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■ **Epidemiological Fact Sheet**
on HIV/AIDS
and sexually
transmitted
diseases



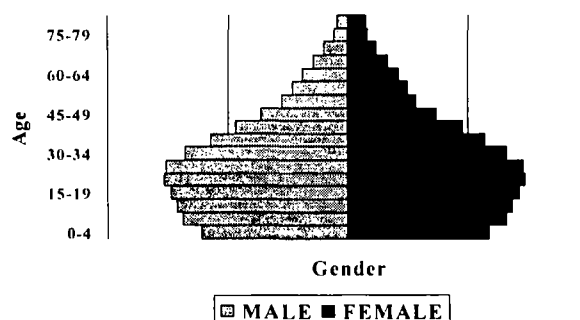
UNAIDS
UNICEF • UNDP • UNFPA
UNESCO • WHO • WORLD BANK



**World Health
Organization**

Country information

Population pyramid, 1997



UNAIDS/WHO Working Group on Global HIV/AIDS and STD Surveillance

Global surveillance of HIV/AIDS and sexually transmitted diseases (STDs) is a joint effort of WHO and UNAIDS. The UNAIDS/WHO Working Group on Global HIV/AIDS and STD Surveillance, initiated in November 1996, guides respective activities. The primary objective of the working group is to strengthen national, regional and global structures and networks for improved monitoring and surveillance of HIV/AIDS and STDs. For this purpose, the working group collaborates closely with national AIDS programmes and a number of national and international experts and institutions. The goal of this collaboration is to compile the best information available and to improve the quality of data needed for informed decision-making and planning at national, regional and global levels. The Epidemiological Fact Sheets are a first output of this close and fruitful collaboration across the globe.

Following a series of consultations, the working group and its partners established a framework standardizing the collection of data deemed important for a thorough understanding of the current status and trends of the epidemic, as well as patterns of risk and vulnerability in the population. Within this framework, the Fact Sheets collate the most recent country-specific data on HIV/AIDS prevalence and incidence, together with information on behaviours (e.g. casual sex and condom use) which can spur or stem the transmission of HIV. The data include prevention indicators developed by WHO's Global Programme on AIDS, which aim to measure trends in knowledge of AIDS, relevant behaviours, and a host of other factors influencing the epidemic. Additional indicators – for example, on care and support – will be included when available.

Not unexpectedly, information on all of the agreed-upon indicators was not available for many countries in 1997. However, the fact sheets do contain a wealth of information which allows identification of strengths in currently existing programmes and comparisons between countries and regions. The fact sheets may also be instrumental in identifying potential partners when planning and implementing improved systems.

The fact sheets can be only as good as information made available to the UNAIDS/WHO Working Group on Global HIV/AIDS and STD Surveillance. Therefore, the working group would like to encourage all programme managers as well as national and international experts to communicate additional information to the working group whenever such information becomes available. The working group also welcomes any suggestions for additional indicators or information proven to be useful in national or international decision making and planning.

Indicators	Year	Estimate	Source
Total Population (thousands)	1997	59,159	UNPOP
Population Aged 15-49 (thousands)	1997	34,433	UNPOP
Annual Population Growth			
% of Population Urbanized	1996	20	UNPOP
Average Annual Growth Rate of Urban Population	1980-1996	3	UNPOP
Net Migration Rate			
GNP Per Capita (US\$)	1995	2,740	World Bank
GNP Per Capita Average Annual Growth Rate	1985-1995	8	World Bank
Human Development Index Rank (HDI)		59	UNDP
Real GDP Per Capita Rank - HDI Rank		-8	UNDP
Gender Related Development Index Rank		39	UNDP
Gender Empowerment Measure Rank		52	UNDP
Human Poverty Index Value (HPI)		11.7	UNDP
% Population Economic Active			
Unemployment Rate	1993	2	ILO
Total Adult Literacy Rate			
Adult Male Literacy Rate			
Adult Female Literacy Rate			
Male Secondary School Enrollment Ratio	1990-1995	38	UNESCO
Female Secondary School Enrollment Ratio	1990-1995	37	UNESCO
Crude Birth Rate (births per 1,000 pop.)	1996	17	UNPOP
Crude Death Rate (deaths per 1,000 pop.)	1996	6	UNPOP
Maternal Mortality Rate (per 100,000 live births)	1990	200	WHO/UNICEF
Life Expectancy at Birth	1996	69	UNPOP
Total Fertility Rate			
Infant Mortality Rate (per 1,000 live births)	1996	31	UNICEF/UNPOP
Under Five Mortality Rate (per 1,000 live births)	1996	38	UNICEF/UNPOP
% Population Access to Safe Water			
% Population Access to Adequate Sanitation			

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Estimated number of people living with HIV/AIDS

In 1997 and during the first quarter of 1998, UNAIDS and WHO worked closely with national governments and research institutions to recalculate current estimates on people living with HIV/AIDS. These calculations are based on the previously published estimates for 1994 (WER 1995; 70:353-360) and recent trends in HIV/AIDS surveillance in various populations. Epimodel 2, a microcomputer programme originally developed by the WHO Global Programme on AIDS, was used to calculate the new estimates on prevalence and incidence of AIDS and AIDS deaths, as well as the number of children infected through mother-to-child transmission of HIV, taking into account age-specific fertility rates. An additional spreadsheet model was used to calculate the number of children whose mothers had died of AIDS.

The current estimates do not claim to be an exact count of infections. Rather, they use a methodology that has thus far proved accurate in producing estimates which give a good indication of the magnitude of the epidemic in individual countries. However, these estimates are constantly being revised as countries improve their surveillance systems and collect more information. This includes information about infection levels in different populations, and behaviours which facilitate or impede infection.

Adults in this report are defined as women and men aged 15 to 49. This age range covers people in their most sexually active years. While the risk of HIV infection obviously continues beyond the age of 50, the vast majority of those who engage in substantial risk behaviours are likely to be infected by this age. Since population structures differ greatly from one country to another, especially for children and the upper adult ages, the restriction of the term adult to 15-to-49-year-olds has the advantage of making different populations more comparable. This age range was used as the denominator in calculating adult HIV prevalence.

Estimated number of adults and children living with HIV/AIDS, end of 1997

These estimates include all people with HIV infection, whether or not they have developed symptoms of AIDS, alive at the end of 1997

Adults and children	780000		
Adults (15-49)	770000	Adult rate (%)	2.23
Women (15-49)	290000		
Children (0-15)	14000		

Estimated number of AIDS cases

Estimated number of AIDS cases in adults and children that have occurred since the beginning of the epidemic:

Cumulative no. of AIDS cases	260000
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Estimated number of deaths due to AIDS

Estimated number of adults and children who died of AIDS since the beginning of the epidemic:

Cumulative deaths	230000
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Estimated number of adults and children who died of AIDS during 1997:

Deaths in 1997	60000
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Estimated number of orphans

Estimated number of children who have lost their mother or both parents to AIDS (while they were under age 15) since the beginning of the epidemic:

Cumulative orphans	48000
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Estimated number of children who have lost their mother or both parents to AIDS and who were alive and under age 15 at the end of 1997:

Current living orphans	44000
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HIV Sentinel surveillance

This section contains information about HIV prevalence in different populations. The data reported in the tables below are mainly based on the HIV data base maintained by the United States Bureau of the Census and are a compilation of data from different sources, including national reports, scientific publications and abstracts. To provide for a simple overview of the current situation and trends over time, summary data are given by population group, geographical area (Major Urban Areas versus Outside Major Urban Areas), and year of survey. Studies conducted in the same year are aggregated and the median prevalence rates (in percentages) are given for each of the categories. The maximum and minimum prevalence rates observed, as well as the total number of surveys/sentinel sites, are provided with the median, to give the reader an overview of the diversity of HIV-prevalence results in a given population within the country.

The differentiation between the two geographical areas Major Urban Areas and Outside Major Urban Areas is not based on strict criteria, such as the number of inhabitants. For most countries, Major Urban Areas were considered to be the capital city and – where applicable – other metropolitan areas with similar socio-economic patterns. This distinction assumes that capital cities in many countries have specific characteristics related to the prevalence of higher risk behaviour and a concentration of HIV infections. The term Outside Major Urban Areas considers that most sentinel sites are not located in strictly rural areas, even if they are located in somewhat rural districts. Site/study-specific data on which the medians were calculated are printed in an annex at the end of this fact sheet.

