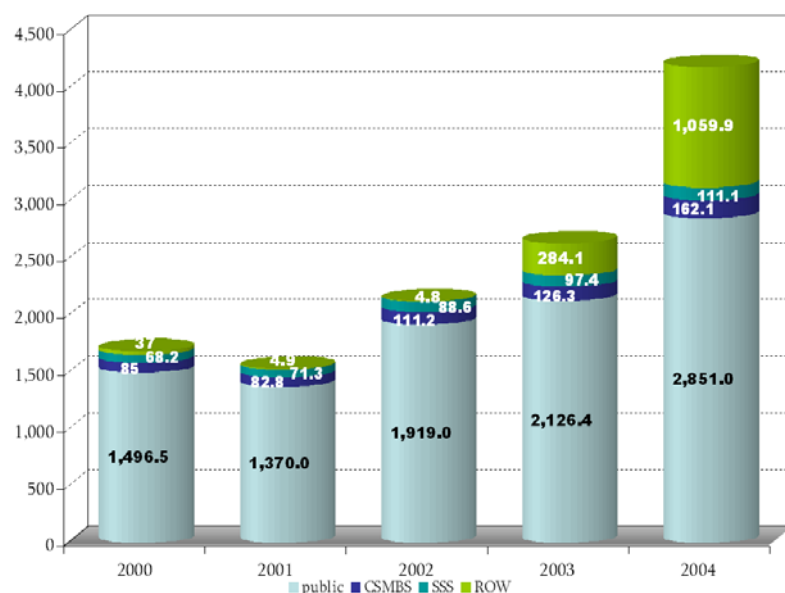


For treatment and care component, table 3.3 revealed that OI played a major role. The share of OI treatment increased from 67% in 2000 to 76% in 2001 then it declined to 36% in 2004. Share of ART spending increased nearly five folds, from 498 millions baht or 30% in 2000 to 2,054 millions baht or 49 % in 2004. The share of spending on Laboratory and testing also increased from 2% in 2001 to 15 % in 2005. It is noticeable that in the year 2005, the spending for laboratory and testing was 23.24 times in monetary term compare to the year 2000. It should be noted from figure 3.5 that public spending on treatment and care was double from 2000 to 2004. Furthermore, increasing external assistance observed in 2004 to contributed increasing share of ART in 2004.

Table 3.3 HIV/AIDS spending by major function Thailand 2000-2004 (unit: millions baht)

Treatment Component	2000	2001	2002	2003	2004
OI Treatment	1,125 67%	1,162 76%	1,396 66%	1,430 54%	1,506 36%
ART, including nutritional support	498 30%	350 23%	581 27%	860 33%	2,054 49%
Laboratory testing	27 2%	17 1%	146 7%	343 13%	625 15%
Home base care	37 2%	- 0%	- 0%	- 0%	- 0%
Total HIV/AIDS treatment care	1,687 100%	1,529 100%	2,124 100%	2,634 100%	4,184 100%

Figure 3.5 Thailand spending on HIV/AIDS treatment and care classified by sources of finance, 2000-2004 (unit: millions baht)



3.5 Discussion on results from NASA

Who played the major role on NASA?

Undoubtedly in Thailand, public sector was major financing sources for HIV/AIDS program. However it had been declining every year from 94.8 % in 2000 to 75.5 % in 2004 and there was remarkable increase in the share of external sources, especially from the Global Fund; in 2003 external sources contributed to 18 % and increased to 24.5 % in 2004. While new resource from external source coupled with reduction in ART price widened opportunity for Thailand to enhance HIV/AIDS program especially for ART treatment. Uncertainties arise from increase in cost of ART—either by change in ART

price or shifting treatment regimen—and, potential withdrawal of external support could jeopardize program sustainability as well as efficacy of the program.

Declining in prevention related activities may result in spiral increase in spending on curative in the future.

NASA exercise reveals that HIV/AIDS prevention and related activities received a very small proportion of total HIV/AIDS spending. Even though the share of total HIV/AIDS spending on prevention related activities increased from 18.42 % of overall HIV/AIDS program in 2000 to the peak of 24.52 %, it declined continuously to 14.72% and 12.96% in 2003 and 2004 respectively. PMTCT received significant proportion among prevention activities, despite its decreasing trend due to drastic ART drug price reduction, reducing number of pregnancy, and lower HIV incidence among pregnant women. It also reveals that external support played critical role in prevention among IDUs and MSMs—groups practicing risk behaviour which were not openly targeted by public interventions. In February 2006 Thailand will launch the first HIV/AIDS prevention campaign aimed at men who have sex with men which will be run by Family Health International, nongovernmental organizations and government agencies, including Ministry of Public Health. This campaign will provide information about HIV and safer sex through magazine and radio advertisement, cell phone text messages, the Internet and posters.

Main feature of HIV/AIDS program in Thailand was massive spending on ART program.

Expenditure on treatment and care steadily increased from 59.5% of total expenditure on HIV/AIDS in 2001 to 84.6% of total expenditure on HIV/AIDS in 2004. OI and ART played two main roles in treatment and care. The NASA exercise revealed that OI treatment spending had a decreasing trend whereas ART spending had an increasing trend.

In 2004 the spending for ART was 5 times of those in 2000 as Thailand implemented a universal coverage policy on ARV treatment in the fiscal year of 2003 to assure that people living with AIDS would have access to ARV. This program was feasible because of country has capacity to produce generic ARV at affordable price in conjunction with

support from the Global Fund. Almost all of PLWHA enrolled in ART program were provided with first line regimen (GPO-Vir) which is considerable 3 times lower price than cheapest second regimen. However, there is an urgent need to maintain treatment adherence. As treatment failure, by any causes, would lead to higher cost of care i.e., higher spending on ART regardless sources of finance. In addition, it would compromise program efficacy. While there was anecdote report that universal health care coverage causes excessive financial burden to public hospitals, the same situation may also observe for universal ART program, thus jeopardize program sustainability.

With increasing in HIV/AIDS spending, there is a need for well-established and integrated information system for better management of HIV/AIDS resources.

