SPECIAL REPORT

FOUR YEARS FOLLOW-UP OF THE IMPACT OF AIDS AND INTENSIVE HEALTH EDUCATION ON THE CONTROL OF SEXUALLY TRANSMITTED DISEASES IN THAILAND

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INTRODUCTION

The first AIDS case was recognized in Thailand in 1984 (Limsuwan, 1986) and the disease has rapidly spread since 1988 (Thongcharoen, 1991). As of June 30, 1991, 123 AIDS cases, 345 ARC cases, 322 babies born (Anonymous, 1991) to HIV infected mothers and 31,812 HIV infected persons had been reported. These statistics indicate the critical danger through a rapid and wide range of heterosexual transmission which is leading HIV familial infection, particularly from HIV infected mothors to their children through perinatal transmission (Ramasoota, 1989a,b) which in turn has a tremendously undesirable impact on women and children (Erben, 1990; Heymann, 1990). It is estimated that there would be approximately 317,889 HIV infected persons by the end of 1991 and 1,327,276 by the year 2000 (Anonymous, 1990a).

In Thailand, a national AIDS prevention and control program for 1988-1991 was established (Anonymous, 1988a) with financial and technical assistance from the World Health Organization as well as from other foreign agencies to formulate a Short Term Plan (STP) in 1988 (Anonymous, 1989a) and Medium Term Plan (MTP) in 1989-1991 to meet the criteria and standards set up by WHO (Anonymous, 1989b). This program has been further developed to become an Accelerated AIDS Prevention and Control Program for 1988 to 1992 (Anonymous, 1988b) by accelerating and incorporating the system into the local health services and primary health care as well as the existing health services for sexually transmitted existing health services for sexually transmitted diseases (STD) control. Health education *per se* and a campaign advertising knowledge on AIDS, a campaign for promotion of condom use, blood screening for HIV antibodies, counselling services for risk groups (particularly male and female sex workers and STD clients and other target groups) have resulted in improved prevention and control of sexually transmitted diseases which are enhancing factors in the transmission of HIV (Traisupa, 1989; WHO, 1989).

The following is a summary of a four consecutive years study from 1987–1990 on the campaign and acceleration of prevention and control of AIDS and STD, which aimed to ascertain the requirements for the prevention and control of sexually transmitted diseases.

Objectives of study

To evaluate the achievement of the program for prevention and control of AIDS as well as efforts emphasizing a health education campaign against AIDS and STD during 1987 to 1990 and to determine whether the impact resulting from this intervention against STD is the key to improving the existing interventions.

Method of study

Informational data, analysed from report records and results of the relevant research studies during 1989–1990, originated from descriptive epidemiological studies as well as from analytical retrospective epidemiological studies.

RESULTS

1. Impact of health education on sexually transmitted diseases and AIDS

From Tables 1 and 2, it is evident that the accelerated program placed particularly strong emphasis on health education and public information on AIDS and other STD, including distribution and promotion of condoms, counselling services, etc which resulted in some modification of heterosexual practices and attitudes, including worries and fears of AIDS as the great killer. These are likely to reduce high risk behavior and to have a positive impact in the prevention and control of STD as well as on AIDS.

2. Impact on prevention and control of STD

2.1 Impact on the sources of STD during 1987–90

From Tables 3 and 4, it may be concluded that

(a) Impact due to worries and fears of AIDS as well as positive results arising from campaigns on health education against STD and AIDS did not show any marked reduction in the number of sources of STD infection and the number of male and female sex workers. On the contrary the number of sources of STD infection increased by 9.92% and the number of male and female sex workers also increased by 4%, while there was some reduction in the number of sources of infection and number of male and female sex workers in Bangkok, central and southern regions. These reflect a degree of positive impact due to those interventions.

(b) Much better cooperation was obtained in the first two years in STD control although this cooperation was decreasing in the second two years. Since the establishment of the Committee on AIDS Prevention and Control chaired by the provincial governor in every province, cooperation and coordination between the police and health personnel with the owners and managers of sex establishments have been much improved (Anonymous, 1988b).

2.2 Impact and repercussions on STD control during 1987–1990

The impact on the number of STD attendants

Table 1

Total performance of health education on AIDS in particular during 1988–1990.