HIV prevalence in selected populations in percent

Group	Area		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Pregnant women	Major Urban Areas	N_Sites							1	1	1		1	1	1	1
		Minimum							0.2	0.57	1.21		1.88	1.93	1.72	1.28
		Median							0.2	0.57	1.21		1.88	1.93	1.72	1.28
		Maximum							0.2	0.57	1.21		1.88	1.93	1.72	1.28
Pregnant women	Outside Major Urban Areas	N_Sites														75
		Minimum														0
		Median														1.71
		Maximum														5.5
Group	Area		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Sex workers	Major Urban Areas	N_Sites							1	1	1	1	1	1	1	1
		Minimum							9.7	7.46	17.82	8.59	13	9.61	6.89	13.02
		Median							9.7	7.46	17.82	8.59	13	9.61	6.89	13.02
		Maximum							9.7	7.46	17.82	8.59	13	9.61	6.89	13.02
Sex workers	Outside Major Urban Areas	N_Sites														58
		Minimum														0
		Median														25.81
		Maximum														57.14
Group	Area		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Injecting drug users	Major Urban Areas	N_Sites				1	1	1	1	1	1	1	1	1	1	1
		Minimum				1	20.2	39	36.7	45	41	23.06	37.5	31.36	31.43	33.11
		Median				1	20.2	39	36.7	45	41	23.06	37.5	31.36	31.43	33.11
		Maximum				1	20.2	39	36.7	45	41	23.06	37.5	31.36	31.43	33.11
Injecting drug users	Outside Major Urban Areas	N_Sites														53
		Minimum														0
		Median														41.425
		Maximum														100
Group	Area		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Military	Major Urban Areas	N_Sites							1	1	1	1	1	1		
		Minimum							1.2	2.79	3.34	3.23	2.9	2.7		
		Median							1.2	2.79	3.34	3.23	2.9	2.7		
		Maximum							1.2	2.79	3.34	3.23	2.9	2.7		
Military	Outside Major Urban Areas	N_Sites							4	4	4	4	4	4		
		Minimum							0.6	1.3	1.5	2.2	1.5	1.1		
		Median							1.05	2.2	2.85	3.1	2.85	2.4		
		Maximum							5.2	5.9	7.1	7.5	5.1	3.4		
Group	Area		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
STD patients	Major Urban Areas	N_Sites							1	1	1	1	1	1	1	1
		Minimum							2.6	5.57	8.68	8.77	9.88	8.17	6.88	6.79
		Median							2.6	5.57	8.68	8.77	9.88	8.17	6.88	6.79
		Maximum							2.6	5.57	8.68	8.77	9.88	8.17	6.88	6.79
STD patients	Outside Major Urban Areas	N_Sites														67
		Minimum														0
		Median														6.67
		Maximum														58.33

Assessment of epidemiological situation

Assessment of country epidemiological situation

HIV prevalence in Thailand was first detected in the late-1980s. Sentinel Surveillance was started in 14 provinces in 1989 and in all 73 provinces by 1990. This included blood donors, antenatal clinic attendees, IV drug users, male STD clinic patients, and female sex workers both in brothels (direct) and in massage parlors and other places (indirect).

In Bangkok, in late 1987, one percent of IV drug users were HIV positive. By the end of 1988, that rate had increased to 30 percent. Since 1988, HIV prevalence among IV drug users tested has remained between 20 and 45 percent both in and outside of Bangkok.

In Bangkok, HIV prevalence among sex workers tested (both direct and indirect combined) has ranged from 7 to 18 percent between 1990 and 1996. Since 1994, HIV prevalence in this group has declined slightly from 13 percent to 7 percent in 1997. Outside of Bangkok, HIV prevalence among sex workers tested (both direct and indirect) increased from 5 percent to 20 percent. HIV prevalence rates are highest in the northern provinces ranging from 16 to 57 percent among direct sex workers.

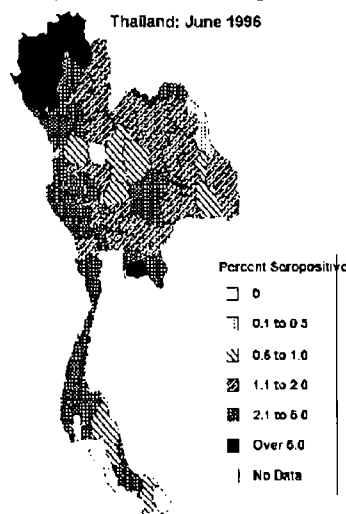
HIV prevalence among male STD clinic patients tested in Bangkok increased from 3 percent in 1990 to 10 percent in 1994. In 1997, 7 percent of male STD clinic patients tested in Bangkok were HIV positive. Outside of Bangkok, HIV prevalence among male STD clinic patients tested increased from 3 percent to 9 percent between 1990 and 1996. In 1997, the median rate decreased to 7 percent. Again, there is a significant north-south gradient with HIV prevalence over 40 percent among male STD clinic patients in the northern-most provinces.

Among antenatal clinic attendees tested in Bangkok, HIV prevalence increased from 0.2 percent in 1990 to 2 percent in 1994. In 1997, 1 percent of antenatal clinic women tested were HIV positive. Outside of Bangkok, HIV prevalence among antenatal clinic attendees increased from no infection detected in 1990 to two percent in 1994. HIV prevalence among this group has reached as high as 10 percent in provinces in the north. The median HIV prevalence among antenatal clinic attendees, however, remained around two percent in 1997.

Regional maps

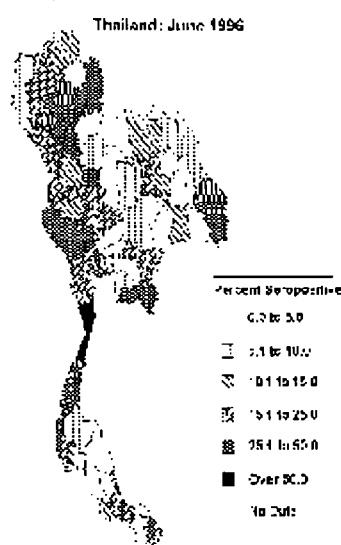
Seroprevalence of HIV-1 for Pregnant Women

Thailand: June 1996



Seroprevalence of HIV-1 for Sex Workers

Thailand: June 1996



Reported AIDS cases

AIDS cases by year of reporting

1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	Total	Unknown
0	0	0	0	0	0	0	0	0	0	73	126	532	1654	6648	13364	19405	20766	7445		70013	

Date of last report: 30-Sep-1997

AIDS cases officially reported to WHO. Due to gaps in diagnosis, underreporting, and reporting delays, officially reported AIDS cases represent only a portion of all cases in a country. Completeness of reporting varies substantially from one country to another, from less than 10% in some countries with fewer resources to more than 80% in most industrialized countries (please also compare with the section on estimates). Therefore, distribution by age, sex and modes of transmission may not be representative for all people living with AIDS in a given country.

AIDS cases by mode of transmission

Hetero: Heterosexual contacts.

Homo/Bi: Homosexual contacts between men.

IDU: Injecting drug use. This transmission category also includes cases in which other high-risk behaviours were reported, in addition to injection of drugs.

Blood: Blood and blood products.

Perinatal: Vertical transmission during pregnancy, birth or breastfeeding.

NS: Not specified/unknown.

Sex	Trans. group	<94	94/<95	1995	1996	1997	1998	Unkn.	Total	%
All	All	22397	19405	20766	7445				70013	100%
	Hetero	17241	15474	17322	6259				56296	80%
	Homo/Bi	232	275	316	80				903	1%
	IDU	1585	1258	976	291				4110	6%
	Blood	34	10	1	1				46	0%
	Perinatal	1453	886	1011	353				3703	5%
	Other known	0	0	0	0				0	0%
	Unknown	1852	1502	1140	461				4955	7%
Male	All	18233	15456	15900	5585				55174	100%
	Hetero	14816	12642	13637	4836				45931	83%
	Homo/Bi	232	275	316	80				903	2%
	IDU	1549	1239	962	286				4036	7%
	Blood	21	7	0	1				29	0%
	Other known	0	0	0	0				0	0%
	Unknown	1615	1293	985	382				4275	8%
Female	All	2621	2971	3717	1466				10775	100%
	Hetero	2335	2740	3547	1382				10004	93%
	IDU	36	19	14	5				74	1%
	Blood	13	3	1	0				17	0%
	Other known	0	0	0	0				0	0%
	Unknown	237	209	155	79				680	6%
NS	All	1543	978	1149	394				4064	100%
	Hetero	90	92	138	41				361	9%
	IDU	0	0	0	0				0	0%
	Blood	0	0	0	0				0	0%
	Perinatal	1453	886	1011	353				3703	91%
	Other known	0	0	0	0				0	0%
	Unknown	0	0	0	0				0	0%

