Funding priorities for the HIV/AIDS crisis in Thailand

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Introduction

The recent economic crisis in Thailand was triggered by a currency devaluation. Since July 1997, the crisis has placed severe constraints on public financing, including public health and HIV/AIDS programmes (Table 1). The growth of Thailand's gross domestic product (GDP) in 1998 is estimated at minus 5.5%, with inflation of 10.5%. As a result, the government budget was scaled down 18.5% from the 982 billion baht that was approved in the 1998 Budget Bill to 800 billion baht.[1] The Ministry of Public Health budget was cut from 70.145 billion baht to 59.92 billion, a 14.58% reduction from the amount in the Budget Bill (Table 2). The education and health ministries had smaller cuts than others, resulting in higher total budget shares of 18.6% and 7.5% respectively. The five ministries facing the highest cuts were Science, Technology and Environment (34.0%), Transport (33.6%), Industry (25.7%), Interior (25.7%) and Defence (23.0%). A Ministry of Finance revenue assessment found serious cash flow problems. The Budget Bureau increased the budget allocation to five allotments to allow for cash deficits.

This paper introduces the conceptual framework of interrelated consequences of the economic crisis on HIV/AIDS prevention and control. On the basis of document research and in-depth interviews with officials at national and provincial levels, we explain how the Government of Thailand has dealt with the AIDS epidemic during the period of economic hardship. The paper describes how programme managers at national and provincial levels have responded to budget cuts and discusses the impact the cuts may have on the effectiveness of programmes. The state of government finance and agreements with the International Monetary Fund have led to many policy adjustments and budget amendments.

(1) In December 1997, 45 baht were equivalent to US$ 1.

Table 1: Key economic indicators

Indicators	1996p	1997e	1998e	1999e	2000e	2001e
GDP growth	5.5	– 0.4	– 5.5	1.8	3.4	3.7
GDP/capita (baht)	76 650	79 274	82 941	90 340	98 654	106 550
US dollar[1]	3 027	2 525	1 843	2 258	2 504	2 697
CPI (%)	5.9	5.6	10.5	6.0	5.0	4.0

Source: National Economic and Social Development Board, March 1998

Table 2: The 1998 financial year budget revision in response to the economic crisis (182 billion baht reduction)

Ministry	1998 Budget Bill approval	% total	Budget revision	% total	Adjustment	% adjustment
Central Fund*	82 051 605 400	8.36	76 589 967 747	9.57	– 5 461 637 653	– 6.66
Prime Minister's Office*	7 993 717 000	0.81	6 588 348 300	0.82	– 1 405 368 700	– 17.58
Defence	105 238 348 000	10.72	80 998 594 000	10.13	– 24 239 754 000	– 23.03
Finance*	44 797 897 900	4.56	42 752 981 000	5.34	– 2 044 916 900	– 4.56
Foreign Affairs*	4 131 846 000	0.42	3 503 160 300	0.44	– 628 685 700	– 15.22
Agriculture	80 864 696 300	8.23	62 580 531 400	7.82	– 18 284 164 900	– 22.61
Communication	102 108 099 500	10.40	67 786 410 000	8.47	– 34 321 689 500	– 33.61
Commerce*	4 364 583 300	0.44	3 746 802 600	0.47	– 617 780 700	– 14.15
Interior	178 540 267 700	18.18	132 710 229 353	16.59	– 45 830 038 347	– 25.67
Labour & Social Welfare*	11 155 173 000	1.14	9 437 204 500	1.18	– 1 717 968 500	– 15.4
Justice*	5 962 532 400	0.61	5 269 090 400	0.66	– 693 442 000	– 11.63
Science & Technology	16 595 700 900	1.69	10 945 590 300	1.37	– 5 650 110 600	– 34.05
Education*	166 308 911 800	16.94	148 577 152 500	18.57	– 17 731 759 300	– 10.66
Public Health*	70 145 500 000	7.14	59 920 895 000	7.49	– 10 224 605 000	– 14.58
Industry	5 461 664 200	0.56	4 057 343 000	0.51	– 1 404 321 200	– 25.71
University Affairs*	39 337 350 800	4.01	32 900 884 800	4.11	– 6 436 466 000	– 16.36
Other organizations*	5 035 514 700	0.51	4 686 293 600	0.59	– 349 221 100	– 6.93
State enterprises*	29 660 591 100	3.02	26 932 521 200	3.37	– 2 728 069 900	– 9.2
Revolving fund*	22 246 000 000	2.26	20 016 000 000	2.50	– 2 230 000 000	– 10.02
Total	982 000 000 000	100	800 000 000 000	100	– 182 000 000 000	– 18.53

