F. Levels and determinants of expenditure on HIV/AIDS in Thailand

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Section One: Introduction

Thailand's National AIDS Control Programme (NACP) began in 1987. The government has been actively involved in addressing AIDS prevention and control throughout the 1990s. In 1992, the government announced to the Parliament its planned policies for addressing AIDS, with an emphasis on prevention. However, despite an aggressive series of moves to stem transmission, the HIV/AIDS epidemic continues to grow. As of January 31, 1996, there were an estimated 33,410 persons with AIDS, about half of them living in the northern provinces (OPS 1996). About 750,000 persons were infected with HIV.

As Thailand enters the second decade of the AIDS pandemic, the NACP has evolved in complex and interrelated ways in response to the changing epidemic and lessons learned about prevention and control. The Ministry of Public Health has formulated a seven-part policy concerning AIDS prevention and control with the following elements:

- establishing the importance of the AIDS problem
- coordinating work
- preventing the spread of AIDS
- determining attitudes toward AIDS and HIV-infected patients
- providing health services relating to AIDS
- promoting AIDS research, and
- ensuring the rights of HIV-infected employees.

This report focuses on the costs of AIDS prevention and treatment. In the second section we present an analysis of the NACP budget by program and ministry. In the third section we estimate the costs of caring for persons with AIDS. In the fourth and final section, we analyse the combined national costs of AIDS prevention and control by source of funding and compare it with expenditures on other health programs.

Section Two: Expenditures of the National AIDS Control Programme

The National AIDS Prevention and Control Plan (1995–96) developed a six-component operational plan to deal with HIV/AIDS (NAPCP 1994). Table 1 shows total NAPCP expenditures for fiscal year 1995, by programme and participating ministry, in millions of baht.[2]

Table 1. National AIDS Prevention and Control Plan, fiscal 1995 budget (millions of baht)

Organisation	Prevention	Health promotion & medical services	Counseling	PWA & legal measures	Research & evaluation	Management	Total	Per cent
Office of the Prime Minister	54.8	0.0	0.0	0.0	0.0	0.0	54.8	4.4
Ministry of Defence	7.4	13.1	1.4	0.2	1.3	0.5	23.9	1.8
Ministry of Agriculture & Cooperatives	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.02
Ministry of Interior	8.2	18.9	1.0	0.0	0.5	49.4	78.0	6.2
Ministry of Public Health	44.0	591.3	13.9	23.5	3.7	268.9	945.4	75.1
Ministry of Education	13.8	0.0	0.0	0.0	0.0	0.0	13.8	1.1
Ministry of University Affairs	10.0	95.8	3.7	0.0	10.5	0.5	120.5	9.5
Ministry of Labour	6.1	0.0	0.0	15.4	0.2	0.0	21.7	1.7
Total	144.5	719.1	20.0	39.0	16.3	319.3	1,258.2	100.0
Per cent	11.4	57.2	1.6	3.1	1.3	25.4	100.0	

Note: Data may not sum to totals due to rounding.
Source: NACPC 1994.

The AIDS prevention and control expenditures for fiscal year 1995 were approved for approximately 1,258 million baht (US$50.3 million). Health promotion and medical services accounted for more than half of the budget, with virtually all financing coming from the Ministry of Public Health (MOPH). This item does not include treatment of classic sexually transmitted diseases (STDs), which is financed from a separate budget. Overall, the MOPH represented three-quarters of all budget allocations for AIDS. This designation reflects a policy decision in 1994 to fund most government activities related to AIDS prevention and control through MOPH.

In 1992, the government began to fund nongovernmental organisations (NGOs) with a budget of 11.5 million baht, administered through the Department of Communicable Disease Control of the Ministry of Public Health. The budget has fluctuated: 15 million baht in 1993; 10 million baht in

1994; and 75 million baht in 1995. Table 1 includes government funding for NGOs but not private funding for NGOs.

In addition to the national budget, since 1988, 19 international organisations and foreign governments have provided additional support. In 1990, foreign assistance represented 38 per cent of the AIDS budget. However, the Thai government's commitment to AIDS has continued to grow. By 1994 Thai government funding represented 84 per cent of the total AIDS budget.

Section Three: AIDS care and treatment costs

Sporadically, medical personnel have been afraid of caring for persons with AIDS. Concern about modes of transmission, possible infection, and social stigma contributed to this fear. In response, the Ministry of Public Health assigned the Bamrasnaradura Hospital (infectious disease hospital, Department of CDC) the responsibility for caring for AIDS cases. By 1988, all provincial hospitals under the Ministry of Public Health, as well as many community hospitals, were supposed to be equipped to care for AIDS patients. In the northern provinces, where hospitals treat many AIDS cases, community- and family-based health care is now an extension of the primary health care system. Day care wards are required to be linked with community-based care facilities. All of these activities have required governmental funding. In addition, the cost of medical care, including antiretroviral therapy, opportunistic infection therapy, and universal precautions, has increased severalfold since 1993.