While NASA informed amount of resource for HIV/AIDS program and its spending pattern, it also showed gap in attacking HIV/AIDS problems. NASA is useful financial information to inform policy decision and to manage HIV/AIDS problem in country. With drastically increase in spending on ART, it also reflects a need for well-functioning and up-to-date information for better allocation of resources. Despite most financial information already exists in public agencies—as routine financial report, there is no platform to compile, analyses, and synthesis those existed information; to integrate and interpret such information as evidence-based for action or for policy decision. In addition, every hospital that provide ART service has record of PLWHA, type of regimen administer. All this information is recorded in hospital routine report, if this has well-organized information system such as service availability mapping, both public and decision maker will have better information about ART distribution and management for efficient use of resource. Or, information on coverage of HIV/AIDS prevention among sub-population has already existed in routine report. All there examples reflect a need for well-establish platform for compiling both financial information—from all sources—and other routine information related to HIV/AIDS activities.

Chapter 4 Policy Implication and Recommendations

Several policy implications were drawn from the analysis of 2000-2004 NASA.

1. Renewing prevention by increase public spending and focus interventions among high risk behavior.

It is clear from NASA that Thailand's HIV/AIDS program was skewed toward treatment and care. Furthermore, it also showed that public spending for prevention was also limit among youth both in and out of schools, while prevention among high risk behavior groups such as IDUs and special population was mainly financed by ROW. Thus, there must be progressive increase in public spending on prevention. To which, priority should be given to innovative interventions addressing sub-population practice high risk behavior.

2. Seeking innovative financial mechanism to secure ART financing for PLWHA together with maintaining adherence.

While universal ART program was feasible because of country has capacity to produce generic ARV at affordable price in conjunction with support from the Global Fund. Adherence to treatment regimen is a key to maintain affordable level of finance. Thus, activities that help maintain treatment adherence should be given high priority. Furthermore, to anticipate with huge financial burden that may arise from shifting in treatment regimen, there is an urgent need to seek for innovative financial mechanism.

3. Establishing integrated information system for better management of HIV/AIDS resources.

NASA is useful financial information to inform policy decision and to manage HIV/AIDS problem in country. It provides information on amount of resource used and pattern of spending, as well as identifying potential gap in addressing HIV/AIDS problem. Relevant financial information to compile NASA already exists, but country lacks of platform to compile these information. Thus there is a need to establish integrated information

system from administrative records or routine report particularly on HIV/AIDS finance, ART service, and coverage of HIV/AIDS prevention.

Annex

List of abbreviation

ART	anti-retroviral therapy
ARV	Anti retro viral
BOT	Bank of Thailand
CSMBS	Civil Servant Medical Benefit Scheme
GDP	Gross domestic product
GF	Global Fund
HWS	Health and Welfare Survey
IP	In patient
IVDU/IDU	Intravenous Drug user
MOPH	Ministry of Public Health
MSM	Men who have sex with men
NAA	National AIDS Account- Thailand
NASA	Nation AIDS Spending Assessment
NESDB	National Economic and Social Development Board
NSO	National Statistical Office
OECD	Organization for Economic Co-operation and Development
OI	Opportunistic infection
OP	Out patient
PLWA	People living with HIV/AIDS
PMTCT	Prevention of mater to child transmission
PQ	Price and Quantity approach
ROW	Rest of the World , external sources of finance
SSS	Social security scheme
STIs	Sexual Transmitted infection
THE	Total Health Expenditure
U5MR	Under five mortality rate
UNDP	United Nations Development Program
VCT	Voluntary counseling and testing
WB	World Bank
WESR	Weekly Epidemiology Surveillance Report
WHO	World Health Organization
UN	The United Nations
HDI	Human development Index
USD	United States Dollars
IMR	Infant mortality rate
MMR	Maternal mortality ratio
US\$PPP	International purchasing power dollars
HALE	Health life expectation
IDUS	Injection drug users
PHA	People living with HIV/AIDS
ATC	Access to care program
HAART	Highly active antiretroviral treatment
GPO	Government Pharmaceutical organization
NVP	Nevirapine
EFV	Efavirenz
IDV	Indinavir
TB	Tuberculosis
CCC	Comprehensive and continuum care
GO	Government Organization
NGO	Non Government Organization
TNCA	Thai Net work of people living with HIV

NASA Matrix

Table A1 National AIDS Spending Assessment by Function (million Baht), 2000-2004

Functions		Year				
		2000	2001	2002	2003	2004
1. Prevention-related activities		483.13	562.40	778.33	522.33	640.41
1	Mass media	21.66	36.15	29.51	76.22	50.90
2	Community mobilization	-	-	-	-	-
3	Voluntary counseling and testing (only for general population)	27.72	26.51	23.47	38.32	36.69
4	Youth in school	-	-	-	-	8.39
5	Youth out of school	-	-	-	-	18.95
6	Programs focused on sex workers and their clients	-	-	-	-	-
7	Programs focused on MSM	-	-	-	-	-
8	Harm reduction Programs for IDUs	100.17	39.24	59.27	73.40	130.97
9	Workplace	-	-	-	-	-
10	Prevention Programs for people living with HIV	-	-	-	-	-
11	Special populations	-	-	-	65.84	103.50
12	Condom social marketing	-	-	-	-	-
13	Public and commercial sector condom provision	16.40	25.08	54.68	27.17	27.17
14	Improving management of STIs	22.10	22.63	22.46	16.92	18.32
15	Prevention of mother-to-child transmission	210.77	328.47	504.63	140.13	161.19
16	Blood safety	84.32	84.32	84.32	84.32	84.32
17	Post-exposure prophylaxis (health care setting, rape)	-	-	-	-	-
18	Safe medical injections	-	-	-	-	-
19	Universal precautions	-	-	-	-	-
2. Treatment and care components		1,686.71	1,529.04	2,123.55	2,634.15	4184.11
1	Palliative care	-	-	-	-	-
2	Provider initiated testing	-	-	-	-	-
3	OI Treatment	1,124.63	1,162.28	1,396.36	1,430.33	1,505.62
4	OI Prophylaxis	-	-	-	-	-
5	ART, including nutritional support	498.18	350.09	581.23	860.45	2,053.73
6	Laboratory testing	26.88	16.67	145.97	343.38	624.76
7	Home base care	37.03	-	-	-	-
8	Daycare	-	-	-	-	-
9	Transportation for patient	-	-	-	-	-