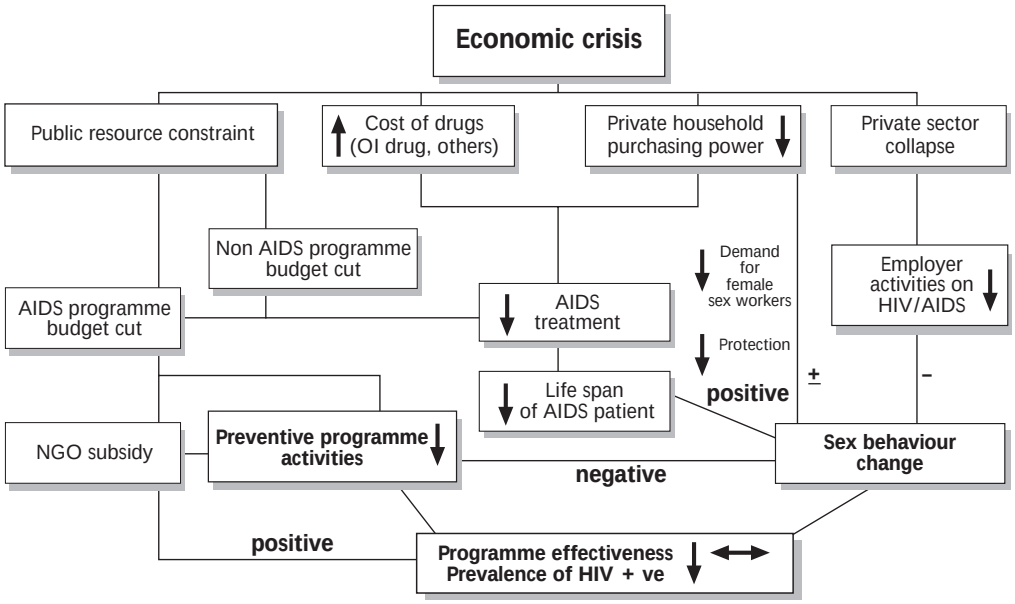
*** Ministries whose budget cuts were less than the national average**

Source: Budget Bureau Office

Note: The 1996 and 1997 budgets were 843.2 and 984 billion baht respectively

Conceptual framework

Conceptual framework



The conceptual framework shows several interrelated consequences of the economic crisis. As a result of public resource constraints, the AIDS programme budget for preventive activities and medical services was hampered. The reduction of funds for non-AIDS programmes, which provide quite a substantial source of financing for AIDS services, further limits AIDS programme activities (e.g. supplies for universal precautions, allowances for field work). Increase in the cost of providing services (especially imported drugs, whether finished products or raw materials) and medical supplies due to an unfavourable foreign exchange rate further retards programme activities.

Limited access to drugs and treatment has shortened the life span of persons with AIDS. The reduction of disposable income at household level, due to salary cuts or job losses, may reduce the risk of infection by reducing demand for commercial sex services. At the same time, it may lead to more prostitution among primary or secondary school leavers who cannot find jobs and among women who are unemployed or economically distressed. Having a close relative or neighbour die of AIDS may be a strong influence for significant change in sexual behaviour. Preventive activities by the government or by employers may or may not change behaviour. Finally, programme effectiveness in terms of HIV prevalence is a result of a variety of determinants (e.g. government and non-governmental interventions, and changes in sexual behaviour).