Groups of clients receiving services (case)	Year		
	1988	1989	1990
Male sex workers	4,483	3,315	9,182
Female sex workers	101,848	148,520	402,544
Drug users	21,438	46,242	84,947
Jail inmates	36,262	49,206	51,947
School/university students	173,003	352,308	1,319,918
Health institution staff	500,363	776,103	*
General public	285,292	506,682	*
STD clients	*	*	368,761
Other groups	81,507	221,508	1,234,488
Distribution of condoms (pieces)	691,155	4,364,181	12,029,190
Public information services (time)	957	3,943	133,190
Counselling services	2,990	10,393	35,455

*Data not available due to changing of information system.
Source of statistics: Division of AIDS, Department of Communicable Disease Control.

Table 2

Total performance of health education and training on sexually transmitted diseases given to all STD units during 1987–1990.

Activities	Year				Percent increase (+) or decrease (–) from 1987 to 1990
	1987	1988	1989	1990	
Health education					
In work place (cases)	1,134,012	1,162,437	1,147,678	1,099,252	- 3.06
Outside work place (cases)	449,488	564,765	643,726	727,211	+ 61.79
Exhibitions (times)	151	207	466	482	+ 219.20
Training in STD					
STD health personnel (persons)	862	1,272	787	950	+ 10.21
Other health personnel (persons)	19,710	29,349	52,038	68,735	+ 248.73
Health education through mass media					
Television (times)	356	155	180	189	- 46.91
Radio (times)	526	364	620	752	+ 42.96
Newspapers/Journals (times)	93	363	70	46	- 50.54
Cinema (times)	288	197	129	66	- 77.08
Public loud speakers (times)	1,103	986	1,725	2,751	+ 149.41
Health education through STD information sheets					
Leaflets	502,116	1,609,123	1,421,942	995,653	+ 98.29
Technical booklets	51,440	71,652	76,423	122,827	+ 138.78
Articles	8,311	5,565	3,052	7,117	- 14.37
Posters	100,662	52,599	85,206	73,095	- 27.38
Stickers	23,976	155,834	64,244	73,462	+ 206.40
Others	41,266	96,537	609,549	152,296	+ 269.05

Source: VD Division, Department of Communicable Diseases Control, Ministry of Public Health.

and the percentage affected with STD were analysed and are reported in Tables 5, 6, 7, 8 and 9. The important points are as follows:

(a) The intensive campaign on health education during 1987-1990 had an impact, with 8% reduction of the number of STD attendants and of 38% reduction of attendants affected with STD as well as a 32% reduction of STD incidence per 1000 population. Such reductions were reported from every region except the south, where there was an increased number of attendants but a 32% decrease in attendants affected with STD.

(b) There was a 10% increase in the number of female attendants, indicating better cooperation, although from the preventive viewpoint this is not good enough.

(c) The 41% reduction during 1987–1990 in the STD incidence from 7.69 per 1000 population to 4.48 per 1000 population has resulted from the impact of the health education campaign on AIDS and STD.

(d) STD incidence by type was satisfactorily reduced, particularly genital ulcers (GUD), eg 59% reduction of chancroid, 27% reduction of syphilis, 59% reduction of gonorrhea. These results reflect in part the effectiveness of the promotion campaign of condom use.

(e) STD incidence by region were markedly

Table 3

Impact on the sources of STD surveyed by all STD Units during 1987–1990.

Region	No. of provinces	Year								%	Percent increase (+) or decrease (–) of sources of STD infection from 1987–1990	
		1987		1988		1989		1990				
		places	persons	places	persons	places	persons	places	persons		places	persons
Bangkok	1	824	30,030	861	26,325	810	23,574	883	28,666	33.14	+ 7.16	– 4.54
Central	24	1,587	19,215	1,716	22,685	1,697	24,296	1,560	22,969	26.55	– 1.70	+ 19.54
North	17	1,169	9,252	1,250	10,120	1,299	10,684	1,290	10,241	11.84	+ 10.35	+ 10.69
Northeast	17	803	7,367	850	7,366	923	7,369	1,095	8,042	9.29	+ 36.36	+ 9.16
South	14	1,221	17,299	1,186	16,094	1,324	18,362	1,332	16,576	19.16	+ 9.09	– 4.17
Total	73	5,604	83,163	5,833	82,592	6,053	84,885	6,160	86,496	100	+ 9.92	+ 4.00

Source: VD Division, Department of Communicable Diseases Control, Ministry of Public Health.