Functions		Year				
		2000	2001	2002	2003	2004
3. Orphan and Vulnerable children --OVC		84.90	84.59	83.94	80.66	40.68
1	Education	-	-	-	-	-
2	Health care support	-	-	-	-	-
3	Family/home support	84.90	84.59	83.94	80.66	40.68
4	Community support	-	-	-	-	-
5	Organization costs	-	-	-	-	-
4. AIDS program costs		368.53	395.72	188.41	312.25	78.12
1	Management	45.51	75.31	46.48	-	-
2	Advocacy and communications	-	-	-	-	-
3	Monitoring and Evaluation	-	-	-	-	-
4	Operations Research (research and development)	135.70	209.93	124.63	297.01	62.88
5	surveillance (sero-sentinel, behavior surveillance)	19.14	18.03	16.86	15.21	15.24
6	Training	168.18	92.46	0.43	0.04	-
7	Logistics and supply, including transportation	-	-	-	-	-
8	Supervision of personnel and patient tracking	-	-	-	-	-
9	Drug resistance surveillance	-	-	-	-	-
10	Construction of new health centers	-	-	-	-	-
11	Laboratory and other infrastructure upgrading	-	-	-	-	-
5. Human resources receiving wage benefits (at delivery service)		-	-	-	-	-
1	monetary incentive for doctor	-	-	-	-	-
2	monetary incentive for nurse	-	-	-	-	-
3	Monetary incentive for other staff (i.e. laboratory, team leader etc.)	-	-	-	-	-
GRAND TOTAL, million Baht		2,623.27	2,571.75	3,174.24	3,549.39	4,943.32
GRAND TOTAL, million USD		65.40	57.88	73.89	85.56	122.90

Table A2 NASA 2000, million Baht, current year price (million Baht)

Functions		Financing agent				
		public	CSMBS	SSS	ROW	total
1. Prevention-related activities		473.39	1.42	8.32	-	483.13
1	Mass media	21.66	-	-	-	21.66
2	Community mobilization	-	-	-	-	-
3	Voluntary counseling and testing (only for general population)	27.72	-	-	-	27.72
4	Youth in school	-	-	-	-	-
5	Youth out of school	-	-	-	-	-
6	Programs focused on sex workers and their clients	-	-	-	-	-
7	Programs focused on MSM	-	-	-	-	-
8	Harm reduction Programs for IDUs	100.17	-	-	-	100.17
9	Workplace	-	-	-	-	-
10	Prevention Programs for people living with HIV	-	-	-	-	-
11	Special populations	-	-	-	-	-
12	Condom social marketing	-	-	-	-	-
13	Public and commercial sector condom provision	16.40	-	-	-	16.40
14	Improving management of STIs	12.36	1.42	8.32	-	22.10
15	Prevention of mother-to-child transmission	210.77	-	-	-	210.77
16	Blood safety	84.32	-	-	-	84.32
17	Post-exposure prophylaxis (health care setting, rape)	-	-	-	-	-
18	Safe medical injections	-	-	-	-	-
19	Universal precautions	-	-	-	-	-
2. Treatment and care components		1,496.54	84.99	68.16	37.03	1,686.71
1	Palliative care	-	-	-	-	-
2	Provider initiated testing	-	-	-	-	-
3	OI Treatment	1,000.47	62.08	62.08	-	1,124.63
4	OI Prophylaxis	-	-	-	-	-
5	ART, including nutritional support	470.67	21.73	5.77	-	498.18
6	Laboratory testing	25.40	1.17	0.31	-	26.88
7	Home base care	-	-	-	37.03	37.03
8	Daycare	-	-	-	-	-
9	Transportation for patient	-	-	-	-	-
3. Orphan and Vulnerable		84.90	-	-	-	84.90

Functions		Financing agent				
		public	CSMBS	SSS	ROW	total
children --OVC						
1	Education	-	-	-	-	-
2	Health care support	-	-	-	-	-
3	Family/home support	84.90	-	-	-	84.90
4	Community support	-	-	-	-	-
5	Organization costs	-	-	-	-	-
4. AIDS program costs		269.02	-	-	99.50	368.53
1	Management	45.51	-	-	-	45.51
2	Advocacy and communications	-	-	-	-	-
3	Monitoring and Evaluation	-	-	-	-	-
4	Operations Research (research and development)	59.48	-	-	76.22	135.70
5	surveillance (sero-sentinel, behavior surveillance)	19.14	-	-	-	19.14
6	Training	144.90	-	-	23.28	168.18
7	Logistics and supply, including transportation	-	-	-	-	-
8	Supervision of personnel and patient tracking	-	-	-	-	-
9	Drug resistance surveillance	-	-	-	-	-
10	Construction of new health centers	-	-	-	-	-
11	Laboratory and other infrastructure upgrading	-	-	-	-	-
5. Human resources receiving wage benefits (at delivery service)		-	-	-	-	-
1	monetary incentive for doctor	-	-	-	-	-
2	monetary incentive for nurse	-	-	-	-	-
3	Monetary incentive for other staff (i.e. laboratory, team leader etc.)	-	-	-	-	-
	GRAND TOTAL, million Baht	2,323.86	86.40	76.48	136.53	2,623.27
	GRAND TOTAL, million USD	57.94	2.15	1.91	3.40	65.40

Table A3 NASA 2001, million Baht, current year price (million Baht)

Functions		Financing agent				
		Public	CSMBS	SSS	ROW	Total
1. Prevention-related activities		401.51	1.45	8.52	150.91	562.40
1	Mass media	36.15	-	-	-	36.15
2	Community mobilization	-	-	-	-	-
3	Voluntary counseling and testing (only for general population)	26.51	-	-	-	26.51
4	Youth in school	-	-	-	-	-
5	Youth out of school	-	-	-	-	-
6	Program focused on sex workers and their clients	-	-	-	-	-
7	Program focused on MSM	-	-	-	-	-
8	Harm reduction program for IDUs	28.07	-	-	11.16	39.24
9	Workplace	-	-	-	-	-
10	Prevention program for people living with HIV	-	-	-	-	-
11	Special populations	-	-	-	-	-
12	Condom social marketing	-	-	-	-	-
13	Public and commercial sector condom provision	25.08	-	-	-	25.08
14	Improving management of STIs	12.66	1.45	8.52	-	22.63
15	Prevention of mother-to-child transmission	188.72	-	-	139.75	328.47
16	Blood safety	84.32	-	-	-	84.32
17	Post-exposure prophylaxis (health care setting, rape)	-	-	-	-	-
18	Safe medical injections	-	-	-	-	-
19	Universal precautions	-	-	-	-	-
2. Treatment and care components		1,369.99	82.83	71.28	4.94	1,529.04
1	Palliative care	-	-	-	-	-
2	Provider initiated testing	-	-	-	-	-
3	OI Treatment	1,028.55	66.86	66.86	-	1,162.28
4	OI Prophylaxis	-	-	-	-	-
5	ART, including nutritional support	325.71	15.24	4.21	4.94	350.09
6	Laboratory testing	15.73	0.74	0.20	-	16.67
7	Home base care	-	-	-	-	-
8	Daycare	-	-	-	-	-
9	Transportation for patient	-	-	-	-	-
3. Orphan and Vulnerable		84.59	-	-	-	84.59