National programme budget responses

The Ministry of Public Health budget was reduced from 66.544 billion baht in 1997 to 59.92 billion in 1998, a 10% reduction. The budget of the Communicable Disease Control (CDC) Department rose by 1.8%, and that of the Food and Drug Administration by 13.7%, while in all other departments the budgets were reduced (Table 3). During the last trimester of the fiscal year 1997 (July–September 1997), there was a de facto reduction in the Ministry of Public Health programme budget owing to the Ministry of Finance's lack of cash, but figures are not available for this analysis.

Table 4 compares the Ministry of Public Health AIDS budget with its non AIDS budget. The AIDS budget during the period 1997–98 suffered a greater cut(24.7% reduction) than did the non-AIDS budget (5.5% reduction). However, the situation was reversed for 1998–99, with the AIDS budget more or less preserved (0.6% reduction) while thenon-AIDS budget was cut further (8.9%reduction).

Table 5 shows that the 1998 national HIV/AIDS programme budget was cut by 25.4%. However, when this reduction is adjusted by the inflation rate of

Table 3: Ministry of Public Health budget allocation by departments, 1996–1998 (million baht)

	1996	1997	1998	97-98 % changes
1. Office of Permanent Secretary	41 240.5	51 107.0	45 245.4	– 11.5
2. Department of Health	5 129.3	5 380.8	4 799.2	– 10.8
3. Department of CDC	3 577.1	3 646.7	3 713.5	+1.8
4. Department of Medical Service	3 058.7	3 519.0	3 307.4	– 6.0
5. Department of Mental Health	1 425.8	1 514.9	1 438.1	– 5.1
6. Department of Medical Science	518.0	893.2	877.0	– 1.8
7. Food and Drug Administration	286.8	422.5	480.2	+13.7
8. Health Systems Research Institute	0	60.3	60.0	– 0.5
Total	55 236.2	66 544.3	59 920.9	– 10.0

Source: Ministry of Public Health, Health Policy and Plan Bureau

10.5%, there is an effective reduction of 33% compared to 1997. Four out of five programme budgets in Table 5 were cut, with only the budget for social and psychosocial services being increased (by 20%). Health promotion and medical services took the major share (71%) of the national programme budget; research and development of local intellectual capacity took the smallest share.

Table 4: Ministry of Public Health AIDS and non-AIDS budgets, 1992–1999

Fiscal year	MOPH AIDS budget	% change	MOPH non-AIDS budget	% change
1992	447.5	na	24 193	na
1993	904.5	102.1	31 994	32.2
1994	1 000.1	10.6	38 319	19.8
1995	1 245.5	24.5	43 858	14.5
1996	1 418.5	13.9	53 782	22.6
1997	1 459.9	2.9	65 084	21.0
1998	1 099.0	– 24.7	61 526	– 5.5
1999	1 092.6	– 0.6	56 052	– 8.9

Note: 1999 is budget request figure as of June 1998

Table 5: National HIV/AIDS programme budget by five major activities, 1997–1998

	1997 million baht	%	1998 million baht	%	1997–98 % change
1. Health promotion and medical services	1 438.60	72.4	1 052.80	71.1	– 26.8
2. Coordination	213.8	10.8	141.6	9.6	– 33.8
3. Empowerment of individual and community	202	10.2	138.3	9.3	– 31.5
4. Social and psychosocial services	85.2	4.3	102.2	6.9	+ 20.0
5. Research and local intellectual capacity development	47.6	2.4	46.7	3.2	– 1.9
Total	1 987.10	100.0	1 481.50	100.0	– 25.4

Source: Ministry of Public Health, CDC Department

The 1998 distribution of the budget between the five programmes was slightly different from 1997. There was an increase in the proportion of social services and research at the expense of the top three programmes. However, the top three programmes in 1998 remained the same as in 1997.

The AIDS programme is intersectoral and involves a number of ministries. Not unexpectedly, the Ministry of Public Health took the major share (74.2%) of the total 1998 national programme budget even though that was 24.8% less than in 1997 (Table 6). The amount of budget allocated to the Ministry of University Affairs was cut by 22.3%. Only the Ministry of Labour and Social Welfare, which is mainly responsible for the social and psychosocial services, increased its share (by 18.9%), which is reflected in the increase in this programme element as shown in Table 5. Detailed analysis shows that the proportion of the AIDS budget within the CDC Department was reduced from 21% in 1997 to 14% in 1998. This demonstrates the lower priority of AIDS compared to other disease control programmes.