1994/<1995 data reflect cumulative cases up to 1995

AIDS cases by age and sex

Sex	Age	<1994	94/<95	1995	1996	1997	1998	Unkn.	Total	%
All	All	22397	19405	20766	7445				70013	100%
	0-4	1427	853	939	311				3530	5%
	5-9	33	34	75	49				191	0%
	10-14	9	4	5	4				22	0%
	15-19	317	220	220	76				833	1%
	20-24	3200	2580	2613	828				9221	13%
	25-29	6127	5681	6096	2201				20105	29%
	30-34	4722	4482	4849	1827				15880	23%
	35-39	3059	2737	2882	1046				9724	14%
	40-44	1491	1284	1472	560				4807	7%
	45-49	753	701	762	253				2469	4%
	50-54	447	316	336	129				1228	2%
	55-59	340	229	252	72				893	1%
	60+	419	276	261	89				1045	2%
	NS	53	8	4	0				65	0%
Male	All	19081	16002	16584	5800				57467	100%
	0-4	753	441	508	157				1859	3%
	5-9	17	23	50	30				120	0%
	10-14	3	3	2	2				10	0%
	15-19	159	104	93	31				387	1%
	20-24	2482	1802	1705	482				6471	11%
	25-29	5469	4848	4921	1756				16994	30%
	30-34	4220	3894	4175	1538				13827	24%
	35-39	2794	2413	2493	886				8556	15%
	40-44	1361	1143	1244	458				4206	7%
	45-49	667	620	661	208				2156	4%
	50-54	407	268	290	111				1076	2%
	55-59	305	202	210	65				782	1%
	60+	400	234	229	76				939	2%
	NS	44	7	3	0				54	0%
Female	All	22397	3403	4182	1645				12546	100%
	0-4	1427	853	431	154				1671	13%
	5-9	33	34	25	19				71	1%
	10-14	9	4	3	2				12	0%
	15-19	317	220	127	45				446	4%
	20-24	3200	2580	908	346				2750	22%
	25-29	6127	5681	1175	445				3111	25%
	30-34	4722	4482	674	289				2053	16%
	35-39	3059	2737	389	160				1138	9%
	40-44	1491	1284	228	102				601	5%
	45-49	753	701	101	45				313	3%
	50-54	447	316	46	18				152	1%
	55-59	340	229	42	7				111	1%
	60+	419	276	32	13				106	1%
	NS	53	8	1	0				11	0%
NS	All	0	0	0	0				0	100%
	0-4	0	0	0	0				0	0%
	5-9	0	0	0	0				0	0%
	10-14	0	0	0	0				0	0%
	15-19	0	0	0	0				0	0%
	20-24	0	0	0	0				0	0%
	25-29	0	0	0	0				0	0%
	30-34	0	0	0	0				0	0%
	35-39	0	0	0	0				0	0%
	40-44	0	0	0	0				0	0%
	45-49	0	0	0	0				0	0%
	50-54	0	0	0	0				0	0%
	55-59	0	0	0	0				0	0%
	60+	0	0	0	0				0	0%
	NS	0	0	0	0				0	0%

Curable STDs

Control and prevention of sexually transmitted diseases (STD) have been recognized as a major strategy in the prevention of HIV infection and ultimately AIDS. Consequently, monitoring different components of STD control can also provide information on HIV prevention within a country. One of the cornerstones of STD control is adequate management of patients with symptomatic STDs. This includes diagnosis, treatment, and individual health education and counselling on disease prevention and partner notification.

Estimated incidence and prevalence of curable STDs

STDs	Incidence				Prevalence			
	Year	Male	Female	All	Year	Male	Female	All
Chlamydia trach.								
Gonorrhoea								
Syphilis								
Trichomonas								
Comments								
Source								

STD Incidence, men

Prevention Indicator 9: Proportion of men aged 15-49 years who reported episodes of urethritis in the last 12 months.

Year	Area	Age	Rate	N=
n/a				
n/a				
Comments:				
Sources:				

STD Prevalence, women

Prevention Indicator 8: Proportion of pregnant women aged 15-24 years attending antenatal clinics whose blood has been screened with positive serology for syphilis.

Year	Area	Age	Rate	N=
n/a				
n/a				
Comments:				
Sources:				

STD Case management (counselled)

Prevention Indicator 7: Proportion of people presenting with STD or for STD care in health facilities who received basic advice on condoms and on partner notification.

Year	Area	Age	Rate	N=
n/a				
n/a				
Comments:				
Sources:				

STD Case management (treatments)

Prevention Indicator 6: Proportion of people presenting with STD in health facilities assessed and treated in an appropriate way (according to national standards).

Year	Area	Age	Rate	N=
n/a				
n/a				
Comments:				
Sources:				

Health service indicators

HIV-prevention strategies depend on the twin efforts of care and support for those living with HIV or AIDS, and targeted prevention for all people at risk or vulnerable to the infection. These efforts may range from reaching out to vulnerable communities through large-scale educational campaigns or interpersonal communication; provision of treatment for STDs; distribution of condoms and needles; creating an enabling environment to reduce risky behaviour; voluntary testing and counselling; home or institutional care for persons with symptomatic HIV infection; and preventing perinatal transmission and transmission through infected needles or blood in health care settings. It is difficult to capture such a large range of activities with one or just a few indicators. However, a set of well-established health care indicators -- such as the percentage of a population with access to health care services; the percentage of women covered by antenatal care; or the percentage of immunized children -- may help to identify general strengths and weaknesses of health systems. Specific indicators, such as access to testing and blood screening for HIV, help to measure the capacity of health services to respond to HIV/AIDS-related issues.

Access to health care

Indicators	Year	Estimate	Source
% of Pop. with access to health services - total:			
% of Pop. with access to health services - urban:			
% of Pop. with access to health services - rural:			
Contraceptive prevalence rate (%):			
% of births attended by trained health personnel:			
% of pregnant women immunized against tetanus:	1995-1996	88	UNICEF
% fully immunized - Tuberculosis:	1995-1996	98	UNICEF
% fully immunized - DPT:	1995-1996	94	UNICEF
% fully immunized - Polio:	1995-1996	94	UNICEF
% fully immunized - Measles:	1995-1996	85	UNICEF
Proportion of blood donations tested:			
% of ANC clinics where HIV testing is available:			
HIV/AIDS Hospital Occupancy Rate (Days):			

Latex condoms are the only technology available that can prevent sexual transmission of HIV/STD. Persons needing protection in situations that carry risk should have consistent access to high quality condoms. National AIDS Programmes implement activities to increase both availability of and access to condoms. The two condom availability indicators below are intended to highlight areas of strength and weakness at the beginning and at the end of the distribution system so that programmatic resources can be directed appropriately to problem areas.

Condom availability (central level)

Prevention Indicator 2: Availability of condoms per capita in the country over the last 12 months (central level).

Year	Area	N	Rate
n/a			
Comments:			
Sources:			

Condom availability (peripheral level)

Prevention Indicator 3: Proportion of people who can acquire a condom (peripheral level).

Year	Area	N	Rate
n/a			
Comments:			
Sources:			

Knowledge and behaviour

Information on knowledge and behaviour related to HIV/AIDS is essential in identifying populations at risk for HIV infection. It is also critical in assessing changes over time as a result of prevention efforts. Guidelines and recommendations have been published in the publication: "Evaluation of a National AIDS Programme: A methods package. 1. Prevention of HIV infection. WHO/GPA/TCO/SEF/94.1 Geneva, 1994".

Knowledge of HIV-related preventive practices

Prevention Indicator 1: Proportion of people citing at least two acceptable ways of protection from HIV infection.

Year	Area	Age group	Male	Female	All
n/a		15-19			
n/a		20-24			
n/a		25-49			
n/a		15-49			

Comments:

Sources:

Reported non-regular sexual partnerships

Prevention Indicator 4: Proportion of sexually active people having at least one sex partner other than a regular partner in the last 12 months.

Year	Area	Age group	Male	Female	All
1990	All	15-19	88.2	15.4	
1990	All	20-24	56.1	4.9	
1990	All	25-39	26.8	2.3	
1990	All	40-49	15.2	1.1	
1990	All	15-49	7.4	3.1	

Comments:

Sources: KABP/Behavioural Studies - GPA, 1992

Reported condom use in risk sex (gen pop)

Prevention Indicator 5: Proportion of people reporting the use of a condom during the most recent intercourse of risk.

Year	Area	Age group	Male	Female	All
n/a		15-19			
n/a		20-24			
n/a		25-49			
n/a		15-49			

Comments:

Sources:

Knowledge and behaviour

Ever use of condom

Percentage of people who ever used a condom.

Year	Area	Age group	Male	Female	All
n/a		15-19			
n/a		15-49			
n/a		20-24			
n/a		25-49			

Comments:

Sources:

Median age at first sexual intercourse

Median age of people at which they first had sexual intercourse.

Year	Area	Age group	Male	Female	All
1987		25-49			
1987	All	20-24		21	
1987	All	45-49		19.7	

Comments:

Sources:

Adolescent pregnancy

Percentage of teenagers 15-19 who are mothers or pregnant with their first child.

Year	Area	Age group	Rate	N
n/a		15		
n/a		15-17		
n/a		16		
n/a		17		
n/a		18		
n/a		18-19		
n/a		19		

Comments:

Sources:

Sources

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TOWARD REDUCING THE SPREAD OF HIV IN NORTHEASTERN THAI VILLAGES: EVALUATION OF A VILLAGE-BASED INTERVENTION

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Kuyyakanond, Peter Miller, and Melissa
Haswell-Elkins**

This paper presents results of the evaluation of an intervention designed for northeastern Thai villages and particularly for village women. The intervention was based on established principles of behavior change, social learning theory, and community health promotion, and it was grounded in elicitation research. A total of 600 women and 479 men from 12 villages participated in the evaluation which used data collected from face-to-face knowledge, attitude, practices (KAP) surveys, focus groups, and village meetings in a quasi-experimental pre- and post-control group design. Eight of the nine outcome goals set for the intervention were achieved with significant increases in married women taking the initiative in reducing the risk posed to them by the sexual activities of their husbands.