Table 4

Achievements in controlling sources of STD infection during 1987-1990.

STD control	Year				Percentage STD control increase (+) or decrease (–) from 1987 to 1990	Places	
	1987	1988	1989	1990			
All sources of infection	5,604	5,833	6,053	6,160	+ 9.92	Brothels	1,445
STD sources infection	4,379	4,695	5,054	4,515	+ 3.10	Hotel with sex workers	321
Percentage cooperation	78.14	80.49	83.49	73.29	– 6.21	Bars and nightclubs	300
No. of total male/female sex workers	83,163	82,592	84,885	86,494	+ 4.0	Massage parlors	167
No. of male/female sex workers examined	70,436	76,182	73,885	70,432	– 5.38	Tea houses	105
Percentage cooperation	89.51	92.24	87.0	81.43	+ 9.03	Others	2,077

Source : VD Division, Department of Communicable Diseases Control, Ministry of Public Health.

Table 5

Changes in number of STD attendants and all STD incidence during 1987 to 1990.

Activities	Sex	Year				Percent increase (+) or decrease (–) of activities from 1987 to 1990
		1987	1988	1989	1990	
No. clients examined	male	497,261	478,228	460,975	334,630	– 32.70
	female	606,552	646,920	647,188	671,892	+ 10.77
	Total	1,103,813	1,125,148	1,108,163	1,006,522	– 8.80
No. STD patients found	male	237,237	217,266	199,048	125,379	– 47.15
	female	173,169	165,897	168,181	126,884	– 26.73
	Total	410,406	383,163	361,229	252,263	– 38.53
Percentage STD found	male	47.71	45.43	43.18	37.47	– 21.46
	female	28.55	25.64	25.06	18.88	– 33.90
	Total	37.18	34.06	32.60	25.06	– 32.60

Source: VD Division, Department of Communicable Disease Control, Ministry of Public Health.

Table 6

Changing trends in number of clients examined and STD found by region during 1987 to 1990.

Region	Year								Percentage increase (+) or decrease (-) in STD found from from 1987 to 1990	
	1987		1988		1989		1990			
	No. examined	Percent STD found	No. examined	Percent STD found	No. Examined	Percent STD found	No. Examined	Percent STD found	No. examined	Percent STD found
Bangkok	212,210	44.96	199,370	41.35	182,073	42.91	144,208	35.52	– 32.04	– 20.99
Central	309,709	34.08	317,286	32.49	311,565	30.76	285,587	26.01	– 7.79	– 9.74
North	181,319	41.65	187,431	36.44	189,874	32.41	148,925	25.11	– 17.86	– 39.71
North-East	217,093	31.78	224,374	29.38	220,783	28.96	191,366	21.40	– 11.85	– 32.66
South	183,482	33.88	196,687	32.24	203,868	30.32	236,436	20.48	+ 28.86	– 39.55
Total	1,103,813	37.18	1,125,148	34.06	1,108,163	32.60	1,006,522	25.06	– 8.81	– 32.60

Source: VD Division, Department of Communicable Disease Control, Ministry of Public Health.

reduced. More than half of the STD incidence reduction from 1987 found in the north and the Bangkok metropolitan area in which intensive health education campaigns on AIDS and promotion of condom use were undertaken.

From Fig 1, there was an increasing trend of STD found in the under 15 years age group of up to 21.8% in the last four years. This actually reflects increasing promiscuity and child prostitution practices in the commercial sex business, while the other age groups are still the same from 1987 onwards.

From Table 10 it may be concluded that

(a) As a result of intensive and accelerated campaign against STD and AIDS, the number of STD patients in all occupations decreased in the last four years, particularly notable being the 21% reduction in commercial sex

Table 7

Number of STD cases and percentage of STD found by region during 1987 to 1990.

Regions	1987		1988		1989		1990		Percentage increase (+) or decrease (–) from 1987 to 1990
	No.	%	No.	%	No.	%	No.	%	
Bangkok	95,413	23.25	82,440	21.52	76,131	21.63	51,220	20.30	– 46.32
Central	106,333	26.40	103,088	26.90	95,829	26.53	74,271	29.44	– 30.15
North	75,516	18.40	68,302	17.83	61,535	17.03	37,402	14.83	– 50.47
Northeast	68,988	16.81	65,920	17.20	63,928	17.70	40,949	16.23	– 40.64
South	62,156	15.14	63,413	16.55	61,806	17.11	48,421	19.20	– 22.09
Total	410,406	100	383,163	100	361,229	100	252,263	100	– 38.53

Source: VD Division, Department of Communicable Diseases Control, Ministry of Public Health.

