



BRIGHAM AND
WOMEN'S HOSPITAL

CASES IN GLOBAL HEALTH DELIVERY

GHD-001
APRIL 2011

HIV in Thailand: The 100% Condom Program

In September 1991 Dr. Wiwat Rojanapithayakorn, a regional director for the Thailand Ministry of Health's Center for Disease Control, reflected on the 100% Condom Program. Two years earlier Wiwat had successfully helped launch the program, which required use of condoms in the commercial sex industry, in Ratchaburi province. Over 90% of sex workers were using condoms.

Despite early success, Wiwat had concerns about the future. He had received support for his efforts in Ratchaburi, but he worried about the rest of Thailand's 73 provinces. Wiwat felt that the program had the potential to prevent the spread of HIV in Thailand, and he wondered how he could expand the 100% Condom Program nationally.

Overview of Thailand

The Kingdom of Thailand's neighboring countries included Myanmar (Burma), Laos, Cambodia, and Malaysia. The Gulf of Thailand and the Andaman Sea (see **Exhibit 1** for map of Thailand) bordered Thailand to the south.

In 1988 Thailand's ethnic population was 75% Thai and 14% Chinese; the remaining 11% represented various ethnic tribes. Ninety-five percent of Thais identified themselves as Buddhists.¹

Half of the Thai population worked in agriculture, although the industrial and service sectors comprised 90% of Thailand's gross domestic product (GDP).² Major agricultural products included rice, tapioca, rubber, and soybeans. The largest industries were tourism, metals, manufacturing, automobile production, and agricultural processing. Since the 1970s, export-oriented industrialization had attracted foreign investment and transformed a previously agrarian economy.³ Infrastructure developments including airports, ports, roads, and waste control supported Thailand's entry into the international economy.⁴ Foreign investors revered Thailand, and its GDP growth per year ranged between 5.5% and 13.3% throughout the 1980s.

Sarun Charumilind, Sachin Jain, and Joseph Rhatigan prepared this case for the purposes of classroom discussion rather than to illustrate either effective or ineffective health care delivery practice.

Cases in Global Health Delivery are produced by the Global Health Delivery Project at Harvard. Case development support was provided in part by The Pershing Square Foundation. Publication was made possible free of charge thanks to Harvard Business Publishing. © 2011 The President and Fellows of Harvard College. This case is licensed Creative Commons [Attribution-NonCommercial-NoDerivs 3.0 Unported](#).

We invite you to learn more at www.globalhealthdelivery.org and to join our network at GHDonline.org.

Basic Socioeconomic and Demographic Indicators¹

INDICATOR		YEAR
UN Human Development Index ranking	74 out of 173	1991
Population (thousands)	56,673	1990
Urban population (%)	29.4	1990
Drinking water coverage (%)	91	1990
Poverty rate (% living under USD 1.25 per day)	5	1992
Gini index	46	1992
GDP per capita in PPP (constant 2005 international dollar)	4,243	1991
GDP per capita in constant 2000 USD	1,500	1991
Literacy (% total, % female, % male)	83.5, 82.3, 84.7	1990

Health in Thailand

Between 1965 and 1991 the infant mortality rate decreased nearly threefold. Infectious disease rates were decreasing, and immunization rates were increasing. Outside of municipal areas, 76% had safe drinking water and 83% had adequate sanitation; in municipal areas, 99% had safe drinking water and 96% had adequate sanitation.⁵

Health System and Epidemiologic Indicators²

INDICATOR		YEAR
Average life expectancy at birth (total, female, male)	68, 71, 65	1990
Maternal mortality ratio (per 100,000 live births)	16.7	1997
Under five mortality rate (per 1,000 live births)	32	1990
Infant mortality rate (per 1,000 live births)	26	1990
Vaccination rates (% of DTP3 coverage)	90	1991
Undernourished (%)	29	1991
Adult (15-49 years) HIV prevalence (per 100,000)	1,144	2005
HIV antiretroviral therapy coverage (%)	46	2006
Tuberculosis prevalence (per 100,000)	327	1991
DOTS coverage (%)	1	1996
Malaria cases (per 1,000)	4	2006
Government expenditure on health as a % of total government expenditure	9.9	1995

¹ Data comprised from the following sources: United Nations (UN); The United Nations Children's Fund (UNICEF); World Bank; and United Nations Educational, Scientific, and Cultural Organization (UNESCO).

² Data comprised from the following sources: WHO, UNICEF, UN.

INDICATOR		YEAR
Government expenditure on health per capita (international dollar, USD)	143, 45	1998
Total health expenditure per capita (international dollar, USD)	234, 73	1998
Physician density (per 10,000)	2.3	1992
Nursing and midwifery density (per 10,000)	12	1992
Number of hospital beds (per 10,000)	14.3	1992

Health System

The central administrative system of the Thai government was composed of 13 ministries, including the Ministry of Public Health (MOPH; see **Exhibit 2** for diagram of national administrative system).³ Ministers led each ministry and served on the Prime Minister's Cabinet. A permanent secretary also had bureaucratic oversight of each ministry. The MOPH included the Departments of Communicable Disease Control (CDC), Health and Medical Services, and the Food and Drug Administration. Provincial health departments answered directly to the Permanent Secretary of the MOPH, but the provincial governors appointed by the Ministry of the Interior also provided supervision.