Again, the 1998 budget allocation by ministries showed no significant reorientation compared with 1997. Although the Ministry of Labour and Social Welfare got an increase, this is still small in monetary terms (17 million baht increase). Budget rankings in 1998 were similar to those in 1997.

Analysis of the Ministry of Public Health AIDS budget shows that the Office of the Permanent Secretary and the CDC Department took the major share of the national AIDS budget, i.e. 67.8% in 1997 and 64.4% in 1998 (Table 7). This prompted us to look at the programme budget of the Office of the Permanent Secretary and the CDC Department in greater detail. Table 7 has a detailed breakdown of the budgets of the Office of the Permanent Secretary and the CDC Department by five programmes in 1997 and 1998. We found that health promotion and medical services took the major share within the Office of the Permanent Secretary. This programme was reduced by 50.7% (particularly owing to reduction in hospital construction projects). The overall budget under the Office of the Perma-

Table 6: National HIV/AIDS programme budget by ministries, 1997–1998

	1997 million baht	%	1998 million baht	%	1997–98 % change
1. Public Health	1 461.20	73.5	1 099.00	74.2	– 24.8
2. University Affairs	233	11.7	181	12.2	– 22.3
3. Labour and Social Welfare	90.9	4.6	108.1	7.3	+18.9
4. Other ministries	202	10.2	93.4	6.3	– 53.8
Total	1 987.10	100.0	1 481.50	100.0	– 25.4

Source: Ministry of Public Health, CDC Department

Table 7: Programme budget comparison of the Office of the Permanent Secretary and the CDC department, 1997–1998 (million baht)

Five programme budget	Office of the Perm. Sec.			CDC Dept		
	1997	1998	% change	1997	1998	% change
1. Health promotion and medical services	701.4	345.8	– 50.7	545.8	393.9	– 27.8
– Health promotion and prevention	0	0	0	3.0	5.3	76.7
– Medical services	320.2	272.1	– 15.0	540.3	386.9	– 28.4
– Support to medical services	0	0	0	0	0	0
– Counselling	0	0	0	2.5	1.7	– 32.0
– Hospital ward construction projects	391.2	73.7	– 80.7	0	0	0
2. Programme coordination	0	0	0	213.8	86.6	– 59.5
3. Empowerment of individuals and communities	6.3	5.3	– 15.9	22.3	44	97.3
4. Social and psychosocial services	0	0	0	0	0	0
5. Research and local wisdom development	0	0	0	0.6	11.4	1 800.0
All five programmes	707.7	351.1	– 50.4	782.5	535.8	– 31.5
% of total national AIDS programme budget	32.2%	25.5%	na	35.6%	38.9%	na

Source: MOPH CDC Department

nent Secretary was reduced by 50.4%. Comparing 1997 to 1998, the overall budget under the CDC Department was reduced by 31.5%, mainly owing to cuts in programme coordination (59.5% reduction) and medical services (28.4% reduction). The budget for empowerment of individuals and communities increased from 22.3 million baht to 44 million, a 97.3% increase. This budget reorientation reflects cuts in infrastructure, coordination and medical services and increases in empowerment and research. However, the 1998 budget reorientation is not significant in monetary terms.

Budget analysis by programme activities provides more understanding of how the Government of Thailand and the National AIDS Committee dealt with the crisis. We selected nine major activities under the Office of the Permanent Secretary, the CDC Department and the Health Department for further in-depth analysis. This is shown in Table 8, arranged according to the size of the 1997 budget. These nine activities consumed

Table 8: Analysis of nine major programme activities: Office of the Permanent Secretary, DOH and the CDC department, 1997–1998