Thailand is one of the focal points of the AIDS epidemic in Asia. At the end of 1992, the Ministry of Public Health estimated the cumulative total of persons with HIV infection in Thailand to be 350,000 to 500,000. Based on sentinel seroprevalence studies, it is projected that 16,000 to 30,000 people infected with HIV will develop AIDS annually from 1993 to 1997. Assuming no significant changes in behavior, the Thai Working Group, comprising representatives from various government and nongovernment offices and the World Health

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Organization, projected 2 to 4 million cumulative HIV infections by the end of this century (all figures based on AIDS Division, 1993). Originally, the northern and central areas had the highest rates of infection (Weniger et al., 1991), with considerably lower rates in Thailand's most populated and poorest region, the northeast. Recent reports, however, demonstrate that HIV has also become well established in this region (Public Health Office, 1993).

The Thai government has been active in fighting the spread of AIDS through education (see AIDS Division, 1991), and has collaborated with nongovernment organizations to develop prevention programs for various subsections of the Thai population. The primary risk groups and situations addressed in these programs have been commercial sex workers; young men and men in occupations associated with high use of commercial sex workers, such as the military and truck driving; and intravenous needle users. Rural villages, and particularly married village women, have not figured prominently in program development or delivery because they have been considered at relatively low risk for HIV infection. However, the growth in prevalence of HIV infection among pregnant women in the city of Khon Kaen, a major northeastern center, from 0.5% in 1992 to greater than 2.0% in 1993 (Public Health Office, 1993) demonstrates that the northeast, including northeastern women, may soon see infection rates similar to those in the remainder of the country.

This paper reports on the evaluation of an AIDS education and prevention program targeting rural northeastern villages, and particularly village women, completed in 1994 in Khon Kaen Province, Thailand. At the time the project was initiated, the information about HIV and AIDS available in northeastern villages was only through the general mass media, particularly television and radio. No campaigns were available in the local Isan dialect or reflective of northeastern lifestyles, belief systems, or risk situations and profiles. Northeastern villages and village women were set as the principal target for this intervention in an attempt to curb the spread of HIV in this region.

HIV PREVENTION PROGRAM

DESIGN

Baseline elicitation research was conducted using structured one-to-one knowledge, attitudes, practice (KAP) interviews and focus group discussions between November 1991 and February 1992 in villages in Khon Kaen province. The baseline results were reported in an earlier article published in this journal (Maticka-Tyndale, Kiewying, et al., 1994). From these were identified (a) areas of misinformation about HIV transmission, risk, and prevention; (b) the major avenues and contexts of HIV transmission; (c) dominant community norms and beliefs associated with these avenues and contexts and with efficacious methods of reducing the likelihood of HIV transmission; (d) modes of communication within villages relevant to the identified avenues and contexts of risk and risk reduction; and (e) personal and environmental factors that were supportive of or barriers to efficacious risk reduction. Using the principals of social learning theory (e.g., Perry, Baranowski, & Parcel, 1991) and of community development (Rothman & Tropman, 1987), the information collected in the baseline research was used to design an AIDS education and prevention program. The

precise steps used to design the program and their relationship to the elicitation results were fully reported in an earlier article (Maticka-Tyndale, Haswell-Elkins, et al., 1994).

PROGRAM OVERVIEW

The principal risk situation identified during elicitation research was men engaging in extramarital sexual activity, most specifically with commercial sex workers. The intervention consequently targeted reducing risk of HIV transmission in this context. The intervention consisted of a three-part village-based strategy:

1. An agreement meeting between intervention team members and village leaders to establish a partnership in bringing the intervention strategy to the village and to train volunteer leaders from the village to act as facilitators for community action.
2. A broadcast of a five-part (5-day) motivational audio-drama over village loudspeakers accompanied by 10 posters depicting each day's major issues and acting as daily advertisements. The plot revolved around married men engaging commercial sex workers, risk reduction within this context, and dialogues between women, between spouses, and between men around this activity.
3. A village meeting to begin village discussion of "AIDS in the village" and to plan further village strategies.

To increase the likelihood of sustainability of the program beyond the efforts of the research project, the intervention plans and evaluation results were presented at the provincial governor's office, the office of the chief provincial medical officer, and to a local nongovernment organization working in the region. All three agreed to provide support for the strategies set by villages through district and subdistrict health and community development infrastructures and have also provided support for more widescale dissemination of the program in several provinces in northeastern Thailand (see Elkins et al., 1996).

PROGRAM COMPONENTS

Community Involvement and Development

Prevention strategies mounted by government organizations had targeted specific subgroups in the community and were implemented only for these subgroups. Originally the research team felt they would target village women in a similar way; however, in focus group discussions women placed their own concerns and risks into the context of their village. When focus group leaders asked women about the form and content of programs that they felt would be most effective and helpful for them, women expressed the desire that programs be designed for the village as a whole. They did not feel that programs for women alone would help them. They wanted the consciousness of all villagers to be raised and the entire village to stand together on the issue of HIV and AIDS.

Essentially, the women were calling for community involvement and development around HIV and AIDS prevention.

Community involvement was fostered through the initial agreement meeting and village meeting. Baseline research identified an agreement meeting involving village leaders as a necessary first step prior to undertaking any programs within the villages. These meetings involved village opinion leaders, identified in the baseline research, from the very first stage of the intervention. These leaders remained key players throughout the program and were active in helping formulate and carry out village strategies. They ensured that the second part of the strategy, broadcast of the audio-drama, was completed in an effective manner.

The village meeting extended involvement beyond leaders to the entire village. All villagers were encouraged to attend this meeting, which was led in a style that encouraged villagewide and small-group discussion of the issues raised in the motivational drama, their relevance to the village, additional concerns that villagers had with respect to HIV and AIDS, and ways in which the village could foster activities and policies that would support risk reduction. These meetings served to bring AIDS, HIV transmission, and prevention into the arena of public discourse, provided a vehicle for increased interpersonal communication about the issues, and encouraged grassroots ownership and planning of strategies to reduce the spread of HIV.

Audio Drama

Though a large majority of villages already had accurate information about HIV transmission and prevention and were aware of the risk related to men engaging prostitutes at the initiation of the project, the risk had not been personalized, even among women who identified their husbands as involved with prostitutes (Maticka-Tyndale, Kiewying, et al., 1994). Villagers tended to perceive of HIV and AIDS as something that existed outside the northeast and, most particularly, outside their villages. This led the research team to conclude that the risk of HIV and AIDS had to be "made real" to the villagers before any effective risk reduction programs could be initiated.

Stories and local dramatic presentations were suggested by villagers as a "good way to learn about and remember things." In baseline research it was the stories women had heard about people exposed to HIV that formed the base of their knowledge and perceptions. Women often calculated their own risk by comparing themselves and their life circumstances to those of characters in stories.

For the intervention, a motivational story was developed about three prototypical married couples from a northeastern village who modeled desirable and undesirable Thai responses to risk situations, as elaborated in baseline research. The risks and risk reduction strategies in the story reflected the scenarios portrayed by women in baseline focus group discussions (for details see Maticka-Tyndale, Kiewying, et al., 1994; Maticka-Tyndale, Haswell-Elkins, et al., 1994). Several risk reducing activities, each a distinct, small step towards effective self protection, were portrayed in the story. The drama closed with a recognition of the need for focusing the community's attention on the problem of AIDS.

The village loudspeaker system, commonly used by village leaders to

broadcast both news and entertainment, was the chosen vehicle for delivering the story to villages. The story was broadcast to the entire village as an audio-drama over the loudspeaker system in several short segments (15 to 20 minutes each) over 5 consecutive days. Each day's episode was designed with a "cliff-hanger" ending to stimulate interest, sustain attention, spread enthusiasm between segments, and to keep the issue of HIV and AIDS in the forefront of community attention over the entire drama period. Ten posters were also produced to provide a visual image of the characters and to demonstrate the major dilemmas in each segment with a few words. Each drama segment had a minimal amount of substantive information, with this information directly relevant to the lives of northeastern villages. The segments were designed to be entertaining, used local styles of communication and humor, were not dependent on literacy skills, and were broadcast at times that facilitated maximum exposure in the village. Appropriate timing for the broadcasts, usually in the early morning and evening, was determined in collaboration with village leaders at the agreement meeting. Trucks bearing large painted signs, commonly used in advertising upcoming entertainment, broadcast music and announcements to advertise the audio drama and to reinforce the central message of each day's episode.

OUTCOME GOALS

Because village women were the principal target for the intervention, the audio-drama was developed from KAP and focus group data obtained from women in the elicitation phase of the project. However, based on elicitation results, it was decided to produce a program for the entire village, rather than one exclusively for women. Consequently, outcome goals were set not only for women but also for men and for the village as a unit. Seven preliminary and two final goals were set for the intervention program. Preliminary goals are those which mark the early steps required in the progression toward effective risk-reducing behaviors (see Maticka-Tyndale, Kiewying, et al., 1994, and Maticka-Tyndale, 1995, for an elaboration of goals and steps). These were specifically addressed in the intervention. Final goals are those that can be expected to have a direct impact on the likelihood of transmission of HIV; however, they generally include behaviors that are more complicated and difficult to initiate and maintain and are dependent on achieving the preliminary goals. Though it was hoped that some change in the behaviors addressed in final goals might be achieved, it was expected that such changes required a longer time and more sustained intervention efforts than those evaluated in this paper. The preliminary goals included: (a) villager identification of the program as a major source of information about HIV and AIDS; (b) increased awareness of the risk posed to husbands and wives through husbands' extramarital sexual activities; (c) increased reporting, by women, that they had initiated some actions to decrease the risk posed to them by their husbands' extramarital sexual activities; (d) increased communication about HIV and AIDS between villagers in general and between husbands and wives in particular; (e) villager identification of characters and scenarios from the audio-drama with which they personally identified; (f) village identification of HIV and AIDS as a community concern; and (g) villages setting their own strategies for addressing the threat posed by

HIV and AIDS to their village. The first five outcomes were evaluated using KAP surveys and focus groups. The last two used documentation from village meetings and activities planned and continued beyond the village meetings. The two final goals were a shift toward more effective ways to reduce risk on the part of women and increased condom use by men. Both were evaluated using KAP surveys and focus groups.