Functions		Financing agent				
		Public	CSMBS	SSS	ROW	Total
children --OVC						
1	Education	-	-	-	-	-
2	Health care support	-	-	-	-	-
3	Family/home support	84.59	-	-	-	84.59
4	Community support	-	-	-	-	-
5	Organization costs	-	-	-	-	-
4. AIDS program costs		201.56	-	-	194.16	395.72
1	Management	63.17	-	-	12.14	75.31
2	Advocacy and communications	-	-	-	-	-
3	Monitoring and Evaluation	-	-	-	-	-
4	Operations Research (research and development)	46.39	-	-	163.54	209.93
5	surveillance (sero-sentinel, behavior surveillance)	18.03	-	-	-	18.03
6	Training	73.98	-	-	18.48	92.46
7	Logistics and supply, including transportation	-	-	-	-	-
8	Supervision of personnel and patient tracking	-	-	-	-	-
9	Drug resistance surveillance	-	-	-	-	-
10	Construction of new health centers	-	-	-	-	-
11	Laboratory and other infrastructure upgrading	-	-	-	-	-
5. Human resources receiving wage benefits (at delivery service)		-	-	-	-	-
1	monetary incentive for doctor	-	-	-	-	-
2	monetary incentive for nurse	-	-	-	-	-
3	Monetary incentive for other staff (i.e. laboratory, team leader etc.)	-	-	-	-	-
GRAND TOTAL, million Baht		2,057.66	84.29	79.80	350.01	2,571.75
GRAND TOTAL, million USD		46.31	1.90	1.80	7.88	57.88

Table A4 NASA 2002, million Baht, current year price (million Baht)

Functions		Financing agent				
		Public	CSMBS	SSS	ROW	Total
1. Prevention-related activities		448.04	1.44	8.46	320.39	778.33
1	Mass media	29.51	-	-	-	29.51
2	Community mobilization	-	-	-	-	-
3	Voluntary counseling and testing (only for general population)	23.47	-	-	-	23.47
4	Youth in school	-	-	-	-	-
5	Youth out of school	-	-	-	-	-
6	Program focused on sex workers and their clients	-	-	-	-	-
7	Program focused on MSM	-	-	-	-	-
8	Harm reduction program for IDUs	59.27	-	-	-	59.27
9	Workplace	-	-	-	-	-
10	Prevention program for people living with HIV	-	-	-	-	-
11	Special populations	-	-	-	-	-
12	Condom social marketing	-	-	-	-	-
13	Public and commercial sector condom provision	54.68	-	-	-	54.68
14	Improving management of STIs	12.56	1.44	8.46	-	22.46
15	Prevention of mother-to-child transmission	184.24	-	-	320.39	504.63
16	Blood safety	84.32	-	-	-	84.32
17	Post-exposure prophylaxis (health care setting, rape)	-	-	-	-	-
18	Safe medical injections	-	-	-	-	-
19	Universal precautions	-	-	-	-	-
2. Treatment and care components		1,918.97	111.23	88.59	4.77	2,123.55
1	Palliative care	-	-	-	-	-
2	Provider initiated testing	-	-	-	-	-
3	OI Treatment	1,238.02	79.17	79.17	-	1,396.36
4	OI Prophylaxis	-	-	-	-	-
5	ART, including nutritional support	543.36	25.58	7.51	4.77	581.23
6	Laboratory testing	137.59	6.48	1.90	-	145.97
7	Home base care	-	-	-	-	-
8	Daycare	-	-	-	-	-
9	Transportation for patient	-	-	-	-	-
3. Orphan and Vulnerable children --OVC		83.94	-	-	-	83.94

Functions		Financing agent				
		Public	CSMBS	SSS	ROW	Total
1	Education	-	-	-	-	-
2	Health care support	-	-	-	-	-
3	Family/home support	83.94	-	-	-	83.94
4	Community support	-	-	-	-	-
5	Organization costs	-	-	-	-	-
4. AIDS program costs		32.36	-	-	156.05	188.41
1	Management	-	-	-	46.48	46.48
2	Advocacy and communications	-	-	-	-	-
3	Monitoring and Evaluation	-	-	-	-	-
4	Operations Research (research and development)	15.49	-	-	109.13	124.63
5	surveillance (sero-sentinel, behavior surveillance)	16.86	-	-	-	16.86
6	Training	-	-	-	0.43	0.43
7	Logistics and supply, including transportation	-	-	-	-	-
8	Supervision of personnel and patient tracking	-	-	-	-	-
9	Drug resistance surveillance	-	-	-	-	-
10	Construction of new health centers	-	-	-	-	-
11	Laboratory and other infrastructure upgrading	-	-	-	-	-
5. Human resources receiving wage benefits (at delivery service)		-	-	-	-	-
1	monetary incentive for doctor	-	-	-	-	-
2	monetary incentive for nurse	-	-	-	-	-
3	Monetary incentive for other staff (i.e. laboratory, team leader etc.)	-	-	-	-	-
GRAND TOTAL, million Baht		2,483.31	112.67	97.04	481.21	3,174.24
GRAND TOTAL, million USD		57.81	2.62	2.26	11.20	73.89

Table A5 NASA 2003, million Baht, current year price (million Baht)