Nine major programme activities	1997	%	1998	%	1997–1998 % change
1. Use of antiretrovirals	260	30.5	245	32.8	– 5.8
2. Drugs for opportunistic infections	188	22.0	166	22.3	– 11.7
3. Blood donor screening	126.2	14.8	141.1	18.9	+11.8
4. Universal precautions	94.6	11.1	26.5	3.6	– 72.0
5. NGO subsidy	90	10.6	90	12.1	+0.0
6. Breast milk replacement	26.9	3.2	36.2	4.9	+34.6
7. Laboratory tests	20	2.3	14.3	1.9	– 28.5
8. Condom distribution	22	2.6	21	2.8	– 5.0
9. Antiretrovirals against vertical transmission	25	2.9	5.9	0.8	– 76.4
Total nine main activities (million baht)	852.7	100.0	746	100.0	– 12.5
% of national AIDS programme budget	42.9%			50.4%	na

Source: Ministry of Public Health, CDC Department

42.9% and 50.4% of total national AIDS programme budget in 1997 and 1998 respectively.

The top three activities are the use of antiretroviral drugs, drugs for opportunistic infections drugs, and blood donor screening. Only two out of the nine major activities increased their budgets in 1998; namely, breast milk replacement (34.6% increase) and blood donor screening (11.8% increase). The other seven activities experienced budget cuts; for instance, the budget for vertical transmission was reduced from 25 million baht to 5.9 million (76.4% reduction). A budget was proposed for the prevention of 2500 cases in 1997 and 1998. We estimated 18 000 infections among pregnancies annually. Resources could accommodate 14% of potential demand for the interruption of vertical transmission. Because the budget is limited but the outcome of preventive activities is good, the Thai Red Cross Society campaigns for domestic donations for the prevention of vertical transmission.

The budget for universal precautions was reduced from 94.6 million baht to 26.5 million (72% reduction). Antiretroviral drugs were selectively pro-

vided in centres that were able to provide comprehensive psychosocial and medical services to infected persons. This took the largest amount of resources in both years, although it was reduced by 5.8% in 1998. The budget for drugs for opportunistic infections was reduced from 188 million baht to 166 million (11.7% reduction). The budget for condoms was reduced by 5%. The annual number of condoms which are distributed free of change by the government fell from 60 to 50.2, 11.2 and 10.1 million pieces during the period 1995–1998. The budget subsidy to nongovernmental organizations stayed at 90 million baht.

The budget for drugs for opportunistic infections (166 million baht in 1998) was not sufficient to purchase the same amount of drugs as in 1997. Our survey of the costs of four common drugs for opportunistic infections (comparing 1998 to 1997) at Ramathibodi Teaching Hospital in Bangkok found a wide range of cost increases (from 3% to 20%, with an average of 10%). Survey data at Phayao Provincial Hospital showed a range of increases from 11% to 50%, with an average of 31% (Table 9).

Using an estimated cost of treatment of opportunistic infections (excluding the use of antiretrovirals) in AIDS patients of US$ 800–1500 (average US$ 1150) per person per annum, and considering that the total number of AIDS cases in December 1997 was 60 000, of whom one-third required treatment for opportunistic infections, there is a potential need for 920 million baht (calculated at 40 baht per US dollar) for this treatment. In 1998, a budget of only 166 million baht budget was available. Resources can therefore meet only 18% of the potential demand.

In summary, the 1998 national AIDS programme budget was cut by 25% in nominal terms and 33% in real terms. The Ministry of Public Health took the major share of this budget, with the Office of the Permanent Secretary and the CDC Department taking the highest budget proportions. The 1998 budget

Table 9: Survey of costs of drugs for opportunistic infections, Phayao and Ramathibodi, 1998 (baht)

Selected drugs	Phayao Provincial Hospital			Ramathibodi Hospital		
	1997 cost	1998 cost	% change	1997 cost	1998 cost	% change
Amphotericin B 50 mg vial	300	413	37%	300	308	2.7%
Fluconazole 200 mg 50 cap	10 914	12 122	11%	10 368	11 515	11%
Itraconazole 100 mg 100 cap	3 000	3 839	27%	2 850	3 410	20%
Ketoconazole 200 mg 250 tab	1 000	1 500	50%	1 062	1 100	3.5%
Average			31%			10%