METHODOLOGY

PROJECT PHASES

A quasi-experimental, naturalistic design was used to evaluate the intervention designed in this project. Project phases are portrayed in Table 1.

SAMPLING

Two- and four-stage age-stratified random sampling was used. For purposes of evaluation, a total of six villages were randomly selected from the 1,892 villages in Khon Kaen province. Another six villages were randomly selected from those in a neighboring province to act as controls in the postprogram phase of data collection. It should be noted that the provinces in this region share a common history, social structure, and culture. Provincial boundaries represent political rather than cultural or social divisions. The villages from the neighboring province did not differ from those in Khon Kaen province on any demographic characteristics. Equal numbers of married men and women between 16 and 30 years of age and between 30 and 49 years of age were randomly selected using data from an every-household demographic survey as the sampling frame. A further subsample of each age and gender group was selected for participation in focus groups.

Procedures used to collect data and obtain informed consent are described in detail in earlier papers (Maticka-Tyndale, Kiewying, et al., 1994; Maticka-Tyndale, Haswell-Elkins, et al., 1994). Eighty percent of selected women completed the data collection procedure. The dominant reason given by women for not participating was that they were out of the village for purposes of work, health, or family commitments on the survey day. On average, only half of the men chosen for the sample were in the villages when the research team arrived. This had been a particularly poor season for farming and many village men had left to participate in wage labor elsewhere in Thailand. To achieve an adequate

Table 1. Program Evaluation Design

	Pretest & Posttest Villages	Control Villages
Number of villages:	6	6
Preprogram data collection:		
KAP surveys	X	
Intervention	X	
Postprogram data collection:		
KAP surveys	X	X
Focus groups	X	

sample size for analysis, the men's sample was expanded to include all men resident in the selected villages at the time of the study. Eighty percent of resident men participated in the study. As with women, those who did not participate gave absence from the village for work as their reason. Results from men must take into consideration the absence of the most mobile segment of this population.

DATA COLLECTION PROCEDURES

Face-to-face structured interviews and focus groups were conducted by specially trained teams of nurses (women) and community workers (men).

KAP Interviews

The basic KAP survey was a modified version of that used by Middlestat, Zucker, Ramah, and Eustace (1991) in the Caribbean. Questions developed and tested by VanLandingham (1993) for use in surveys with men in northern Thailand were added for interviews with men. These explored prostitute visitation and condom use with a variety of different partners. The instrument was administered as a structured face-to-face interview consisting predominantly of open-ended questions. Open-ended questions were used to minimize guessing and response acquiescence and to assess "top-of-the-head" knowledge and perceptions, that is, that which first comes to mind when a question is asked. Respondents were prodded for more than one answer to each question, with all answers recorded. Responses were coded in a dichotomous format indicating whether each was or was not mentioned. The KAP was designed in English and translated to the Isan dialect by bilingual (English-Isan) members of the research team. The Isan version was reviewed and compared to the English version by other members of the research team and then piloted using women and men attending outpatient clinics at the Khon Kaen University Hospital. KAP interviews lasted between 20 and 45 minutes.

Focus Groups

Twelve focus groups were held with women and 12 with men in the final phase of data collection. Groups were divided along age lines to maximize homogeneity of life-cycle stages and experiences within each group. The primary function of focus groups was to elicit more detailed information and explanations for responses and to tap individual and local ways of establishing congruence and coherence between information, beliefs, perceptions, and local norms and practices in the areas under investigation. At the postprogram phase, focus group discussions also elaborated on participants' responses to the intervention. All sessions were tape-recorded with the permission of participants. No personal, identifying information was included on the tapes. Sessions lasted approximately 45 to 90 minutes.

VILLAGE SAMPLE

Six hundred women and 479 men from 12 villages completed surveys, and nearly 100 women and men also participated in focus groups (Table 2). One

Table 2. Data Used in Evaluation Analysis

	Women			Men		
	Number of Villages	Number of Focus Groups	N for KAP Surveys	Number of Villages	Number of Focus Groups	N for KAP Surveys
Preprogram	6*	0	205	6*	0	185
Postprogram	6*	12	188	6*	11	151
Control	6	0	207	6	0	143
Total	12*	12	600	12*	11	479

*The same six villages were in preprogram and postprogram test groups.

focus group with men could not be used in analysis because of poor audiotape quality.

DATA QUALITY CHECKS

Data from surveys were examined for contradictory patterns to assess the reliability of responses. Fewer than 1% of the responses in comparisons across eight pairs of questions proved contradictory (e.g., reporting condom use but responding that condoms have never been seen). Villages were compared using chi-square analysis to confirm the absence of a difference in responses across villages.

Focus group transcripts were translated to English under the direction of a consultant from the Modern Language Department at Khon Kaen University fluent in English, Thai, and Isan. The reliability of translations was confirmed by calculating the agreement between two independent translations for a random selection of passages including 300 lines of transcript. Differences in translation sufficient to suggest a difference in interpretation were present in 2% of the lines (6 lines). Thematic analysis was used to bring together responses, discussions, explanations, and elaborations in the areas covered in interviews and focus groups. Only interpretations confirmed in at least two different focus groups were retained in the final analysis.

EVALUATION STRATEGY

An ideal test of the project intervention requires the absence of other programs in both test and control villages. In field research, however, such ideal conditions may not be present. By the time of postprogram data collection, several HIV and AIDS programs were circulating among villages in this region. Inquiries in all villages participating in the final phase of data collection led to the conclusion that most villages had participated in programs other than the one designed for this project. These included videos, training sessions for various village representatives, and other programs. Because of the diversity and overlap between programs, and their presence across all village groups, it was impossible to fully test the separate effect of the intervention designed for this project, without any influence from other programs, or even to fully identify other influences. Consequently, conclusions about the impact of the project intervention were based on an evaluation of its influence against the background of other programs. A conservative approach was taken to testing the project intervention. In comparing survey results, response patterns in postprogram

villages had to differ significantly from control *and* preprogram village responses for a conclusion of a project-intervention effect. Where postprogram and control patterns were not significantly different from each other but were from preprogram patterns, the effect of the project intervention was considered to have an effect, but not one that differed from that of other programs circulating in northeastern villages at this time. Despite the presence of other intervention programs in these villages, differences between both test and control, and preintervention and postintervention results can safely lead to the conclusion that the designed intervention is associated with an effect. However, the presence of other interventions does not permit us to draw any conclusions about what precisely may have resulted in this effect.

RESULTS

DEMOGRAPHIC CHARACTERISTICS OF SAMPLE

Village populations ranged from 260 to just over 900 individuals, with a mean of 722 ($SD = 200$). Villages were a mean distance of 77 km. ($SD = 30$) from the provincial capital. Between 50% and 78% of households in each village had a television.

The villages and participants were typical of northeastern rice farmers. The average age of participating women and men was the early 30s, with women reporting a mean of two to three children each. The vast majority had 4 to 6 years of formal schooling and identified their occupation as farmer during the wet season. Approximately one third of the villagers kept this occupational identification for the dry season, with one third of the women and one quarter of the men shifting to "day labor." It is expected that the percentage of men who were day laborers would have been higher if the migrants had been in the villages at the time of research. The high level of homogeneity in education, family composition and size, and occupation supported the aggregation of data across villages and provided few criteria for satisfaction and comparison in data analysis.

PRELIMINARY GOAL 1: INFORMATION ABOUT HIV AND AIDS

Table 3 provides a comparison of the main sources of information about HIV and AIDS reported by men and women in each of the village groups, and a scale score summarizing levels of knowledge. In postprogram villages, village programs were as often cited as television, and more often than radio, as the main source of information. The difference between the project intervention and other programs circulating in northeastern villages is evident in responses to the question on primary sources of information. The focus of most village programs has been on training village leaders who are then available to other villagers as resource people and can participate in providing specific AIDS programming for select segments of the village population. The project intervention, while including a meeting and training session with village leaders as a first step, also involved *all* villagers in the intervention through the audio-drama and village meeting. This difference is reflected in results in Table 3. In control villages, 53% of respondents mentioned village leaders as their primary source

Table 3. Knowledge and Primary Sources of Information About AIDS

	Percent Reporting			Evaluation Comparisons			
	Village Group			Pre-Post		Postcontrol	
	Preprogram	Postprogram	Control	Chi-square	<i>p</i>	Chi-square	<i>p</i>
Women							
(<i>N</i>)	(205)	(188)	(207)				
Primary source of information about AIDS:							
Village program	8%	89%	46%	261.976	.000	83.663	.000
Television	79%	86%	92%	3.460	.060	3.204	.073
Radio	64%	63%	56%	0.055	.815	2.117	.146
Friend, neighbor	33%	18%	23%	11.613	.000	1.560	.212
Village leaders	2%	12%	20%	16.206	.000	4.235	.038
Mean knowledge score	7.14	10.22	9.66				
Men							
(<i>N</i>)	(185)	(151)	(143)				
Primary source of information about AIDS:							
Village program	28%	75%	58%	111.916	.000	27.393	.000
Television	87%	87%	94%	0.063	.801	4.301	.038
Radio	70%	71%	64%	0.014	.906	1.743	.187
Friend, neighbor	28%	34%	22%	1.558	.212	5.234	.022
Village leaders	13%	15%	40%	0.179	.672	24.230	.000
Mean knowledge score	6.94	8.55	9.08				

All *df* = 1.

of information and 51% the village program. These percentages are 13% and 83%, respectively, in postprogram villages.