Functions		Financing agent				
		Public	CSMBS	SSS	ROW	Total
1. Prevention-related activities		414.06	1.09	6.37	100.81	522.33
1	Mass media	41.25	-	-	34.97	76.22
2	Community mobilization	-	-	-	-	-
3	Voluntary counseling and testing (only for general population)	38.32	-	-	-	38.32
4	Youth in school	-	-	-	-	-
5	Youth out of school	-	-	-	-	-
6	Program focused on sex workers and their clients	-	-	-	-	-
7	Program focused on MSM	-	-	-	-	-
8	Harm reduction program for IDUs	73.40	-	-	-	73.40
9	Workplace	-	-	-	-	-
10	Prevention program for people living with HIV	-	-	-	-	-
11	Special populations	-	-	-	65.84	65.84
12	Condom social marketing	-	-	-	-	-
13	Public and commercial sector condom provision	27.17	-	-	-	27.17
14	Improving management of STIs	9.46	1.09	6.37	-	16.92
15	Prevention of mother-to-child transmission	140.13	-	-	-	140.13
16	Blood safety	84.32	-	-	-	84.32
17	Post-exposure prophylaxis (health care setting, rape)	-	-	-	-	-
18	Safe medical injections	-	-	-	-	-
19	Universal precautions	-	-	-	-	-
2. Treatment and care components		2,126.35	126.32	97.37	284.10	2,634.15
1	Palliative care	-	-	-	-	-
2	Provider initiated testing	-	-	-	-	-
3	OI Treatment	1,261.63	84.35	84.35	-	1,430.33
4	OI Prophylaxis	-	-	-	-	-
5	ART, including nutritional support	541.88	26.30	8.16	284.10	860.45
6	Laboratory testing	322.84	15.67	4.86	-	343.38
7	Home base care	-	-	-	-	-
8	Daycare	-	-	-	-	-
9	Transportation for patient	-	-	-	-	-
3. Orphan and Vulnerable children - -OVC		80.66	-	-	-	80.66
1	Education	-	-	-	-	-
2	Health care support	-	-	-	-	-

Functions		Financing agent				
		Public	CSMBS	SSS	ROW	Total
3	Family/home support	80.66	-	-	-	80.66
4	Community support	-	-	-	-	-
5	Organization costs	-	-	-	-	-
		-	-	-	-	-
4. AIDS program costs		59.21	-	-	253.04	312.25
1	Management	-	-	-	-	-
2	Advocacy and communications	-	-	-	-	-
3	Monitoring and Evaluation	-	-	-	-	-
4	Operations Research (research and development)	44.01	-	-	253.00	297.01
5	surveillance (sero-sentinel, behavior surveillance)	15.21	-	-	-	15.21
6	Training	-	-	-	0.04	0.04
7	Logistics and supply, including transportation	-	-	-	-	-
8	Supervision of personnel and patient tracking	-	-	-	-	-
9	Drug resistance surveillance	-	-	-	-	-
10	Construction of new health centers	-	-	-	-	-
11	Laboratory and other infrastructure upgrading	-	-	-	-	-
5. Human resources receiving wage benefits (at delivery service)		-	-	-	-	-
1	monetary incentive for doctor	-	-	-	-	-
2	monetary incentive for nurse	-	-	-	-	-
3	Monetary incentive for other staff (i.e. laboratory, team leader etc.)	-	-	-	-	-
	GRAND TOTAL, million Baht	2,680.28	127.41	103.75	637.95	3,549.39
	GRAND TOTAL, million USD	64.61	3.07	2.50	15.38	85.56

Table A6 NASA 2004, million Baht, current year price (million Baht)

Functions		Financing agent				
		Public	CSMBS	SSS	ROW	Total
1. Prevention-related activities		482.79	1.18	6.90	149.55	640.41
1	Mass media	50.90	-	-	-	50.90
2	Community mobilization	-	-	-	-	-
3	Voluntary counseling and testing (only for general population)	29.57	-	-	7.11	36.69
4	Youth in school	-	-	-	8.39	8.39
5	Youth out of school	-	-	-	18.95	18.95
6	Program focused on sex workers and their clients	-	-	-	-	-
7	Program focused on MSM	-	-	-	-	-
8	Harm reduction program for IDUs	130.97	-	-	-	130.97
9	Workplace	-	-	-	-	-
10	Prevention program for people living with HIV	-	-	-	-	-
11	Special populations	-	-	-	103.50	103.50
12	Condom social marketing	-	-	-	-	-
13	Public and commercial sector condom provision	27.17	-	-	-	27.17
14	Improving management of STIs	10.25	1.18	6.90	-	18.32
15	Prevention of mother-to-child transmission	149.59	-	-	11.59	161.19
16	Blood safety	84.32	-	-	-	84.32
17	Post-exposure prophylaxis (health care setting, rape)	-	-	-	-	-
18	Safe medical injections	-	-	-	-	-
19	Universal precautions	-	-	-	-	-
2. Treatment and care components		2,850.99	162.07	111.12	1,059.93	4,184.11
1	Palliative care	-	-	-	-	-
2	Provider initiated testing	-	-	-	-	-
3	OI Treatment	1,329.22	88.20	88.20	-	1,505.62
4	OI Prophylaxis	-	-	-	-	-
5	ART, including nutritional support	934.37	45.35	14.07	1,059.93	2,053.73
6	Laboratory testing	587.40	28.51	8.85	-	624.76
7	Home base care	-	-	-	-	-
8	Daycare	-	-	-	-	-
9	Transportation for patient	-	-	-	-	-
3. Orphan and Vulnerable children --OVC		40.68	-	-	-	40.68
1	Education	-	-	-	-	-

Functions		Financing agent				
		Public	CSMBS	SSS	ROW	Total
2	Health care support	-	-	-	-	-
3	Family/home support	40.68	-	-	-	40.68
4	Community support	-	-	-	-	-
5	Organization costs	-	-	-	-	-
4. AIDS program costs		77.81	-	-	0.31	78.12
1	Management	-	-	-	-	-
2	Advocacy and communications	-	-	-	-	-
3	Monitoring and Evaluation	-	-	-	-	-
4	Operations Research (research and development)	62.56	-	-	0.31	62.88
5	surveillance (sero-sentinel, behavior surveillance)	15.24	-	-	-	15.24
6	Training	-	-	-	-	-
7	Logistics and supply, including transportation	-	-	-	-	-
8	Supervision of personnel and patient tracking	-	-	-	-	-
9	Drug resistance surveillance	-	-	-	-	-
10	Construction of new health centers	-	-	-	-	-
11	Laboratory and other infrastructure upgrading	-	-	-	-	-
5. Human resources receiving wage benefits (at delivery service)		-	-	-	-	-
1	monetary incentive for doctor	-	-	-	-	-
2	monetary incentive for nurse	-	-	-	-	-
3	Monetary incentive for other staff (i.e. laboratory, team leader etc.)	-	-	-	-	-
GRAND TOTAL, million Baht		3,452.26	163.24	118.02	1,209.79	4,943.32
GRAND TOTAL, million USD		85.83	4.06	2.93	30.08	122.90