3.1 Early estimates of AIDS treatment costs

Early in the epidemic (1988–90) a number of limited research studies were done that primarily focused on the direct costs of caring for people with AIDS (PWA) in hospital settings (Cameron and Schopper 1990; Sittitrai 1994). Because of the limited availability of clinical data, the relatively few cases of AIDS being treated, and the mixed reaction by the government to such investigations, the studies' results were of limited use to policymakers. However, they were helpful in understanding that the cost of caring for persons with AIDS was high for both inpatient and outpatient care. PWA needed expensive drugs, and they presented for medical care at a much higher rate than for the general population. In addition, PWA had few resources to cover costs. Direct costs for a PWA were estimated to represent 30–50 per cent of his or her annual income (Kongsin et al 1992).

At the Bamrasnaradura Hospital, a Bangkok-based hospital designated to care for PWA, AIDS-related care costs rose from 46 million baht in 1994 to more than 368 million baht in 1997 (Vilaiwan 1995). More broadly, direct medical costs for a PWA were estimated at 25 times per capita spending on health by the government (Kongsin 1995). Projections of direct and indirect costs for the late 1990s and beyond were in the billions of dollars (Viravaidya, Obremskey, and Myers 1993).

3.2 Care model spreadsheet

The spreadsheet is a simple multiplication tool to estimate total national costs of caring for persons with AIDS. It is divided into eight major categories of care. The number of PWA is distributed by type of care delivery. Subsequently, the spreadsheet multiplies this distribution by the unit costs of care to estimate total cost by type of care. The spreadsheet sums the total costs for each type and level. Initial estimates are for 1994.

As shown in table 2, care has been segmented into major categories offered by public and private providers in outpatient and inpatient locations. Home-based care is assumed to be an outreach of health centers. Hospitals have been subdivided into public and private, inpatient and outpatient types. As antiretroviral (ARV) drugs and treatment for opportunistic infections (OIs) are expensive and of particular interest to policymakers, they have been separately examined. Whether drugs are delivered in an outpatient or inpatient setting has little effect on costs.

Table 2. Per cent of people with AIDS receiving different types of treatment, 1994

Type of care	Public	Private	Total
Hospital, of which:			
Inpatient	36.6	1.6	38.2
Outpatient	5.6	0.3	5.9
ARV therapy	4.4	na	4.4
OIs	33.9	na	33.9
Private clinics	na	1.6	1.6
Pharmacies	na	6.2	6.2
Traditional healers	na	5.8	5.8
Home care	na	3.9	3.9
Total (%)	80.5	19.4	99.9

na Not applicable.

Note: The type of care sought by 2 per cent of AIDS patients could not be estimated.

Source: Authors' calculations based on official data and consultation with experts.

The first column of table 3 shows the distribution of the 39,803 cases of AIDS estimated for 1994 (NESDB 1994). Of the total cases, 29,309 were reported through the various data collection systems in Thailand. For the remaining one-quarter of the cases, there is no information about patterns of care sought and delivered. The assumption was made that the omitted 10,494 people with AIDS sought and received care in a way similar to those for whom data is available. Persons with AIDS typically seek care from multiple sources during the course of their disease. More research is needed to better understand both the demand for services, where people with AIDS seek care, and related costs.

The second column of table 3 presents the estimated unit costs for each type of service, in US dollars, converted at the rate of 25 baht per US dollar. As expected, private inpatient costs are significantly greater (more than 12 times) than inpatient costs at public hospitals. Private outpatient costs are almost five times more expensive than services at public outpatient departments. It is difficult to analyze these differences, as there is a lack of data concerning such factors as the types of care, quality of care, volumes of care, length of stay, and frequency of stays. It is interesting to note that home-based care is similar in size to the cost of inpatient care in public hospitals and a course of treatments for opportunistic infections. Costs represent total annualised capital and operating costs to treat a PWA for one year. It is assumed that a PWA receives treatment for one year before dying.

Table 3. Costs of services for AIDS treatment and care, 1994

Type of care	Number of PWA	Unit cost (US$)	National cost (US$ million)
Hospital, of which:			
Public inpatient	14,557	808	11.76
Public outpatient	2,231	163	0.36
ARV therapy	1,765	1,154	2.04
OIs	13,513	809	10.93
Private inpatient	636	10,052	6.39
Private outpatient	105	760	0.08
Private clinics	636	238	0.15
Pharmacies	2,482	271	0.67
Traditional healers	2,308	137	0.32
Home care	1,568	775	1.22
Total	39,801		33.92

Source: PWA by type of care: Kunanusont 1995; NESDB 1994; Vilaiwan 1995; authors' calculations. Unit costs: Prescott, Perriens, and Hill 1996; Kongsin et al 1992; Kongsin 1995; authors' estimate based on data from a private hospital.

Since 1992, the MOPH has allocated a significant amount of the budget each year to antiretroviral therapy (ART) drug supplies (Kunanusont 1995; Kunanusont et al 1996). The budget increased from 35 million baht in 1992 to approximately 295 million baht in 1995. ART is supplied for low-income patients, but only monotherapy is covered. About 80 per cent of ART is zidovudine, or AZT. Didanosine (ddI) and zalcitabine (ddC) together comprise about 20 per cent of ART. Decisions on ART regimens are being institutionalized in guidelines that are reviewed two to three times a year.