A knowledge score ranging from 0 to 14 was calculated by summing the correct answers to a series of knowledge-based questions such as: Is it possible to tell from someone's appearance whether they are carrying AIDS? Is there a cure for AIDS? How can AIDS be spread? (two answers accepted; correct answers scored 1). Postprogram scores were significantly higher than preprogram for both men and women (women: $F(2, 587) = 663.68, p < .0001$; men: $F(2, 476) = 22.694, p < .0001$). However, the results of a least squares difference post hoc analysis demonstrated significant differences only between postprogram and control villages for women. Consequently, these gains in knowledge can only be attributed to the project intervention for women.

We can conclude that villagers identified the programs as a major source of information. The project intervention improved knowledge for women, though not more than other interventions did for men.

PRELIMINARY GOAL 2: RISK PERCEPTION

Responses to questions addressing degree and sources of risk are reported in Table 4. There was a significant positive association between the program and women's classification of their own risk, but there was no significant association for men. There were no shifts in sources of risk for either men or women, with the exception of risk from casual contacts, which was lowest in postprogram villages. In all villages, women most often associated their own risk with their husband's activity with prostitutes. This was the predominant view of men as well.

In focus groups, men's discussions of risk focused on prostitution. Men

Table 4. Perception of Level and Source of Risk

	Percent Reporting			Evaluation Comparisons			
	Village Group			Pre-Post		Postcontrol	
	Preprogram	Postprogram	Control	Chi-square	p	Chi-square	p
Women							
Are you personally at risk? ^a							
(N)	(205)	(188)	(207)				
No	61%	43%	59%	10.856	.01	8.338	.010
Yes	36%	54%	40%				
Uncertain	3%	3%	1%				
Reason/source of risk: ^b							
(N)	(93)	(120)	(104)				
Husband has sex with prostitutes	57%	54%	51%	0.065	.799	0.230	.632
Casual contacts	34%	7%	14%	26.437	.000	2.904	.088
Husband's level of risk: ^c							
None	*	31%	44%			11.112	.010
Little		38%	34%				
Much		14%	6%				
Don't know		17%	16%				
Believed reason/source of risk for husband: ^b							
(N)		(130)	(116)				
Sex with other women	*	32%	17%			6.907	.009
Casual contacts		1%	16%			19.837	.006
Men							
Are you personally at risk? ^a							
(N)	(185)	(151)	(143)				
No	67%	80%	82%	12.749	.010	2.870	.238
Yes	22%	18%	18%				
Uncertain	11%	2%	0				
Reason/source of risk: ^b							
Sex with prostitutes	41%	53%	46%	1.239	.266	0.287	.592
Casual contact	30%	23%	46%	0.385	.535	3.236	.072

^adf = 2 for chi-squares.^bdf = 1 for chi-squares.^cdf = 3 for chi-squares.

*Data not collected.

produced a detailed gradation of perceived risk based on different types of prostitution. For some men, all women were a source of risk: "Women are where the diseases are all collected together." For most, however, there were distinctions made between different types of women, with local women most typically seen as lower risk than women from the "outside": "In this village, there are only small risks [posed by going to village prostitutes]. But when you go to brothels outside, *then* there are risks." Women whose primary source of income was something other than sex were also seen as posing less of a risk than those who worked as prostitutes: "There are the women in the village who will do it [have sex with various men], you pay them to help them out, but they aren't working at it [prostitution] . . . there isn't much risk there." Highest risk was consistently ascribed to women visiting villages during festivals or at cattle markets. The risk here was associated with the context of the sexual encounter rather than any characteristic of the woman: "Women at festivals have many

men, one right after the other. They cannot even wash between. These are the great risks."

Based on these data it appears that the project intervention achieved its goal of focusing women's attention on the potential influence of prostitution on their own risk level. Though over half of women identified husbands going to prostitutes as a source of risk prior to the intervention, after the program, more women rated themselves at risk, their husbands' level of risk as higher and as related to visiting prostitutes. Though men's KAP responses did not demonstrate any changes, it is clear from focus groups that more detailed research on men's views and sexual activities outside of marriage require further study.

PRELIMINARY GOAL 3: WOMEN'S SELF PROTECTION

A high proportion of women (86%) considered it possible for a wife to protect herself against potential infection by her husband prior to the project intervention, with condom use with husbands the primary form of self protection. After the intervention, most women in both control and intervention villages advocated a more assertive position toward their husbands' behavior. Women shifted from condom use with husband to either telling a husband not to go to prostitutes, or telling him to use a condom with prostitutes. The former shift was significantly greater in postprogram than in control villages. This provides some slight evidence that the project intervention focused women's attention on two of the preventive strategies presented in the audio-drama: telling a husband not to go to prostitutes and encouraging a husband to use condoms with prostitutes. The latter strategy also received support in women's responses to a question about the reasons for condom use. A significant proportion of women in intervention villages shifted their response from the more technical "disease or pregnancy prevention" to "for husbands to use when they have sex with other women." Women in control villages did not demonstrate the same shift. Both strategies were discussed extensively in focus groups where many women elaborated on encouraging condom use by husbands when visiting prostitutes, referring to this as wise and rational, reflecting the "cool heart" that is so highly valued in Thai culture (Klausner, 1987). Other women, however, saw this strategy as sending a "mixed message" to husbands and preferred letting them know that going to a prostitute was not acceptable. Focus group discussions and preintervention data also supported the conclusion that though using a condom with one's husband was technically the safest option, it was not one that women were able to carry out. Few women reported using condoms with husbands for other than contraception. Those who, in focus groups, described such use were clear that this was always temporary and related to specific instances, thus not affording the necessary protection from HIV (Table 5).

Women were asked two questions related to obtaining condoms: where condoms could be obtained and whether they were embarrassed to get condoms. All women volunteered that the local health station or clinic was a place where free condoms were available. Availability, however, did not guarantee that women would access condoms, particularly if obtaining them required a woman to make a specific request. Over 40% of women in preprogram and control villages indicated they would be too embarrassed to request a condom at these locations. This decreased to 24% in postprogram villages, providing

Table 5. Married Women's Self-Protection—Women Only

	Percent Reporting			Evaluation Comparisons			
	Village Group			Pre-Post		Postcontrol	
	Preprogram	Postprogram	Control	Chi-square	p	Chi-square	p
If a married woman thinks she is at risk because of her husband can she protect herself?							
(N)	(205)	(188)	(207)				
Yes	86%	85%	79%	1.727	.420	3.253	.200
How can she protect herself?							
(N)	(176)	(162)	(163)				
Tell husband not to go to prostitutes	19%	89%	64%	214.00	.000	25.19	.000
Tell husband to use condoms with prostitutes	13%	29%	26%	12.190	.000	0.556	.523
Use condom with husband	79%	0	1%	218.760	.000	—	—
What are condoms for?							
(N)	(205)	(188)	(207)				
Prevent disease	96%	77%	80%	31.858	.000	0.755	.380
Contraception	62%	31%	40%	38.833	.000	3.306	.070
Husband to use when sex with other women	14%	24%	16%	6.496	.010	3.973	.05
Too embarrassed to get condoms	41%	24%	44%	11.558	.000	16.067	.000

All *df* = 1.

evidence that the attention given to condoms in the drama and village meetings increased women's comfort and ability to request condoms.

We can conclude that more women were prepared to take preventive action after the project intervention both with respect to encouraging husbands to decrease the risk they posed to their wives and in ability to obtain condoms themselves.

PRELIMINARY GOAL 4: COMMUNICATION WITH OTHERS: AIDS AND CONDOM TALK

Two areas of AIDS-related communication were explored, talk about condoms and talk about AIDS. Reviewing the results reported in Table 6, it is apparent that the project intervention was associated with significantly higher percentages of men and women reporting communication with others, and in particular with spouses on both topics. More women also reported communication with other women in postprogram villages. Not only was the project intervention associated with more talk but also with a higher percentage who reported that they would likely discuss these matters with husbands in the future.

We can conclude that communication about condoms and AIDS was higher in postprogram villages.