Table A7 NASA by sources of finances 2000-2004

Year NAA	Million Baht			Million USD			Percentage		
	Public	ROW	Total	Public	ROW	Total	Public	ROW	Total
2000	2,487	137	2,623	62	3	65	94.8%	5.2%	100%
2001	2,222	350	2,572	50	8	58	86.4%	13.6%	100%
2002	2,693	481	3,174	63	11	74	84.8%	15.2%	100%
2003	2,911	638	3,549	70	15	86	82.0%	18.0%	100%
2004	3,734	1,210	4,943	93	30	123	75.5%	24.5%	100%

Table A8 NASA by financing agencies 2000-2004

Financing agencies	Million USD					Percentage				
	2000	2001	2002	2003	2004	2000	2001	2002	2003	2004
Public	57.9	46.3	57.8	64.6	85.8	89%	80%	78%	76%	70%
CSMBS	2.2	1.9	2.6	3.1	4.1	3%	3%	4%	4%	3%
SSS	1.9	1.8	2.3	2.5	2.9	3%	3%	3%	3%	2%
ROW	3.4	7.9	11.2	15.4	30.1	5%	14%	15%	18%	24%
Total	65.4	57.9	73.9	85.6	122.9	100%	100%	100%	100%	100%

Detailed methodology

The primary data collection method for Thailand National Aids Spending Assessment (NASA) 2000-2004 is based on the translation and re-categorization of existing 2-dimensional Thai National Health Account (NAA) 2000-2003 into the 2 matrices of NASA. The first matrix captures the flow between the Financing Sources (Institutions or entities that provide the funds used in the system by financing agent) and Financing Agents (Institution or entities that channel the funds provided by financing sources and use those funds to pay for, or purchase, the activities) In the Thai HIV/Aids context, the entities for financing sources and financing agents are roughly equal. This is because financing source usually dictates the use of the resources they provide and financing agent only acts accordingly even though the decisions are made mutually. The second matrix captures the flow between Financing Agents and Functions.

The data for the year 2000-2003 from Thai NAA were verified, re-categorized and translate into the new categories. The data for 2004 were tracked using the same principle as NAA. First, the reliable data on actual expenditure available from trusted source are verified and filled into the matrices directly. Secondly, where data cannot be retrieved directly, imputation based on PQ approach and several assumptions are used.

Mass Media

Government spending on this program was compiled directly from financial database which recorded all financial transactions disbursed from Ministry of Finance by all concerned line ministries. Although NGOs are also actively involved in mass media, they receive financial support from either government or international organizations. Thus, NASA did not account for NGOs spending in order to avoid double counting.

Voluntary Counseling and Testing

Government spending on VCT incurred in two forms, the general administration and the counselling services to individuals who opted for HIV testing.

The general administrative cost is directly retrieved from government financial database.

Cost of counselling services to individuals who opted for HIV testing are calculated as follows

Counselling cost for HIV negative=number of persons who tested for HIV and whose HIV status were negative*41 baht

Counselling cost for HIV positive=number of persons who tested for HIV and whose test were positive *81 baht

Testing cost for HIV positive=number of persons who tested for HIV and whose test were positive *241 baht

Data sources

Unit cost of VCT was quoted from a study on "Cost-Effectiveness on PMTCT in North-Eastern and upper North, Thailand 2545 (2002)". This study indicates that cost of counselling were 41 baht per case for HIV negative and 81 baht per case for HIV positive; and, cost of HIV testing were 87 baht per case for HIV negative and 241 baht per case for HIV positive.

Note that VCT for PMTCT and VCT for ART program were estimated as an integral component of that program.

Rest of the world spending on VCT are directly retrieved from Thailand International Development Cooperation Agency. (TICA)

Youth in School and Youth out of school

Public expenditure on youth in school is incorporated into mass media.

ROW expenditure on youth in school are retrieved directly from TICA Project through Ministry of Education, MOPH and The Planned Parenthood Association of Thailand under the Patronage of H.R.H. the Princess Mother (PPAT)

Programs focused on sex workers and their clients

Expenditure on this function is incorporated in condom social marketing and public & commercial sector condom provision.

Harm reduction programs for IDUs

Government spending on prevention and control of drug abuse was compiled directly from government financial database.

- Rehabilitation Program for Drug Addict by Office of the Permanent Secretary for Public Health, Department of Medical Service, Department of Mental Health; Ministry of Public Health
- Prevention Program by Department of Medical Science, Department of Mental Health; Ministry of Public Health
- Rehabilitation Program for Drug Addict by Supreme Command Headquarters, Royal Thai Army, Royal Thai Navy and Royal Thai Air Force; Ministry of Defence
- Rehabilitation Program for Drug Addict by Department of Probation and The Department of Juvenile Observation and Protection; Ministry of Justice

However, it was not possible to disaggregate spending by activities. Therefore the government spending on IDU related to HIV/AIDS was computed by applying the proportion of injecting drug users (10%) to other modes of drug abusers such as methamphetamine, marijuana and etc.

Special populations

ROW expenditures on Special population are directly retrieved from TICA Project through MOPH (foreign migrant workers in Fisheries and program focussing on reproductive health in Narathiwat, Satun, and Yala provinces), PPAT and Chiang Mai University (Aids program in northern Thailand) and GF project on seafarer through Rak Thai Foundation.

Condom social marketing and Public and commercial sector condom provision

Government expenditure on condom was compiled directly from government financial database. We assumed the expenditure on condom is solely for the purpose of HIV/Aids prevention regardless of their true objective (birth control or prevention of HIV/AIDS, STDs transmission)

Improving management of STIs

PQ approach is employed to impute expenditure on STIs. Information on both unit costs of STIs treatment and number of STIs patients are derived from secondary data.

The cost of STI treatment was derived from treatment based on standard regimen guidelines, both laboratory investigations and medication. This study referred to Chukiatsiri et al (2003) published paper on "the Cost of Treatment in Patients with STI". This study then imputes average unit cost of each STI per patient by applying cost-charge ratio—by STI diseases or by group of diseases observed among STI patients. Total number of STI cases referred to the 2004 annual report by Bureau of AIDS, TB and STI (2004)

The total national expenditure on STI treatment was imputed from the product of relevant unit cost (Routine service cost and ancillary cost) of each category of STI by types of medical premises and the number of STI patients by types of medical premises.