The CDC developed and disseminated policy for the prevention and control of communicable diseases³ and was divided into multiple central-level agencies, support units, and technical units. In addition there were 12 regional units, each responsible for coordinating disease control programs for a particular group of provinces. Regional CDC directors worked closely with provincial public health offices within their jurisdiction. A central governing authority independent of the MOPH, the Bangkok Metropolitan Administration, managed public health and disease control activities in Bangkok.³

A mix of public and private entities comprised Thailand's health system.^{4,6} The MOPH, which in 1990 was allocated 4.8% of the national budget, was responsible for administering national public health campaigns through its network of 70,000 village health volunteers.⁶ In larger cities both private institutions and the Ministries of the Interior, Defense, and University Affairs were the key providers of health services. The number of government health stations across the country, each of which provided care to one subdistrict—about 3-10 villages, had tripled in the previous two decades to 8,193, and the number of community hospitals, each of which served about 50,000 people had doubled to 628.⁷ There also were 84 regional hospitals and 33 specialized or university-affiliated hospitals. As part of a primary health care program that had been evolving since 1977, each of the 7,871 sub-districts had a health center that served catchment areas of 1,000 to 5,000 people, as well as a system of community primary health care centers staffed by village health volunteers.⁷

The government financed 30% and user fees financed 70% of sub-district level health. Free care was available to patients who were too poor to pay for services. Community hospitals, which were usually staffed by between two and five general practitioners, used a similar payment structure. Regional and specialized hospitals typically had physicians on staff that covered all fields of medicine; government funds provided a greater percentage of their operating fees (60%), with user fees covering the remainder. To promote price competition and accommodate the full socio-economic range of patients, centers had the freedom to fix their own fees and to develop sliding fee scales.

HIV in Thailand

Thailand's first documented case of HIV was reported in 1984. A Thai homosexual man who had returned to Thailand after visits to San Francisco and New York City was diagnosed with AIDS.⁸ Most early AIDS cases involved gay men with a history of sex with foreign partners or Thai nationals who had lived abroad for long periods of time.^{9,10}

By 1986, there were 36 documented cases of HIV infection in Thailand.¹¹ None of these cases were identified in female sex workers, blood donors, or injecting drug users. A survey of 101 male sex workers found that only one was HIV positive.¹² In 1987 the government reported that there were only 11 new documented AIDS cases and that seven of those patients had already died.¹³ By August the number of known HIV cases had more than doubled to 81, and there were 165 cases by October 1987.¹⁴

In early 1988, after having tested nearly 200,000 people from high-risk groups, a group of epidemiologists identified 128 HIV cases and 25 people with AIDS-related illnesses, 17 of whom were either homosexual or bisexual.¹⁵ Of HIV-positive individuals, 47% were injecting drug users (IDUs).¹⁶

In 1987 a government study reported 1% HIV prevalence in IDUs who were enrolled in methadone treatment centers. A similar study in March 1988 reported that 15.6% of IDUs in methadone treatment centers were HIV positive. By June 1988, another study reported the prevalence had grown to 40%.¹⁷⁻¹⁹

Drawing from lessons in the West, the Division of Epidemiology at the MOPH began to collect surveillance data in order to track the spread of HIV in high-risk groups: female and male commercial sex workers, men visiting sexually transmitted infection (STI) clinics, IDUs, blood donors, pregnant women, and prisoners. The system began in 14 provinces in 1989 and would cover all 73 provinces³ by 1990.⁸

A 1989 survey by the Royal Thai Army of all newly drafted male army conscripts showed 0.5% HIV prevalence.²⁰ The MOPH's first round of systematic surveillance found that 3.5% of brothel-based commercial sex workers were HIV positive.²¹ Another study estimated that 44% of brothel-based sex workers in Chiang Mai, a northern city, were infected.²²

One year later, surveillance reports estimated that 9.3% of all sex workers were HIV positive. By 1991 the figure had risen to 15%. At that time 5% of male clients at STI clinics, 3% of male army recruits, 0.5% of blood donors, and 34% of IDUs also were infected with HIV (see **Exhibit 3** for HIV prevalence by subgroup).^{20, 21} Authorities acknowledged that the virus had also spread among the general population when antenatal clinics reported that 0.7% of pregnant women, and 1.3% of those in Chiang Rai, were HIV positive.^{21, 23}

Public Reactions to HIV

In the years following the discovery of Thailand's first HIV case in 1984, prevailing opinion among government officials and the general public was that AIDS was a "gay disease" and a "foreigners' disease."⁹ In 1987 the Bangkok Post, an English-language daily newspaper, proclaimed, "AIDS is not prevalent."²⁴ Research suggested that there was little knowledge about HIV among sex workers and clients.⁹

Some health care leaders voiced concern that the failure to stem the spread of HIV would negatively impact tourism as Thailand's commercial sex industry was known worldwide. In 1987 the media and non-governmental organizations lambasted the government for its alleged complacency. The release of MOPH survey data to the public revealed the growing threat of the epidemic.

³ As of this writing, there were 76 provinces. Prior to 1993, there were 73 provinces.