The price of AZT has decreased over time from 45 baht (then US$1.80) per 100 mg capsule to a range of 13 to 22 baht (US$0.52 to US$0.88). In 1996

the MOPH purchased AZT for 9.50 baht per 100 mg capsule. Lower prices were attributed to competitive bidding. Prices for ddI and ddC have not decreased significantly as there is no competition: one supplier controls the market for both drugs.

Since AZT represents the vast majority of ARV drug use, the decreasing price of AZT has greatly leveraged the MOPH's budget. In 1995, the total AZT budget was about 100 million baht out of a total budget of 300 million baht. In the future, drug budgets will be squeezed as about 25 per cent of reported AIDS and symptomatic HIV patients have requested ART.

The MOPH asked the World Health Organisation (WHO) to perform an external review on ARV use to help determine policy for developing countries in Asia and the Pacific. The review included the WHO, the World Bank, and the Thai MOPH. When evaluated using quality-adjusted life years (QALYs), preliminary findings indicated that costs (budgets) were greater than benefits. The QALY is calculated as the years of survival gained weighted by the functional ability of PWA (95 per cent for symptomatic HIVs and 70 per cent for AIDS). It was based on users of ARV therapy from 1993 through 1995. The study also indicated that zidovudine therapy was cost-effective in combatting vertical transmission. However, because of analytical issues related to data limitations and incompleteness, compliance, and programme coverage, more research is needed.

The last column in table 3 multiplies the unit costs in the second column by the PWA to arrive at an estimate of national costs. In 1994, about US$34 million, or 848.24 million baht, were expended for care from public and private sources. Since little, if any, international aid is used for care it can be assumed that this represents the vast majority of care costs.

The majority of costs – 68 per cent – comprise two categories: inpatient care in public hospitals and the provision of antiretroviral drugs (Kunanusont and Sirisritrirak 1994). In fact, ARV drugs alone represent 36 per cent of total care costs. In some cases all costs are assumed to be borne by one source, but in most cases, some of the cost is paid by both public and private sources. In 1994, it was estimated that the public sector provided 56 per cent of the funds, and the remaining 44 per cent come from private sources, such as fee-for-service and private insurance (authors' calculations).

Table 4 presents a summary of AIDS costs by the use and source of funding. An internal MOPH study in October 1996 indicated that expenditures were between 97 and 100 per cent of the budgets. Therefore, it can be assumed that the budgets are a reasonable surrogate for expenditures.

In 1994, US$95.5 million (2,388 million baht) was spent on AIDS prevention and treatment, by public and private sources. Of this amount, 88 per cent was provided domestically and 12 per cent came from official aid (e.g., bilateral). As the government of Thailand provides the vast majority of resources, the government has significant power to direct how those funds are

invested. This situation differs from many other countries, where official aid dominates funding of HIV/AIDS-related activities.

If official aid is added to domestic expenditure, about 1,540 million baht (US$61.6 million), or 65 per cent of all spending, was provided for prevention. About one-third of expenditure was for treatment and care. The 1994 national AIDS prevention and control budget (US$50.3 million) represented 3.2 per cent of the total public health budget of US$1,572 million.

Table 4. AIDS expenditure by source of funding, 1994 (millions of US dollars)

Item	Total (US$ million)	Per cent
Domestic public and private expenditure, of which[a]	84.3	88
AIDS prevention	50.3	53
AIDS treatment and care	33.9	35
Official aid	11.3	12
Total AIDS-related expenditure	95.5	100

a. Excludes private expenditure on condoms.
Source: NACPC 1994; authors' calculations.

Assuming a 1994 population of 59.7 million, US$1.60 was spent per capita for AIDS prevention and care (World Bank 1993). The combined Thai and official aid budgets provided US$1.03 per capita for prevention. The cost of care for those *receiving care* was US$852 per person, or 36 per cent of per capita GNP (US$2,400). Thus, every case of AIDS prevented saves the government at least US$852 during the last year of a PWA's life. A significant amount could be cost-effectively spent on prevention, assuming a high efficacy of interventions. However, serious questions remain about the effectiveness of prevention interventions. Also, care costs represent one year of AIDS care. They do not include treatment of AIDS-related diseases for HIV-infected persons before they are clinically diagnosed with AIDS, which would increase the total care costs.

Combining total MOPH actual expenditures on AIDS with those for other departments resulted in total AIDS budgets of US$43.0 million (1,074 million baht) in 1994 and US$51.0 million (1,258 million baht) in 1995 – a 20.5 per cent increase. This increase is growing faster than the overall national budget of the government of Thailand, which grew from US$25.0 billion to US$28.6 billion, or a 14 per cent rise over that year.

Notes

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2 Fiscal year 1995 is the first year for which the budget was broken down by programme. The budget for 1994 (the year analysed in the rest of this paper) was for 1,142.5 million baht, of which 1,100.2 million baht were for the MOPH. The exchange rate was 25 baht = US$1.00.

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