Source: Phayao Provincial Hospital and Ramathibodi Hospital, 1998

was reorientated in response to the crisis so that funding was increased for social and psychosocial services and decreased for infrastructure, programme coordination and medical services. However, the reorientation was not significant in monetary terms. Health promotion and medical services got the highest proportion of the budgets of the Office of the Permanent Secretary and of the CDC Department. The three programme activities consuming the highest budget share are mostly medical interventions; namely, the use of antiretroviral drugs, drugs for opportunistic infections and screening of donated blood. Despite receiving the highest budget allocations, these interventions could not effectively match the potential demand for curative services. In addition, inflation of the cost of drugs for opportunistic infections and of other imported medical goods further aggravated the problems of limited resources in 1998.

Response at provincial level

Field visits and interviews to provincial chief medical officers and hospital staff (in Chiangmai, Chiangrai and Phayao provinces in the upper Northern Region) yielded interesting information. The cuts in the programme budget cut have had a significant impact on field operations but the level of negative impact depends on the leadership and management skills of the chief medical officer and the local health team.

Major policy decisions adopted by these provinces were the allocation of the limited budget to more cost-effective programme activities such as the empowerment of individuals and communities, intersectoral activities, coordination with nongovernmental organizations, and other non-medical interventions. The trade-off is the reduction of resources for the treatment and care of AIDS cases. However, there is insufficient evidence to assess the cost-effectiveness of these non-medical interventions.

By the third quarter of the 1998 financial year, the cash flow deficit of the Ministry of Finance meant that some provincial programmes did not receive their budget allotments. This significantly interrupted programme operations. The late arrival of the budget allotment earmarked for free medical care of the poor, which was a significant source of support to the operation of the AIDS programme, also hampered activities.

Hospital responses

The budget allocation to hospitals is inadequate compared to the demand for care. For example, Phayao provincial hospital received an allocation of 3.2 million baht for drugs for opportunistic infections in 1997, but the value of the four drugs consumed was 6.9 million baht. The deficit was covered by hospital non-budgetary revenue and other budget lines, especially the scheme for free care for those with low incomes. However, there is evidence that income from non-budgetary sources went down due to the lower purchasing power of customers. In 1998, non-budgetary revenue may not be able to cover

the deficit from the treatment of opportunistic infections.

Owing to the cash flow deficit, the Comptroller-General's Department could not disburse budget funds to hospitals promptly. Table 8 shows the increase in cost of drugs for opportunistic infections. Prices of other drugs increased by 15–20% (nonproprietary drugs) and 20–30% (proprietary drugs). Demand for AIDS care and increases in the cost of drugs for opportunistic infections together squeezed the limited resources of the hospital, resulting in limited access to these drugs.

In view of this situation, the responses of hospitals with regard to the treatment of opportunistic infections have been:

- to inform doctors and patients regularly about the hospital's financial status in order to increase cost consciousness;
- to cap expenditure on drugs for opportunistic infections;
- to provide supportive and palliative care instead of definitive treatment for selected cases;
- to refer patients of district hospitals to higher levels of care;
- to develop guidelines on case selection for treatment of opportunistic infections;
- to provide counselling to prepare terminal cases for death;
- to advocate the use of alternative medicine, herbal treatments and meditation.

There is insufficient evidence to indicate higher mortality or a shorter life span among AIDS cases as a result of these responses, but it is possible that persons could die early due to inadequate treatment of opportunistic infections. The responses increase inequity when only patients who can afford treatment or are insured have access to drugs for opportunistic infections. The situation also presents an ethical dilemma for health care professionals.

Programmes of isoniazid prophylaxis for tuberculosis and cotrimoxazole use for prevention of *Pneumocystis carinii* pneumonia were carried out among persons with HIV infection. Antiretroviral drugs were saved for the prevention of vertical transmission and were not used for the general treatment of HIV-positive cases. Antiretroviral drugs are given in centres where a comprehensive approach to treatment is assured.