In 1987 rumors surfaced that a well-known model and media personality had been infected because she was moonlighting as a call girl. Although her physicians subsequently reported that she was not HIV positive, the media coverage brought AIDS into mainstream discourse. Companies began testing employees, sometimes without consent.²⁵ The gay press reported a rise in homophobia, an unexpected phenomenon for a gay community that was previously accepted by society.²⁶ Some sex establishment owners prohibited foreign or Caucasian clientele from patronizing their businesses.⁹

Early HIV Policy, 1984-1991

The Thai government initially adopted a mandatory case reporting policy as its primary response to HIV.²⁷ In 1985 it formed a National Advisory Committee on AIDS to set policy for prevention and control.²⁸ The committee instituted blood screening programs, reformed blood donation policy, and sponsored small surveys to document HIV prevalence in high-risk groups.²⁷ In 1987 the MOPH established the National AIDS Program and Center for the Prevention and Control of AIDS. The new program primarily focused on raising public awareness, providing care for AIDS patients, and reducing risky behavior in vulnerable groups.^{9,29} In 1989 the Division of Epidemiology began conducting biannual sentinel surveillance of high-risk groups, sharing the data with both the new AIDS program as well as the general public.⁸

The government enacted new legislation to prevent HIV-positive foreigners from traveling to Thailand and to deport visitors who were already in the country and discovered to be HIV-positive.²⁹ Because of mandatory case reporting, the government could access identifying information about patients, such as their names and addresses. Lawmakers began drafting an AIDS Bill in 1989 that, had it not failed, would have permitted testing in high-risk groups without consent and made it a crime for a person with HIV to donate blood, patronize sex workers, have sex without a condom, or undergo medical procedures without revealing their HIV status to hospital staff. Non-governmental organizations formed a consortium in 1989 to advocate for prevention, treatment, and human rights in high-risk groups and lobbied for an ethical AIDS policy.

The Commercial Sex Industry

Thailand's commercial sex industry predated the twentieth century. Some analyses have attributed the Buddhist values of tolerance that prohibit stigmatization of prostitutes to the industry's roots.^{30, 31}

While prostitution was made illegal through the Prostitution Suppression Act of 1960, the Vietnam War rejuvenated the industry and created the foundation for Thailand's modern sex industry.³² In order to profit from the influx of tens of thousands of United States (US) Armed Forces who spent their "rest and recreation" time in Thailand, the Thai "Entertainment Places Act of 1966" allowed and monitored the provision of "special services" for troops by a variety of establishments.³³ During this time the industry diversified from brothels to massage parlors, dance halls, and more discreet environments. During that period the number of brothel-based sex workers decreased, but the total number of sex workers remained unchanged.³⁴

During the 1970s and 1980s the industry continued to thrive through expanding tourism, which in the 1980s surpassed agricultural exports as the leading source of GDP.⁹ From 1982 to 1986, tourism revenue increased by 11.6% per year, and in 1987 (declared "Visit Thailand Year" in celebration of the King's 60th birthday) tourism increased by 24%.^{9,35} During this time, male tourists outnumbered female tourists two to one.^{36, 37}

The de facto arrangement wherein policies prohibiting prostitution were rarely enforced survived in part due to widely acknowledged collusion between the police and owners of sex establishments.³⁰ Owners

were nearly always men, and most operated within grey market networks.³⁰ Military or police officials often were complicit in these businesses and ensured that laws regulating sex work would not be enforced.³⁸ By the early 1990s the commercial sex industry was worth hundreds of millions of dollars and represented from 1% to more than 10% of the GDP.^{39, 40}

A 1991 survey reported that over 90% of military conscripts reported having visited a sex worker, typically beginning between the ages of 15 and 18. In addition, 74% of Thai men reported that their first sexual encounter was with a sex worker.⁴¹ In 1989 the MOPH officially reported that there were 86,201 sex workers⁴ and 6,095 sex establishments.⁴²

The majority of sex workers came from backgrounds of unemployment, poverty, and family instability.^{36, 43} Nearly 90% had not completed their seventh grade education, and one-quarter were illiterate. The median age was 23 years. About 80% of sex workers had migrated from rural areas, primarily the economically depressed northern and northeastern provinces. A small percentage were transnational migrants, mostly from Myanmar (Burma). Recruitment usually occurred through informal social networks. Some women entered through human trafficking schemes that operated both in rural areas and in Myanmar, Laos, and Cambodia.⁴⁴ A significant proportion of commercial sex workers were children under the age of 16.^{45, 46}

Brothel owners provided sex workers with dormitory rooms, food, occasional small loans, and protection. Conditions and income were better in massage parlors than in brothels. Commercial sex workers garnered significantly higher wages than they could have working in factory and retail jobs. Women often returned to their villages for periods of time, and commonly sent remittances to their families living in rural areas.^{42, 47}

In the late 1980s the sex industry was diverse with several market niches based on socio-economic status, nationality, and perceived health risks. Sex establishments, which constituted the majority of the industry, included brothels, massage parlors, hostess bars, go-go bars, beer bars, tea houses, motels, and karaoke bars (see **Exhibits 4** and **5** for more information about the various types of sex work establishments). Establishment-based sex workers could be divided between direct and indirect sex workers. Direct sex workers provided sexual services on the establishment premises, such as brothels. Indirect sex workers ostensibly offered other entertainment services – like massage, company, and dancing – but clients often could negotiate with them to obtain sexual services outside the premises if the client paid an additional fee to the establishment. Freelance sex workers, formally unassociated with establishments, worked out of hotels, discos, bars, and universities.