Table 8

Percentage of STD by type and their incidence per 1000 population during 1987-1990.

Type of STD	No. and percentage of STD found				Incidence of STD per 1000 population				Percentage increase (+) or decrease (-) from 1987 to 1990	
	1987	1988	1989	1990	1987	1988	1989	1990	Percent STD by type	Incidence of STD by type
Syphilis	21,682 (5.28)	21,700 (5.66)	22,729 (6.29)	17,168 (6.81)	0.41	0.40	0.41	0.30	+ 28.98	– 26.83
Gonorrhoea	232,859 (56.74)	216,107 (56.40)	197,377 (54.64)	133,615 (52.97)	4.36	3.97	3.95	2.37	– 6.64	– 45.64
Chancroid Lympho	45,486 (11.09)	40,004 (10.44)	34,926 (9.67)	19,619 (7.77)	0.85	0.73	0.63	0.35	– 29.94	– 58.82
Granuloma venereum	19,708 (4.90)	20,030 (5.23)	17,930 (4.97)	9,968 (3.95)	0.37	0.37	0.32	0.18	– 17.71	– 51.35
Granuloma inguinale	–	–	–	–	–	–	–	–	–	–
Non-specific urethritis	90,671 (22.09)	85,323 (22.27)	88,259 (24.43)	71,902 (28.50)	1.70	1.57	1.59	1.28	+ 29.02	– 24.70
Total	410,406 (100)	383,163 (100)	361,229 (100)	252,263 (100)	7.69	7.04	6.50	4.48		– 41.74

Source: VD Division, Department of Communicable Diseases Control, Ministry of Public Health.

workers, 35% reduction in employees and 32% in agriculture workers involved.

(b) Due to easier access and better assimilation of knowledge among higher educated persons, the rate was markedly reduced by more than 50% eg 70% in school and university students, 72% in state enterprise employees and 66% among civil service officials.

2.3 Impact of changing sexual behaviour of STD transmitters

From Table 11, it may be concluded that in the last four years (1987–1990), a variety of campaigns against AIDS have resulted in reduction of risky behavior of sexual transmission in terms of the number of STD patients as well as their proportion, particularly among sex workers, with a reduction of 48% in the rate and of 8% in the proprtion. Other risk behaviors have also reduced sexual transmission except one particular sexual behavior, namely wives transmitting STD to their husbands: this group includes female sex workers

Table 9

Changing incidence of all STD per 1000 population by region during 1987 to 1990.

Region	No. of provinces	Incidence of all STD per 1000 population								Percent median STD incidence from 1987 to 1990
		1987		1988		1989		1990		
		Range	Median	Range	Median	Range	Median	Range	Median	
Bangkok	1	–	17.28	–	14.54	–	13.37	–	8.68	– 49.76%
Central	18	0.75–18.58	7.18	0.42–13.80	6.62	0.89–13.72	5.84	0.86–14.45	4.71	– 34.40%
East	6	5.21–20.41	13.09	5.58–20.22	12.99	5.14–16.36	11.79	4.12–14.57	8.83	– 32.54%
North	17	1.62–13.66	6.78	1.64–12.20	6.06	1.52–12.74	5.28	0.82– 9.53	3.23	– 52.36%
Northeast	17	1.21– 6.12	3.28	1.30– 5.89	3.12	1.32– 5.05	3.03	0.82– 3.30	1.97	– 19.32%
South	14	3.64–30.23	10.29	3.30–31.35	11.03	2.71–34.97	10.79	1.87–21.05	7.88	– 23.42%
Total	73	0.75–30.23	7.69	0.42–31.35	7.04	0.89–34.97	6.50	0.82–21.05	4.48	– 41.74

Sources: VD Division, Department of Communication Diseases Control, Ministry of Public Health.

Table 10

Number and percentage distribution of STD patients by occupation during 1987 to 1990.