PRELIMINARY GOAL 5: VILLAGER RESPONSES TO THE AUDIO-DRAMA

A series of questions was asked in postprogram villages to assess how villagers responded to the audio-drama. These included questions about villager identification with, endorsement of, and liking of drama characters, as well as

Table 6. Reported Communication About AIDS and Related Matters

Percent Reporting				Evaluation Comparisons			
Village Group				Pre-Post		Postcontrol	
	Preprogram	Postprogram	Control	Chi-square	p	Chi-square	p
Women							
(N)	(205)	(188)	(207)				
Have talked to others about: ^a							
Condoms	32%	54%	37%	90.168	.000	11.647	.000
AIDS	54%	99%	61%	106.931	.000	88.243	.000
Number of different types of people talked to about AIDS: ^b							
1	83%	17%	27%	172.279	.000	6.054	.112
2	14%	54%	46%				
3	3%	25%	21%				
≥ 4	0	4%	5%				
Talked to husband about: ^a							
Condoms	43%	68%	48%	24.902	.000	16.571	.000
AIDS	43%	86%	61%	260.487	.000	1.720	.190
Who talked to about AIDS: ^a							
Other women	47%	75%	58%	32.511	.000	13.420	.000
Daughter(s)	2%	6%	7%	4.063	.040	0.138	.710
Son(s)	5%	5%	8%	0.040	.840	0.931	.340
Likelihood of talking to husband about: ^c							
Condoms							
unlikely	48%	23%	36%	26.619	.000	7.124	.030
likely	47%	73%	61%				
AIDS:							
unlikely	26%	15%	18%	9.226	.010	0.631	.730
likely	69%	82%	80%				
Men							
(N)	(185)	(151)	(143)				
Have you talked to others about: ^a							
Condoms	56%	71%	67%	8.180	.000	0.479	.490
AIDS	68%	73%	78%	4.057	.039	0.890	.339
Number of different types of people talked to about AIDS: ^b							
1	25%	22%	23%	5.590	.150	24.959	.000
2	27%	26%	41%				
3	25%	31%	19%				
≥ 4	21%	22%	10%				
Talked to wife about: ^a							
Condoms	62%	65%	47%	0.295	.620	7.086	.010
AIDS	66%	78%	74%	3.872	.050	0.422	.520
Who talked to about AIDS: ^a							
Other men	87%	89%	90%	0.163	.690	0.132	.720
Daughter(s)	6%	14%	4%	3.580	.060	6.463	.010
Son(s)	15%	15%	7%			4.110	.040
Likelihood of talking to wife about AIDS: ^c							
unlikely	23%	7%	8%	19.729	.000	3.348	.190
likely	68%	82%	88%				

^adf = 1.^bdf = 3.^cdf = 2.

rating the drama on several characteristics. Men and women shared a common evaluation of the drama characters. The wife, On, and her husband, Jit, were most often identified as similar to the respondent or the respondent's spouse, as acting appropriately, and as the characters which the respondent most liked. The words used to describe On and Jit in focus groups made it clear that villages identified these as the characters who acted in a desirable Thai fashion, described as having a "cool heart." Jit, the husband, rarely went to prostitutes; paid attention to his wife's concerns; and, when he did go to a prostitute, he followed his wife's advice, used a condom, and tried to persuade his friends to do the same. On, the wife, spoke "calmly and reasonably" to her husband, telling him she did not like him going to prostitutes, but if he did he should use condoms.

The second most liked and endorsed female character was Nang. She was the "hot, fiery, emotional" wife who told her husband that if she found out he had gone to a prostitute, "he would be sorry." In focus groups women described Nang as providing a clear, unambiguous message to her husband and demonstrating the strength of her feelings. The remaining drama characters received little endorsement, and were rarely a point of identification for villagers.

These character endorsements coincided with shifts in villager responses about personal risk and strategies for reducing risk, as already discussed (Table 7).

Table 7. Men's and Women's Assessment of Drama Characters—Postprogram Villages

		% Volunteering Each Response	
		Women	Men
	(N)	188	155
Character most like you/spouse:			
Female characters			
. Nang		30%	32%
. On		54%	47%
. Sa		16%	19%
Male characters			
. Chai		9%	7%
. Jit		77%	82%
. Prasarn		14%	7%
Women who talk like you/your wife:			
. Nang		16%	29%
. On		73%	56%
. Sa		11%	13%
Man who acts like you/your husband:			
. Chai		10%	2%
. Jit		78%	89%
. Prasarn		13%	7%
Agree with how _____ spoke to her husband?			
. Nang		57%	34%
. On		98%	89%
. Sa		34%	13%
Agree with how _____ acted at the brothel?			
. Chai		1%	2%
. Jit		92%	94%
. Prasarn		5%	6%
Who like most of women			
. Nang		14%	10%
. On		78%	76%
. Sa		8%	1%
Who like most of men			
. Chai		2%	1%
. Jit		95%	91%
. Prasarn		3%	4%

In focus group discussions, the scenario of prostitute visiting was seen by men and women as an accurate portrayal of visiting a brothel. Men, however, stressed that this was only one type of prostitute visiting. In one focus group, men labeled this an "old-fashioned" or "less common" way; engaging prostitutes at village festivals or following village entertainment (e.g., movies) was more typical. In several focus groups, men encouraged the development of more dramas depicting a variety of contexts for prostitution. Women, on the other hand, encouraged development of a drama that included men who did *not* visit prostitutes as good role models for their husbands and sons. In both men's and women's focus groups, participants expressed interest in additional dramas such as the one used in this intervention. They felt stories were the best way to learn; however, they would prefer these to be video- rather than audio-dramas.

Based on these responses, we conclude that the audio-drama component of the intervention achieved the goal of providing role models and realistic scenarios in a format that villagers could endorse and with which they could identify. It was more successful in this area for women than for men.

PRELIMINARY GOALS 6 AND 7: EVALUATION BASED ON VILLAGE MEETINGS AND STRATEGIES

Three outcomes of village meetings were used to evaluate the success of the project intervention: villagers engaging in discussion of concerns about HIV and AIDS in the course of the Village Meeting, identification of sources of risk specific to each village, and identification of risk reducing programs or strategies the villagers wanted to see implemented in their villages. Notes were available for use in evaluation from five village meetings.

Table 8 lists the concerns about risk raised during village meetings. In all five villages there was a focus on identifying risks associated with prostitution. These included prostitutes within the village, coming to the village at specific times (e.g., for festivals), men going to prostitutes outside the village, and men migrating for work and becoming involved with prostitutes. In four of the villages, concerns were raised about intravenous drug use within the village. The nature of these drugs was not always clear. Amphetamines, steroids, and drugs used for health reasons were mentioned as well as potentially addictive drugs. In one village there was concern about some women migrating from the village to work as prostitutes and then returning to the village for visits or to live, work and/or raise families. Clearly, villages are aware of the situations that pose risks within their villages.

Table 8. Village Characteristics Identified as Source of HIV Risk in Each of Five Villages

	Number of Villages Identifying Risk
Total number of villages	5
Men go out of village to visit prostitutes	5
Prostitutes living in the village	5
Prostitutes coming to the village from outside	5
IV drug users in the village	4
Men migrating for work	5
Women migrating to work as prostitutes	1

Meetings in all villages produced recommendations of ways in which risks could be reduced within the village. These are summarized in Table 9. A desire to have condoms easily available within the village was recommended in all villages. In some meetings there were specific suggestions for how this could be implemented. The remainder of the recommendations were unique to each village. At least two suggestions were made in each village. At one meeting there were four distinct suggestions including the availability of HIV tests and treatment for AIDS cases within the village.

To conclude, concerns about local sources of risk were identified in all village meetings as well as specific strategies to reduce the spread of HIV within the village.

FINAL GOAL 1: WOMEN'S RISK REDUCING ACTIVITIES

Taking action to reduce risk was assessed with a question about whether action had been taken specifically for the purpose of reducing HIV transmission. The actions that men and women reported were scored as effective in decreasing the likelihood of HIV transmission (+ 1), ineffective (- 1), or as actions targeting situations of low or no risk (0). Examples of the effective actions included restricting sexual activity to one monogamous partner, condom use with prostitutes, not sharing needles. Examples of the ineffective actions included going to prostitutes who were considered "clean," using only local prostitutes (not using condoms in either case). Examples of the last group of actions included various ways in which casual contacts were avoided. The lowest possible score was - 5 and was obtained by those who had not engaged in any activities that could reduce risk of HIV transmission and had engaged in those that facilitated transmission (e.g., sex with multiple partners, sharing needles). The highest possible score was 12 for those who were currently monogamous and had never engaged in any activities that carried a risk of HIV transmission. Results are reported in Table 10.