Brothels, massage parlors, hostess bars, and karaoke bars catered mainly to Thais – who represented 80% of all clients within the commercial sex industry – and other Asians.^{42, 48} Go-go bars and beer bars were targeted at Western expatriates and tourists.

⁴ Estimates of the number of sex workers in Thailand vary greatly, reflecting variability in the quality of epidemiological data, definitions of sex work, and methodologies. A 1974 police survey estimated the number to be 400,000, and by 1980 some estimates suggested there were 500,000 to 700,000. ³³ Jeffrey L.A. *Sex and Borders: Gender, National Identity, and Prostitution Policy in Thailand*.

Vancouver: UBC Press; 2002.

Dr. Wiwat Rojanapithayakorn

Early Training

Dr. Wiwat graduated from medical school in 1976 and then worked as a general physician in Yala, a southern province. Eventually he became the director of two district hospitals. In 1980 he entered Thailand's first class of the Field Epidemiology Training Program (FETP), a collaboration between the MOPH, World Health Organization, and the United States Centers for Disease Control (US CDC) that trained a select group of physicians in epidemiology. Wiwat's research and training focused on sexually transmitted infections (STIs); he wanted to study diseases with short incubation periods in order to develop beneficial interventions.

From 1980 to 1983 Wiwat worked in the Venereal Disease Division at the MOPH. He also spent time at the US CDC, where he learned the technical foundations of STI prevention and control, including basic science and laboratory methods, care and treatment of STIs, contact tracing, health care promotion, and behavioral change programs.

For a FETP course project, Wiwat presented data from Bangkok that showed 60% of men who were diagnosed with an STI had frequented one of 40 sex establishments. He concluded that if the city could control STI transmission at these 40 sex businesses, it could reduce STI incidence by 60%. The FETP course facilitator, an American from the US CDC, called the group of businesses "Wiwat's Top 40," after the popular American radio show.

Putting Theory to the Test

In 1984 Wiwat was appointed chief of the Epidemic Intelligence Section of the Thai CDC. He set out to convince sex establishment owners that their sex workers needed to seek routine care for STIs. The owners scoffed, wondering why they should listen to him.

Wiwat decided that because the sex workers and establishment owners did not actively use STI clinics, he would bring the clinics to them. He secured funding from Family Health International (FHI) to conduct a vaginal microbicide sponge study and used this platform to set up weekly mobile STI clinics. He convinced four owners of large massage parlors that a lower incidence of employee disease would mean better business for them. Just before the evening rush of clients, Wiwat and his team (which consisted of a nurse, lab technician, and driver) set up in an unused massage suite to provide each sex worker who chose to attend the clinic with free care, treatment, and medications.

Despite Wiwat's efforts, the rate of STIs in sex workers changed little. Women treated one week would present with new infections from their customers the following week. Wiwat concluded that the high prevalence of STIs among customers meant that every sex worker had to use condoms, but he lacked a mechanism to guarantee compliance.

The AIDS Division

In 1987 the MOPH created the AIDS Division. Wiwat was appointed its first director and set about coordinating the national AIDS prevention and control program, establishing counseling and testing services as well as surveillance in high-risk groups. Many health officials argued that given the alarming reports on HIV and AIDS cases in 1987 and 1988, the AIDS Division should focus on expanding testing programs in order to better characterize the potential epidemic. Wiwat wanted to focus more on preventing transmission among high-risk groups, such as sex workers, than on case-finding.

In 1988 few cases of HIV were found in sex workers. In February 1989 Wiwat attended a medical conference in Pattaya, a popular beach resort town known for its sex industry. According to public health officials at the conference, national surveys of sex workers had identified only a few cases of HIV. Thai sex workers were not likely to be a vector of HIV infection, they said, because they cleaned themselves after the act. Only a few months later, surveys showed 33% prevalence in sex workers in Rayong, an eastern province, and 44% prevalence in brothels in Chiang Mai.^{18,19} Wiwat proposed the idea of sex industry-wide mandatory condom use but met resistance from other MOPH officials who believed it to be unrealistic.

Following political changes in the MOPH in the summer of 1989, Wiwat was reassigned from his position as head of the AIDS Division to regional CDC director in Ratchaburi province.

The 100% Condom Program

Developing the Concept

In late July 1989 Wiwat assumed his new position in Ratchaburi. Despite the resistance he encountered at the MOPH, he remained concerned that HIV transmission between sex workers and their clients would fuel the Thai AIDS epidemic (see **Exhibit 6** for HIV and AIDS projections over time). He continued to believe that mandatory condom use was a necessary intervention and wanted to use his new position to test this idea.

A rapid survey on condom use, conducted in January 1989, showed that only 14% of direct sex workers used condoms with their clients; a subsequent survey administered more widely in June reported 25% were using condoms (see **Exhibit 7** for condom use among sex workers over time).⁴⁹ Sex workers had low literacy, limited access to public services, and often felt powerless to force their clients to use condoms for fear of losing income. Programs designed to teach sex workers condom negotiation skills failed to overcome the economic dependence that sex workers had on their clients. Sex establishment owners often valued profit over protecting their workers and pressured sex workers to yield to customers' demands.