Occupation	1987		1988		1989		1990		Percent STD patients increase (+) or decrease (–) from 1987 to 1990
	No. of STD patients	%	No. of STD patients	%	No. of STD patients	%	No. of STD patients	%	
Sex businesses	129,432	31.54	131,893	34.42	129,730	35.91	101,999	40.43	– 21.19
Employees	92,513	22.54	89,867	23.45	88,358	24.46	62,696	24.85	– 32.23
Agriculturers	42,151	10.27	42,605	11.12	41,985	11.62	28,281	11.21	– 32.90
Home services	21,997	5.36	16,434	4.29	15,106	4.18	10,734	4.26	– 51.41
Soldiers/polices	24,401	5.95	19,928	5.20	18,762	5.19	10,671	4.23	– 56.27
Merchants/business men	21,935	5.34	18,671	4.90	16,601	4.60	10,679	4.23	– 51.31
Civil service officials	27,566	6.72	22,660	5.91	17,363	4.81	9,255	3.67	– 66.43
School/university students	29,628	7.22	23,475	6.13	17,990	4.98	8,818	3.50	– 70.24
Labourers	6,068	1.48	5,435	1.42	5,140	1.42	3,936	1.56	–35.13
State-enterprises	5,920	1.44	3,431	0.90	3,163	0.88	1,659	0.66	– 71.91
Others	8,795	2.14	8,674	2.26	7,031	1.95	3,535	1.40	– 59.81
Total	410,406	100	383,163	100	361,229	100	252,263	100	– 38.53

Table 11

Behavioral pattern in sexual transmission of STD patients during 1987 to 1990.

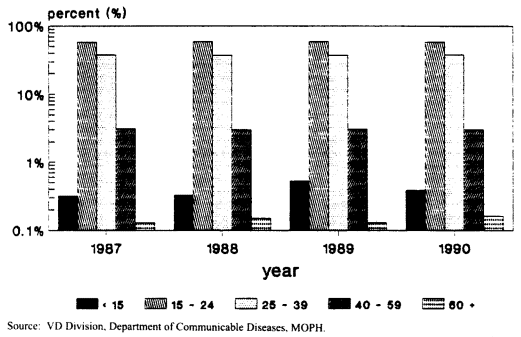
Behavioral pattern of sexual transmission	1987		1988		1989		1990		Percent STD patients increase (+) or decrease (-) in sexual transmission from 1987 to 1990
	No. of transmitters	%	No. of transmitters	%	No. of transmitters	%	No. of transmitters	%	
Sex workers transmit STD to patient	231,419	56.39	210,058	54.82	191,803	53.10	120,503	47.77	– 47.93
Husbands transmit STD to spouses	43,795	10.67	35,622	9.30	33,999	9.41	25,871	10.26	– 40.93
Wives transmit STD to husbands	426	0.10	292	0.08	565	0.16	664	0.26	+ 55.87
Hidden sex workers transmit STD to partners	3,975	0.97	3,508	0.91	3,718	1.03	2,786	1.10	– 29.91
Other behaviors to transmit STD	130,791	31.87	133,683	34.89	131,144	36.30	102,439	40.61	– 21.68
Total	410,406	100	383,163	100	361,229	100	252,263	100	– 38.53

Table 12

Condom use in all STD clients by region up to 20 May 1991.

Region	No. of provinces	STD clients				Open-case female sex worker				Hidden-case female sex worker			
		No. of surveyed provinces	No. of surveyed female sex workers	Condom use		No. of surveyed provinces	No. of surveyed female sex workers	Condom use		No. of surveyed provinces	No. of surveyed female sex workers	Condom use	
				No.	%			No.	%			No.	%
Bangkok	1	1	158	68	43.04	1	324	218	67.28	–	–	–	–
Central	18	11	1,040	273	26.25	13	4,155	2,891	69.58	12	2,093	1,349	64.45
East	6	4	660	152	23.03	5	1,455	767	52.71	4	396	265	66.92
Northeast	17	13	1,647	517	31.39	13	3,856	2,305	59.78	11	1,156	893	77.25
North	17	10	1,209	349	28.87	13	4,443	3,090	69.55	8	729	537	73.66
South	14	11	1,598	496	31.04	13	3,475	2,044	58.82	11	1,520	907	59.57
Total	73	50	6,312	1,855	29.39	58	17,708	11,315	63.90	46	5,894	3,951	67.03

Source: Division of Epidemiology, Ministry of Public Health



Source: VD Division, Department of Communicable Diseases, MOPH.