Very few women reported taking any actions specifically aimed at risk reduction. This is reflected in both the percentages and in the mean effective action scores. Women scored significantly lower than men on the Effective Action Scale in all village groups. This was primarily related to the absence of condom use in marriage on the part of *both* men and women, but the counterbalancing effect of reported condom use on the part of a slight majority of men who engaged in sex with prostitutes. Despite women's low overall scores, those

Table 9. Risk-Reducing Strategies Recommended at Village Meetings

	Number of Villages
Total number of villages	5
Recommendations:	
Condoms available in village	5
Condoms in community center	1
Announce at village festivals that condoms should be used	1
Blood tests for HIV in village	1
AIDS treatment available in village	1
Help in coordinating strategies	1
Continue education programs in village	1

Table 10. Self-Reported Risk-Reducing Actions Taken

	Village Group			Evaluation Comparisons			
				Pre-Post		Post-Control	
	Preprogram	Postprogram	Control	Chi-square	<i>p</i>	Chi-square	<i>p</i>
Women							
(<i>N</i>)	(205)	(188)	(207)				
Have acted to prevent infection ^a	15%	18%	17%	8.241	.004	0.088	.898
Mean effective action score	0.5	1.05	0.88				
Men							
(<i>N</i>)	(185)	(151)	(143)				
Have acted to prevent infection ^a	41%	54%	48%	5.832	.020	1.077	.700
Mean effective action score	3.30	4.42	3.76				

in postprogram villages scored significantly higher than those in preprogram and control villages on the Effective Action Scale ($F(2, 597) = 4.616, p = .0102$).

The very low number of women who reported any action made it impossible to assess any differences in the types of actions reported between village groups. The most common reason women gave for inaction, in all villages, was that they were monogamous, followed by their belief that they were not at risk.

In focus groups, women engaged in extensive discussions of preventive actions. Most of these involved influencing their husbands either not to visit prostitutes or to use condoms with prostitutes. Women reported using threats, reasoning, appealing to men's love for their families, and other methods of trying to convince their husbands to be more cautious. Some women reported keeping a close check on where their husbands were and questioning them and their companions about their whereabouts. Of a husband who drove a sugar cane truck, one woman reported: "I watch how long it takes. If the others return before he does I want to know why and where he was." Men, in focus groups, confirmed the women's claims of demanding to know where they were with comments such as: "It is more difficult to sneak off these days." Some women spoke of wives who went with their husbands to market, when they traveled, and even when they went partying.

In postprogram data collection, women also expressed feelings that men were now more likely to be using condoms than in the past, primarily because they feared AIDS and additionally because prostitutes made them. But even here, there were qualifications: "He uses them now, unless he's very drunk." From focus groups it appears that women are making concerted efforts to influence their husbands and feel these efforts are often producing the desired results.

To conclude, there is evidence of women changing toward taking more effective action to decrease HIV transmission in postprogram villages.

FINAL GOAL 2: CONDOM USE BY MEN

Men's responses to questions about condom use are reported in Table 11. There was little variation in responses over the three groups of villages. The majority of men reported using condoms with prostitutes and with wives, though exclusively for disease prevention with the former and predominantly for contraception with the latter. There was little apparent change in the

Table 11. Condom Use by Men

	Percent Reporting			Evaluation Comparisons			
	Village Group			Pre-Post		Post-Control	
	Preprogram	Postprogram	Control	Chi-square	p	Chi-square	p
(N)	(185)	(151)	(143)				
Have used condoms with: ^a							
Prostitute	61%	62%	49%	0.004	.950	2.163	.141
Wife	55%	58%	63%	0.150	.699	0.368	.544
Reason for using condom with: ^b							
Prostitute: Disease	100%	100%	100%				
Wife:							
Disease	18%	16%	14%	0.082	.960	0.153	.926
Contraception	70%	73%	73%				
Frequency of condom use with: ^b							
Prostitute:							
Never	75%	67%	80%	3.380	.184	7.086	.029
Sometimes	9%	15%	7%				
Always	16%	18%	13%				
Wife:							
Never	76%	70%	76%	1.837	.399	3.789	.150
Sometimes	21%	25%	23%				
Always	3%	5%	1%				
Last condom used with: ^b							
Prostitute	50%	49%	44%	0.378	.828	4.616	.099
Wife	48%	49%	47%				
Other	2%	1%	9%				
Reason last used condom: ^b							
Prevent disease	59%	52%	54%	0.855	.652	0.750	.687
Contraception	35%	42%	35%				
Other	6%	6%	0				

^adf = 1.^bdf = 2.

consistency of condom use with wives, although a small increase was evident in use with prostitutes in postprogram as compared with preprogram and control villages.

Two factors must be taken into consideration when interpreting these data. First, as already discussed, a large proportion of village men were not in the villages during the time of the research. These were men who were involved in migrant labor. Both focus groups conducted as part of this research and other research in Thailand suggest that particularly for older, married men prostitutes are more typically engaged by men away from home for extended periods of time than by men who remain in the village (Larson et al., 1993). Thus, the sample of men participating in this project did not include those most likely to be engaged with prostitutes. Second, though the ultimate goal of prevention campaigns is changing risk behaviors, it is the most difficult goal to achieve and the one that requires a series of preliminary goals to first be accomplished. The intervention program evaluated in this project is ongoing (see Elkins et al., 1996) with villages implementing the strategies they designed as part of this project. It is only with the continuation and expansion of these strategies that we might expect major changes in risk producing and risk reducing activities.

To conclude, there is no evidence that the men surveyed changed their patterns of condom use.

CONCLUSIONS AND IMPLICATIONS

This paper provides an evaluation of an HIV and AIDS intervention strategy for northeastern Thai villages, targeting, in particular, the needs of married women, many of whose husbands have sexual relationships outside of marriage. Despite the presence of other educational programs in all of the villages participating in this project, the project intervention demonstrated the desired effect over and above the effects of other programs for eight of the nine outcome goals.

When both survey and focus group results were considered, men and women in program villages had begun actions and changed perceptions in directions consistent with eventual risk reduction. Project interventions increased the likelihood that women would recognize they were personally at risk as a result of their husband engaging commercial sex workers and that they would work toward influencing their husbands to stay free from infection. Men's focus group discussions and the difficulties posed in sampling men suggest that more detailed research with men is needed to fully and validly evaluate their risk potential. Despite this qualification, the project intervention appears to have met all of its goals with respect to individual perceptions and actions and to have equaled or surpassed the effect of other programs in this area.

Village meetings were widely attended. Based on evaluation results it appears that discussions during village meetings resulted in identification of sources of elevated risk specific to each village and in initial strategies to counteract these. For most villages this consisted of shifting responsibility for condom distribution and availability and for HIV and AIDS education from health centers and clinics (often several kilometers from the village) to locations within the village. This suggests a willingness on the part of villages to see AIDS as a village concern and to set strategies for addressing this.

Both men and women responded positively to the audio-drama, identifying with specific characters and endorsing actions of certain drama characters. Men's more detailed discussions of risk scenarios and their perceptions of gradations of risk during post-program focus groups suggest, however, that alternative story lines or prevention strategies would be required to adequately address men's concerns and needs.

Following the completion of the evaluation of this program, modifications were made and the strategy was adapted for large-scale implementation (Elkins et al., 1996). As of April 1995 the program had been implemented in three provinces in northeast Thailand and was scheduled for implementation in one additional province (Elkins, 1995). Funding had been made available through several international and national funding agencies for continuation and expansion of the program into additional provinces. In addition, baseline data had been collected to develop programs targeting village men, with particular attention to various forms and scenarios of nonmonogamous sexual activity as initially described in men's focus groups and in village meetings.

What has been developed in this project is not only a program for northeastern Thai villages, but also a strategy for the design of intervention programs which is guided by established theories in the area of behavior change and community development and developed from elicitation research. This approach ensures that programs are sensitive to and set within the sociocultural framework of the targeted region. As in this project, evaluation can be used to modify and improve a program and to identify areas where further work is

needed. This approach permits investment in small-scale endeavors and refinement of these before taking them to scale. In an era of declining health, social service and education dollars, but a persistent presence of HIV, such strategies for program development are highly desirable.

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EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF THE UNITED STATES TRADE REPRESENTATIVE
WASHINGTON, D.C. 20508

JAN 27 2000

Mr. Paisan Tan-Ud
Chairman of PHA Network of Thailand

Dear Mr. Paisan Tan-Ud:

I am writing in response to your letter to President Clinton regarding efforts to improve access to treatment and care for HIV positive Thai citizens. We recognize and support the Government of Thailand's goal of extending effective health care to all its citizens - including people now living with AIDS. This is a goal we fully endorse and believe can be achieved while providing appropriate protections for intellectual property.

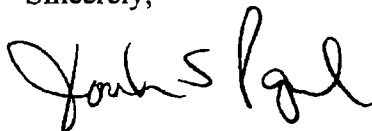
As the President announced last December in his speech to the WTO ministerial, and the Vice President reiterated in his January speech at the United Nations Security Council, the United States is committed to helping developing countries gain access to affordable medicines, including those for HIV/AIDS. As a result, the United States will ensure the application of U.S. trade law related to intellectual property remains sufficiently flexible to respond to public health crises.

We encourage Thai officials to explore all options for extending access to effective treatments, including ongoing direct dialogue with pharmaceutical manufacturers. But the final choice is one for Thailand to make.

If the Thai government determines that issuing a compulsory license is required to address its health care crisis, the United States will raise no objection, provided the compulsory license is issued in a manner fully consistent with the WTO Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS).

We share with the Government of Thailand a belief that access to modern pharmaceuticals can be enhanced in a manner that assures the safety and efficacy of the drugs, preserves intellectual property rights, and promotes the worldwide pursuit of newer, more effective medicines.

Sincerely,



Joseph S. Papovich
Assistant U.S. Trade Representative for
Services, Investment and Intellectual
Property