Wiwat believed that the mandate for condom use would have to come from the government. Owners of sex establishments would listen only to provincial administrative authorities. Therefore, the provincial government would need all owners of sex establishments, regardless of whether they offered direct or indirect sex services, to require their sex workers to use condoms with customers. If every sex worker in every establishment used condoms with every customer, then the customers would be powerless to refuse condom-only sex and no sex worker or owner would lose business. The penalties for non-compliance would be clear: non-compliance would result in closure of the business.

Wiwat conceived of five ways to test compliance. First, his team would interview male STI clinic patients to identify the sex establishments they had visited. Once identified, authorities could notify the owner that a man attending an STI clinic had visited his establishment. Second, the national contact tracing system would provide information from patients diagnosed outside of Ratchaburi who had visited sex establishments within the province. Third, the program could send "mystery shoppers" into the establishments to observe whether or not sex workers were insisting on condom use. Fourth, it would assess the incidence of STIs in sex workers attending routine, weekly health checks (at which they would be given free boxes of condoms). If a sex worker presented with an infection, it would mean that she had engaged in unprotected sex. Fifth, the condom supply would be monitored for both the quantity purchased by the provincial health authorities and the number demanded by and distributed to the establishments.

Wiwat evaluated the MOPH condom supply chain. In 1989 there were three major producers of condoms who regularly bid for government contracts. The national network of family planning clinics had

long provided free condoms, and pharmacies in most districts sold affordable condoms. The MOPH condom supply chain had two parts. First, the Department of Health continued to budget for condom distribution to the family planning clinic network and provincial health centers. Second, the CDC and the AIDS Division distributed condoms to STI clinics as well as the provincial health departments. Condom purchases from the AIDS Division had increased from 6.7 million condoms purchased in 1988 to 8.7 million in 1989.³⁴ Wiwat concluded that there was more than an adequate supply to meet growth in condom demand.

Outside of re-assigning public health officials to work on the program, the only significant financial investment for a condom program would be in purchasing condoms. Within the government, Wiwat needed approval of the provincial governor to begin the intervention. Within the sex industry, he needed the collaboration of both sex business owners and sex workers. The provincial police chief would ensure the police department's cooperation.

Because Wiwat was a CDC official at the regional level, he would also need to make sure that the local provincial AIDS committee supported the idea. For monitoring purposes, he needed to ensure that STI clinic staff members were properly trained to execute contact tracing. The network of clinics was under the purview of the Provincial Health Department, so the program also needed the Provincial Health Director's support. Health officials and police officers would have to make time to conduct audits of sex establishments.

The AIDS and STI section of the Provincial Health Department and the Regional CDC Office would share direct responsibility for the program. The AIDS and STI section of the Provincial Health Department would provide care and treatment to sex workers and male clients, monitor and evaluate the program, distribute condoms to sex workers and establishments, and conduct the majority of fieldwork. The Regional CDC Office would enlist the pharmacy section to monitor condom quality; the implementation support section to manage the logistics of condom procurement, distribution, and storage; the STI clinic staff to counsel and treat sex workers; and the epidemiology unit to monitor condom use in the establishments.⁵⁰

The Ratchaburi Pilot

As a regional CDC director, Wiwat took special interest in Ratchaburi, the province in which his office was based, and decided to pilot the program there.¹⁸ On August 30, 1989, he attended the provincial AIDS committee meeting and presented his plan. He outlined the program framework. The simplicity of Wiwat's formula appealed to the committee. Business could continue even if one of the parties was infected with an STI or HIV. So long as a condom was used, the uninfected party would be safe.

The committee supported the plan but suggested he seek support from the provincial governor, Governor Bira Boonjing. Bira had a reputation for regulating his province's sex industry vigilantly. Previously, the governor had required that sex establishment owners send their sex workers for routine check-ups for STIs with the penalty of closure for non-compliance.

When Wiwat outlined his idea for the governor, Bira questioned the enforceability of such a policy. For example, he wondered whether those enforcing the policy would have to stand inside the bedrooms to observe if sex workers and their customers were using condoms. Wiwat's five methods to test compliance convinced the governor of the plan's feasibility, and Bira officially announced his approval on September 20, 1989. With the governor's support, the chief of police and provincial health director were also amenable.

Wiwat named his initiative the "100% Condom Program." Historically, Thai government programs took on the name of the place they were first implemented. Wiwat worried that in the future other provinces might fail to appreciate the applicability of the "Ratchaburi Project" in their community.

By combining information from the police and STI clinics, a list of all sex establishments was compiled, and Governor Bira convened a meeting of sex business owners. On Friday, November 3, 1989, 100 owners gathered in a provincial hospital in Ban Pong, an area known for its concentration of factories and sex businesses. The police chief, health officials, and school principals were also present. The Governor and Wiwat outlined the structure of the “Program for Condom Promotion in Sex Workers.” The crucial principle they emphasized was that the program could promote sex worker safety without hurting profits.