Discussion

As described clearly in the national AIDS control and prevention plan (1997–2001), the AIDS programme budget is not solely a financing source for HIV/AIDS control. Rather, it is a catalyst for mobilizing and reorienting the use of resources from public and private sectors, families and the community at large. The 1998 crisis forced all the ministries concerned to amend their budgets within the limits set by the Budget Bureau. The AIDS budget suffered as a result.

We believe that behavioural change is one of the most crucial elements of sustainable AIDS control in Thailand. However, there is insufficient evidence at present to show a causal relationship

between national AIDS programme activities and other major determinants (e.g. the death of a relative or neighbour) on sexual behaviour change among the Thai population. If there is a causal relationship between programme activities and behavioural change, programme contraction will have a negative impact on AIDS control. If other determinants that are not directly affected by the economic crisis show a causal relationship, the crisis may have little impact on AIDS control. A survey of commercial sex premises in January 1998 showed a slight increase in the number of such premises, from 7208 in 1997 to 8016 in 1998. However, the number of female sex workers does not seem to have increased, being 63 526 in 1997 and 63 941 in 1998. However, the survey also revealed that these premises had fewer customers (down from four clients per day in 1997 to three every two days in 1998). This reflects a reduction in the demand for commercial sex services, although it does not tell us anything about the occurrence of casual sexual encounters.

The significant reduction in the number of condoms distributed, especially in 1997 and 1998, raises concern because, when female sex workers have no access to distribution of free condoms available there is a significant increase in the risk of spreading infection. The belief that female sex workers or their clients may purchase condoms is unrealistic because of the high price of condoms: the retail price was 11–15 baht per condom in 1998. The retail price of a condom accounts for 14% of the prostitute's income per client served (calculated on low-cost service of 200 baht and a 60% deduction by the owner of the premises). Moreover, when compared to bulk purchase by the Ministry of Public Health at 1.48 baht per piece in 1998, it is cheaper to distribute condoms via public channels even when distribution costs raise the price to 1.5 baht per condom. In-depth studies are needed to show that female sex workers will purchase condoms, but it can be argued that reallocation within AIDS control programmes, such as by shifting the budget for less cost-effective drugs for opportunistic infections and antiretrovirals to more cost-effective condoms, is feasible.

The national AIDS programme budget has been oriented to medical intervention for some years. At the same time, evidence from several sexual behaviour surveys has demonstrated changes in sexual promiscuity among men. We would argue that programme contraction in the area of medical intervention in 1998 may have little impact on heterosexual HIV infections. Our argument should be validated by subsequent sentinel surveys in June 1998, 1999 and 2000 and subsequent sexual behaviour surveys. However, programme shrinkage in the provision of drugs for opportunistic infections may shorten the life span of AIDS cases. When resources are scarce, policy-makers must allocate to the most cost-effective interventions. The question is: what is the cost-effectiveness of each programme activity? Budget reorientation is extremely difficult unless it is guided by evidence of cost-effectiveness.

Conclusion

Assessment of the impact of the economic crisis on the AIDS prevention and control programme is not straightforward. We found significant programme reduction in 1998, especially in the area of medical interventions (antiretrovirals, drugs for opportunistic infections, and donor blood screening). Programme reduction, especially of condom distribution, may have negative consequences on the primary prevention of heterosexual infection. There was a reorientation of the 1998 budget in response to the economic crisis but this was not significant in monetary terms as it chiefly affected medical services, which are less cost-effective and could not meet potential demand. This posed further questions regarding equal access to antiretrovirals and treatment for opportunistic infections.

We argue that programme sustainability and outcome (in terms of HIV infection) depends largely on change in sexual behaviour. Change in sexual practices may be related to programme activities and thus may be influenced by the economic crisis, but the extent to which this is the case is yet to be explored. Further evidence from sentinel surveys in June 1998 and subsequent sexual behaviour surveys is required to prove this hypothesis.

Budget reorientation towards cost-effective programme activities (e.g. condom distribution, blood donor screening, vertical transmission, treatment of sexually transmitted diseases) is strongly recommended. However, policy-makers should strike a balance, taking into account constraints caused by political pressures and the urgent demand for antiretrovirals and drugs for opportunistic infections.

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