Fig 1 Showing the proportion of all STD by age group during 1987–1990.

who have real husbands or regular sex partners. House wives involved in hidden promiscuous sexual behavior are very risky to their sex partners since they usually deny condom use due to theoretical respect and faithfulness to each other. Attention should be drawn to the need to prevent sexually transmissable diseases among these groups of people.

2.4 Impact of intensive, widespread campaigns regarding condom use

From Table 12, it may be concluded that

(a) The rate of condom use in high risk groups such as male clients with STD is low, being only 29% while the rate of condom use was 63% in open-case female sex workers and 76% in hidden-case female sex workers. These latter two figures serve as indicators of how better knowledge and interest in self protection has been received. There is, however, the currently unsolved problem that a certain number of hard-core male clients do not fully cooperate. These require strong and continuous education.

(b) In the north, central and eastern regions where AIDS prevalences are high, the rates of condom use are as yet lower than those of other regions so it is essential to launch a more intensive and stronger campaign there, since persons in these regions are known to transmit AIDS and STD to their sex partners, including housewives' practices which are leading to perinatal transmission.

DISCUSSION AND CONCLUSIONS

The results of health education campaigns, including distribution of knowledge, and accelerated efforts towards the prevention and control of AIDS and STD undertaken strongly and continuously as reported here do not have a clear-cut effect on the reduction of the number of STD patients. However, in the case of increasing numbers of female STD patients and all STD patients in the south, this may be due to better cooperation in reporting; alternatively the condom use rate is not high enough as shown in Table 12. Besides, the numbers of STD patients under 15 years of age are increas-

ing, up to 21%. An accelerated campaign of knowledge distribution and promotion of condom use in the target groups in particular has been undertaken (Weinstock *et al*, 1990; Fordyce *et al*, 1990; Feingold *et al*, 1990; Robbins *et al*, 1990) with cooperation from all parties concerned. Acceleration towards 100% condom use (Anonymous, 1991a) as well as acceleration of short and long term measures for the reduction and prevention of child prostitution (Anonymous, 1991c) has been laid down in guidelines given by the National AIDS Committee chaired by the Prime Minister (Anonymous, 1990b). Moreover, guidelines and measures agreed upon by the National Commission on Women's Affairs should be implemented as well compliance with other accelerated programs (Anonymous, 1988b).

A marked decrease in the rate of genital ulcer diseases indicates a sound positive impact of the campaign to prevent the spread of HIV infection via heterosexual transmission, so this intervention should be accelerated and widely applied to stop or retard the heterosexual transmission of AIDS.

The discovery of a high prevalence of promiscuous sexual behavior among housewives and females who are free love sexual players complicates the attempt to reduce the risk of STD infection in female sex workers at work since it is more difficult to identify cases primarily acquired from private sex partners (Ward *et al*, 1990). Health education campaigns for promotion of condom use, including interviews aimed to learn about individual sex partners, as well as physical examination, blood screening tests and counselling services given to risk groups of people, aim to prevent the disease transmission. In addition, acceleration of a campaign on safe sex counselling as well as provision and promotion of condom use have been undertaken, including advice on how to reduce sexual promiscuity (Tulizia *et al*, 1991).

Establishment and acceleration of a model to develop a concrete campaign against STD and AIDS from the various health agencies concerned has had a tremendous impact on the reduction of STD. All activities should be extended together with new interventions such as setting up anomymous blood testing clinics, extension of counselling services, setting up of STD clinics in community hospitals in large districts, using a coded system instead of the patient's name for those attending clinics and/or receiving counselling services. In addition, it is necessary to attempt to give up notification of the patient's names to the health authorities and to use only codes in AIDS cases in order to maintain confidentiality, in order to protect their human rights, to avoid ostracism which may be causing a negative impact among HIV infected of prevention and control programs on AIDS (Anonymous, 1988b).

The problem of rapid and serious spread of other types of STD needs to be minimized to reduce their role as co-factors enhancing the transmission of HIV. It is therefore urgent that health and non-health agencies concerned locally and internationally should cooperate to ensure stronger continuing mutual support for STD and AIDS prevention and control, in order to formulate more integrated strategies.

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