The governor described the sanction system. The first instance of non-compliance would result in a warning, the second in a three-day closure, the third in a one-month closure, and the fourth in indefinite closure. Owners were warned that if they were closed due to non-compliance and they tried to reopen elsewhere, they would still have to comply with the policy. Near the end of the meeting, Wiwat asked Governor Bira to ask the owners to raise their hands if they agreed with the program. When all of the owners raised their hands, Wiwat instructed a photographer to take a photograph. The Governor announced that the program was to begin immediately on the following Monday.

In the weeks that followed, STI rates at participating clinics were unchanged. Upon querying the sex workers, Wiwat discovered that some had not been informed of the new policy, while others had heard of it but were still afraid to refuse customers who were insistent on not using condoms. He realized that he needed to convince not only the owners, but also the sex workers.

Wiwat convened a meeting with 222 sex workers on December 1, 1989, World AIDS Day. Again, Governor Bira outlined the 100% Condom Program, its benefits, and the potential penalties for non-compliance. Wiwat showed sex workers his photograph of the owners. Additional meetings were held January 17 and March 9, 1990; more than 500 sex workers attended. Sex workers at the meetings were told to spread word to those who did not attend.

A December 1990 survey showed that condom use among sex workers had increased to 75%.¹⁸ To improve program implementation, a provincial committee was created with Governor Bira as the chairman, Wiwat as the secretary, and committee members from both government and the sex industry. They invited owners of larger, well-known establishments to participate. To improve police participation, a meeting between owners, health authorities, and the police was held at the Ratchaburi police department on February 5, 1991. Wiwat reiterated the importance of the program and made clear that non-compliers would face sanctions.

With the proactive cooperation of the police, condom use among sex workers surpassed 90%, and STIs in sex workers fell precipitously. STIs in male clinic attendees persisted, however. Contact tracing revealed that male clients were visiting sex establishments in other provinces so that they would not be recognized; however, they continued to seek medical care in their home province of Ratchaburi. Thus, Wiwat realized that covering the whole of Ratchaburi province was not enough.

Early Efforts to Expand

As a regional director of the CDC, Wiwat began to expand the program to neighboring provinces within his jurisdiction. He conducted a campaign to spread word of the pilot 100% Condom Program. Wiwat found a strong supporter of the 100% Condom Program in Dr. Sa-Ong Kochaseni, the provincial health director in Samut Sakhon province. In previous months a hospital worker had undergone a complicated appendectomy, received an HIV-infected blood transfusion,¹⁸ and sued Samut Sakhon province for approximately USD 430,000.

On February 19, 1991, an ad hoc committee met to discuss HIV and AIDS control in Samut Sakhon. Governor Sudjitr Korwanich chaired the committee of provincial administrative directors, and Wiwat formally proposed the 100% Condom Program. The Governor was convinced and pushed for rapid implementation.

In March Governor Sudjitr held meetings with owners from all forms of sex establishments, police officials, and health authorities to outline the program's requirements, benefits, and sanctions. The provincial AIDS committee also met and created seven teams responsible for condom distribution and administering behavioral surveys. The program began in April 1991.

The MOPH increased the number of condoms it was providing to the provincial health department from 10,000 per month to 60,000 per month.¹⁸ Within six weeks, there was nearly 100% compliance among sex establishments. The 13% baseline rate of STIs in sex workers plummeted to 0% within two months.⁵¹ The decrease occurred in spite of increased clinic visits by sex workers. Where STI clinics typically saw 300 sex worker visits per month, after June the attendance rate tripled, while infections dropped below 1%.

Wiwat convinced provincial governments and AIDS committees of the need to adopt his program. Wiwat contacted Family Health International (FHI), the organization that had sponsored his microbicide studies in the mid 1980s, to request funding for a regional meeting. FHI agreed to give Wiwat USD 800 to convene a conference of the eight provinces at a hotel in Nakhon Pathom province. The provinces represented were Ratchaburi, Petchaburi, Prachuap Kiri Khan, Nakhon Pathom, Kanchanaburi, Suphanburi, Samut Sakhon, and Samut Songkhram. Dr. Teera Ramasoota, the director-general of the CDC chaired the meeting. The conference took place on April 4, 1991; over 100 officials attended, including seven governors. Wiwat recruited program veterans to speak at the event, including Governor Sudjitr, the provincial health director of Ratchaburi, and the regional chief of police.

Teera, like others at the central MOPH office, had heard of Wiwat's work in Ratchaburi, but had not seen the process in action. He conveyed his excitement about the project, saying, "I'm impressed with our civil servant and police leaders who, for the first time at the provincial level, are so invested and prepared to collaborate in a serious and sincere way. This has reassured me that we still have hope to fight this disease in which there is almost no hope left."

Governor Sudjitr forcefully defended the program's value in a speech.

Our country still doesn't have a policy that will truly prevent AIDS. All we have are public education campaigns. The central government has only focused on awareness efforts to spread understanding of AIDS. They send our children dressed as AIDS parading down the streets. But we still don't have a true way to prevent AIDS....

To all of you here today, civil servants, police and, importantly, public health officials, I ask you to listen and come together and cooperate for the sake of our country....