This expenditure is then assigned to different financing agent using several assumptions. It is assumed that public source financed 67 percent of total expenditure (MOPH and other ministries-56.83%, CSMBS-6.42%, SSS-36.65%) and household consisted of 37 percent.

Prevention of mother-to-child transmission

Government expenditure on PMTCT is imputed using PQ approach. Unit cost for counselling (pre and post test for pregnant women and the newborn) and cost of lab test, cost of AZT for mother and newborn, cost of breast milk substitution referred to Teerawattananon et al (2004).

Cost of Counseling -- The cost of counseling alone was 41 baht per adult case of HIV negative, 81 baht per adult case of HIV positive, and 29 baht per baby.

Cost of HIV Testing -- The cost of HIV laboratory testing was 87 baht per adult case of HIV negative, 241 baht per adult case of HIV positive, 81 baht per baby case of HIV negative and 247 baht per baby case of HIV positive.

Cost in administering AZT—the cost of administering AZT was 2,749 baht for pregnant women who tested positive and 1,449 baht for babies who tested positive.

Cost of breast milk substitution-- This was 7,507 baht per baby-year for a sole substitution with some contingency. The total cost of breast milk substitution in 2004 is retrieved directly from Department of Health.

Number of pregnant women enrolled in AZT during 2000-2003 was the product of total pregnancies, HIV prevalence and PMTCT coverage percentage. The figure for 2004 is retrieved directly from Department of Health.

Number of HIV positive infants during 2000-2003 was the product of babies born by enrolled pregnant women and vertical infection rate of 10.49%. The figure for 2004 is retrieved directly from Department of Health; MOPH.

The nature of the PMTCT program allows us to assume that that all spending was shouldered by MOPH; Department of Health; MOPH.

ROW expenditure is retrieved directly from TICA project on HIV/AIDS prevention and care among children and HIV prevention for HIV-Negative Pregnant Women in MCH Hospital by Department of health; MOPH.

Blood safety

National Blood Bank of the Thai Red Cross is the national program manager responsible to ensure safe blood supply throughout the country. According to the Thai Red Cross national blood bank report, the annual requirement is 1.2 million of whole blood units.

The Government spending on safe blood supply was estimated from the total number of blood units used each year * cost of reagent for blood screening for HIV (excluding Hepatitis and others tests)

OI Treatment

Unit cost

The study of Thai NAA 2000-2003 derived unit cost by reviewing all available medical records with confirmed and suspected adult AIDS/ARC patients during fiscal year 2003. This database consisted of charges on drug, laboratory and radiology. Then, this unit cost was weighted by number of OI cases. Weighted unit cost of each OI treatment was adjusted by proportion of OI type (Top 5 OIs include TB, PCP, Crypto, candidiasis and pneumonia) which yields average of any OI treatment cost per visit. Total national OI treatment cost is allocated to OP and IP cost by weighted unit cost which was 768 baht for OP and 321 baht for IP (OP 71% and IP 29% of total cost 1,089 baht per visit)

Healthcare Utilization rate

A study by Teerawattananon et al (2004) indicates that AIDS patient has a probability to use institution care 7.25 visits per person per year, of which 4.25 outpatient visits and 3 inpatient admissions.

Meanwhile, result of Health and Welfare Survey (HWS), conducted by National Statistical Office in 2001 and 2003 showed that general Thai population reported an average of 3.94 to 4.72 outpatient visits per person per year in 2001 and 2003 respectively.

It is assumed the outpatient utilization rate in 2001 to impute OI expenditure among PHA for 2000 and 2001, and that of 2003 to impute OI expenditure for PHA for 2002, 2003 and 2004.

Since, it is assumed that frequency of illness among people living with AIDS should be at least comparable to or higher than that of general Thai population. And that Universal Coverage scheme facilitated a higher utilization rate. Meanwhile, this study assumed 3 admissions per person per year for PHA due to OI throughout period 2000-2004.

Thus, OI treatment cost (1,089 baht per visit either OP or IP) multiplied with the utilization rate 6.94 visits of OP and IP (3.94 + 3) for 2001, and 7.72 visits for OP and IP (4.72 + 3) for 2003. These result in cost of OI treatment per person per year during these periods. Furthermore, medical care consumer price index is applied to adjust OI cost accordingly.

Number of patient requiring OI treatment

Since, there is no report on total number of people living with HIV/AIDS who suffered from opportunistic infections, as well as lack of OI incidence among AIDS patients who received ART. The latter is due to early experience of national program on universal ART.

This study utilizes reported number of new AIDS patients who required OI treatment as indicated in the Weekly Epidemiology Surveillance Report (WESR), minus the reported number of AIDS death in each year. Due to the fact that not all patients fell sick or died at a beginning of each year, some may seek institutional care at the end of the year. This would affect number of episode of illness experienced by these patients. Hence, this study uses half of the total new AIDS cases found each year as average number of AIDS patients who required OI treatment in that particular year

Total expenditure on OI treatment

Expenditure on opportunistic infections is imputed by multiplying average expenditure on OI per person per year (unit cost * episode of illness) by the number of OI cases. The product of PQ was then allocated to its respective financing agencies

However, there are two important underlying assumptions

a) That all AIDS patients required institutional care, either as outpatient or inpatient, whenever they fell sick. This assumption is plausible, as financial barriers is not a problem in access to care. Prior to 2002, there was Low Income Scheme, whereby the poor could access free public services, and after the inception of Universal Coverage Scheme in 2002, all Thai citizens had free access to all types of care either OP or IP.

b) Though, in 2003, there were approximately one-third of AIDS patients received ART. Due to lack of OI incidence and profile among those who received ART, this study adopts an assumption that PHA under ART program would experience similar pattern of OI incidence.

ART, including nutritional support and Laboratory testing

Provision of ART consists of 5 main activities namely Procurement of ARV drugs, CD4 count monitoring, viral load test, drug resistance test and voluntary counselling and testing. (Only the procurement of ARV drug is counted in ART category. The rest are counted as laboratory testing)

1 .Cost of ARV drugs

Cost of ARV drugs is directly retrieved from existing record. Government expenditure on ARV drug is compiled annually using technique that followed guideline of World Bank and International Monetary Fund on Government Financial Statistics (GFS) This database recorded every transaction of government spending—whenever actual disbursement was occurred. Result from this exercise was cross checked and verified its accuracy with information gathered directly from the Bureau of AIDS, TB, and Malaria, Ministry of Public Health- the national program manager on HIV/AIDS.