This policy we need is to have sex workers use condoms in order to prevent and limit [AIDS]. So I beg of you to sincerely come together, combine forces. If we can stop AIDS, then you will bring good merit to our nation and to all Thais, who would otherwise die without their fathers and mothers, be ostracized from society. Think of no other goal and do your part to help.¹⁸

Some governors saw this charge as a competition among the provinces. The Governor of Prachuap Kiri Khan province stated, "In our province we will do this, and we will do better than Ratchaburi and Samut Sakhon." All of the governors who attended the conference embraced the 100% Condom Program. Wiwat subsequently published the conference proceedings, sent them to all of the provincial medical directors, and in the following months redoubled his efforts to visit the provinces to facilitate the program rollout. He followed up with governors who had committed to implementation. Once the governors and provincial health directors understood the program, Wiwat left them to develop the implementation details that were

specific to their province's social, economic, and logistical circumstances. In those provinces yet to begin the program, he encouraged the governors to lead meetings with owners, police, and health officials. To support efforts throughout the provinces, Wiwat attended provincial AIDS committee meetings and monthly provincial government meetings; he also disseminated information about the 100% Condom Program and its results to other regional directors. Further, Wiwat hosted site visits so that officials from other provinces could see the Ratchaburi program in action.

The program achieved success in all the provinces in which it was implemented. For example, in Pitsanuloke, the baseline condom use was 30%, and nearly one in three sex workers was infected with a STI.⁵² In August 1991, after four months of implementing the program, infection rates were less than 10%, and by December of that year, condom use was above 90%.

Expanding Nationwide

Wiwat wondered how he could expand the program to all 73 provinces. In his days at the AIDS Division, he had access to the National AIDS Committee, but now he was hundreds of kilometers away in a remote province. He could continue visiting each province individually, one by one, despite the fact that they were outside of his official region, but he knew that he could not move quickly enough by himself. Wiwat wondered how sustainable any program would be and what role the central MOPH would play, if any.

Changes in the sex industry might limit the effectiveness of the 100% Condom Program. The proportion of indirect sex workers was increasing. So long as they were in identifiable establishments, the program would be fine, but he worried about unofficial sex establishments such as restaurants, where owners were less likely to take responsibility for the activity of indirect sex workers. The epidemiology within high-risk groups might evolve, too, if infections in IDUs continued to stay high.

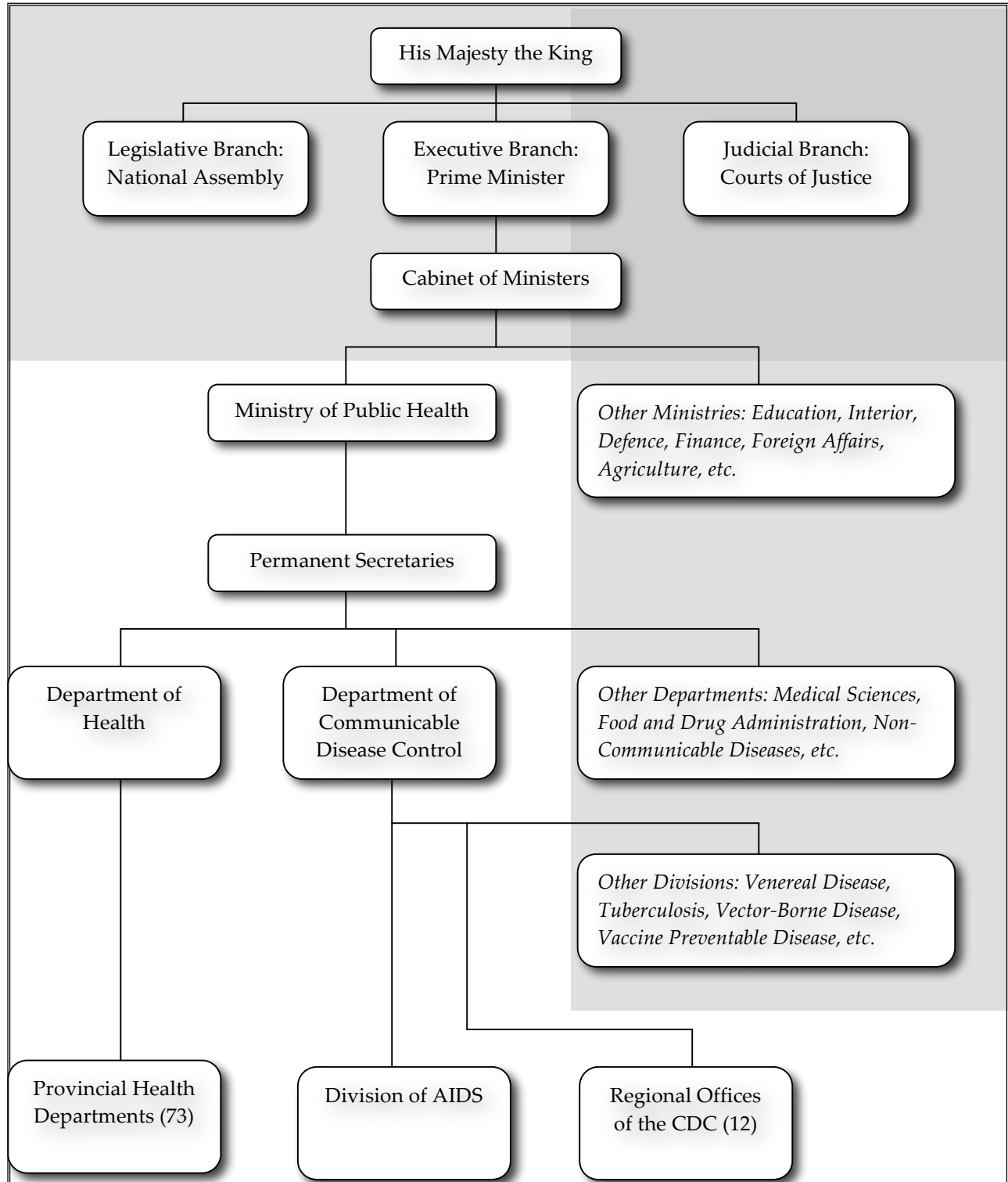
Still, Wiwat was optimistic that the 100% Condom Program could prevent a full-scale national epidemic. He carefully reflected on the factors that led to its success and considered his next steps.