The Global Fund supports are the major source of external assistance on ARV support. Though, anecdotal evidence suggests that some organizations in Thailand receive contributions either in cash or in kind such as unused ARV to treat PHA. It requires tremendous resource and time to gather such information and results are not very valid. Thus, this study focuses on contribution from the GF only. To which, direct method is employed to estimate external assistance on ART, by retrieving information from the office of the Primary Recipient (PR) who has financial accountability to the Global Fund resources. In this case, the MOPH served as the PR. Information retrieved from the PR was verified with information from the Global Fund website.

2.CD4 count monitoring

Level of CD4 cells less than 200 cells/mm³ is used as cut-off point for the enrolment into ART by PHA. PHA on the wait list (having CD₄>200) are advised to have CD4 test every 3 months. As government budget for CD4 test is limited, members in the wait-list are required to shoulder their own CD4 test. Once enrolled in the ART program, patients are entitled to free CD4 monitoring as well as ART subsidized by the Government. Though, some public hospitals may request some patients to make voluntary contribution—if one could afford—in order that the hospitals could enroll more patients to the program. This study does not take into account such practice of voluntary contribution by households.

The estimation of national spending for CD4 count applied indirect method as follows:

Total spending on CD4 test = Household spending for voluntary CD4 test + Government subsidy for CD4 test

Household spending on CD4 test = Charges per test * Number of reported OI patients in each year * Proportion of OI patients who were prescribed for CD4 test

Government subsidy on CD4 test = Cost per test * Number of patients received ARV financed by public.

Cost per test = Price of reagent (246.10 baht per test) + Labor cost (14.95 baht per specimen) + Overhead cost (1.78 baht per test) + Indirect cost (13.56 baht per test) = 276.37 baht per test.

Source of data

Price of CD4 laboratory reagent was provided by key informants in the national AIDS program who are responsible for the government bulk purchase and monitor price of reagent on a routine basis.

Other laboratory cost derived from a separate costing exercise at Maharaj hospital Nakorn Ratchasima (a regional hospital with more than 800 beds in Northeast region) in 2002.

3. Viral Load Test

When AIDS patients commenced ART, such patient must be monitored for number of copies of HIV virus, at least once a year.

Total cost of viral load test = Cost per test * number of patients received ARV drugs in each year

Cost per test = Price of reagent (2,200 baht per test) + labor cost (14.95 baht per specimen) + overhead cost (1.78 baht per test) + indirect cost (13.56 baht per test) = 2,230 baht per test

Source of data

Price of viral load reagent was provided by key informants in the national AIDS program who are responsible for the government bulk purchase and monitor price of reagent on a routine basis.

Other laboratory cost derived from a separate costing exercise at Maharaj hospital Nakorn Ratchasima (a regional hospital with more than 800 beds in Northeast region) in 2002.

4. Drug Resistant Test

When AIDS patients commenced ART, such a patient must be monitored their immune response for each ARV drugs combining in their triple drug regimen. Though, it was recommended for patients who received HAART to undertake a test for every 6 months. Due to high cost of testing, it was likely that a test would be administered only once a year. As there was no information available regarding number of AIDS patients received ARV beyond public program. Therefore, NAA computes only government spending on drug resistant test, as following.

Total cost of drug resistant test = Cost per test * number of patients received ARV drugs in each year

Cost per test = Price of reagent (8,800 baht per test) + labor cost (14.95 baht per specimen) + overhead cost (1.78 baht per test) + indirect cost (13.56 baht per test) = 8,830 baht per test

Source of data:

Price of drug resistant reagent was provided by key informants in the national AIDS program who are responsible for the government bulk purchase and monitor price of reagent on a routine basis.

Other laboratory cost derived from a separate costing exercise at Maharaj hospital Nakorn Ratchasima (a regional hospital with more than 800 beds in Northeast region) in 2002.

5. Voluntary counseling and testing

Expenditure on VCT under ART is counted separately (not included in general VCT)

Unit cost of VCT was referred to a study on "Cost-Effectiveness on PMTCT in North-Eastern and upper North, Thailand 2545BE"

Counseling for HIV positive = number of persons who were tested for HIV and found positive * 81 baht per session

Testing for HIV positive = number of persons who tested for HIV and found positive * 241 baht per test

Total expenditure on ART

Total expenditure on ART is total sum of expenditure on five activities as described above. Expenditure was allocated to its respective Financing Agents based on several assumptions and existing information. (MOPH and other ministries-56.83%, CSMBS-6.42%, SSS-36.65%)

Family/home support

Government expenditure on Family/Home support is directly retrieved from Aids treatment program by Department of Social Development and Welfare; Ministry of Social Development and Human Security and Department of Skill Development; Ministry of Labour

Operations Research (research and development)

Expenditures on Operational research are directly retrieved from several sources namely

- Research Program by Department of Medical Science and Department of Disease Control; Ministry of Public Health
- Vaccine Research Program by Department of Medical Science; Ministry of Public Health
- Research Program by Bangkok Metropolitan Administration; Ministry of Interior
- Research Program by Office of the Higher Education Commission; Ministry of Education
- TICA Research program on Improved female condom prototype by Khon Kaen University

Surveillance (Sero-sentinel, behaviour surveillance)

Government expenditure on each type of surveillance was computed as follows:

Sero-sentinel surveillance

Total spending on sero-sentinel surveillance = number of sample covered in surveillance
* cost per test

Cost per test = cost of reagent 40 baht per test + labour cost 14.95 baht per test +
overhead cost 1.78 + indirect cost 13.56 = 70.27

Source of data

The forth generation ELISA =30-50 bath/test; we apply a median cost of 40 baht/test. Source of information from the Laboratory department of Maharaj Nakorn Ratchasima hospital in 2002,

Sex Behavioral Surveillance

Government subsidized this activity at flat rate of 30,000 baht per province. Therefore, total spending was equal to 30,000 baht*76 provinces per annum. Our field visits indicate that this amount of budget allocated is adequate for the fieldwork.

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