Exhibit 1 Map of Thailand



Source: Available in the public domain.

Exhibit 2 National Administrative System, 1991



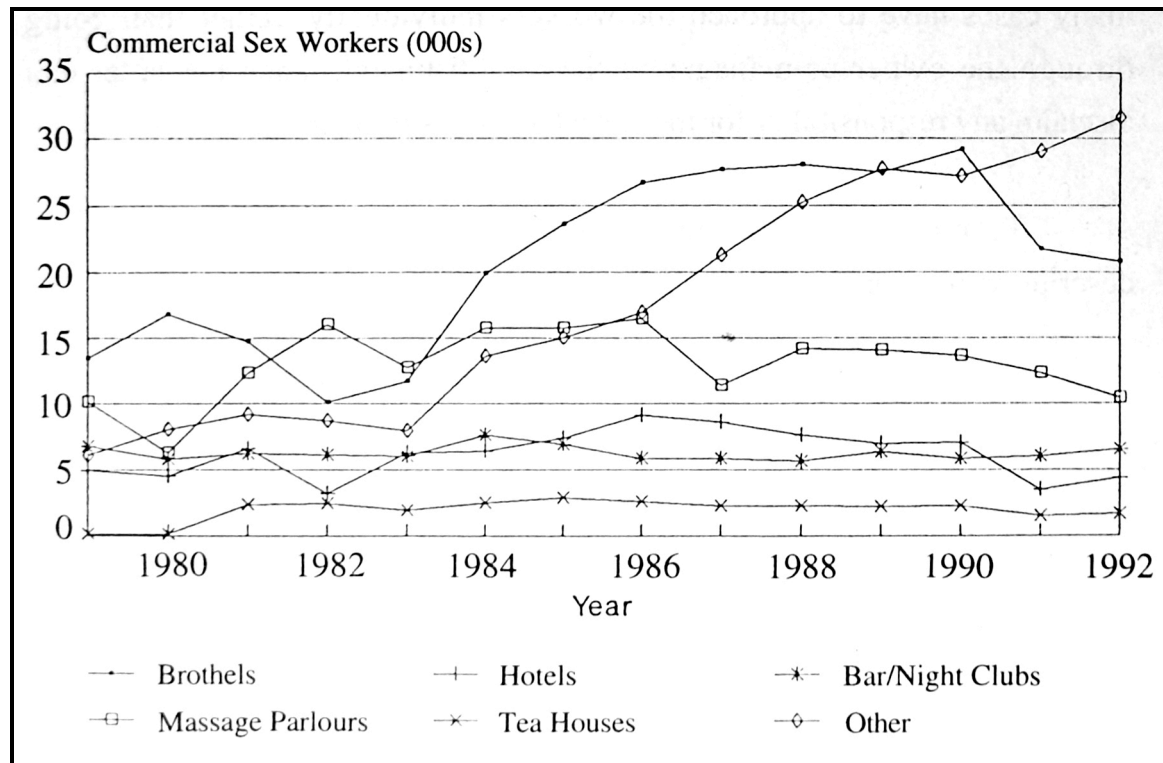
Source: Adapted from Thai Ministry of Public Health.

Exhibit 3 *HIV Prevalence by Subgroup, 1991*

Subgroup	% HIV-Positive
Pregnant women at antenatal clinics	0.7
Blood donors	0.5
Male army recruits	3
Injecting drug users	34
Male clients at STI clinics	5
Direct sex workers	15
Indirect sex workers	4

Source: Bureau of Epidemiology and Armed Forces Research Institute of Medical Sciences (Royal Thai Army).

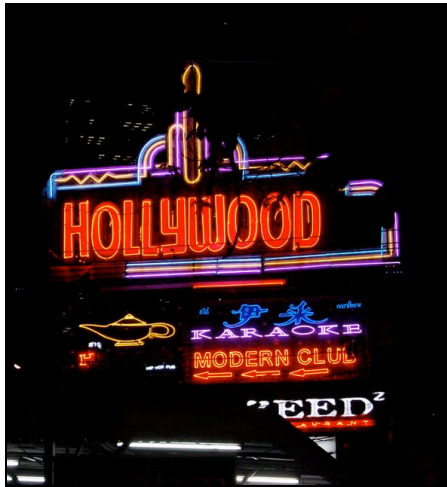
Exhibit 4 *Commercial Sex Workers by Type, 1979-1992*



Source: Thai Ministry of Public Health.

Exhibit 5 Sex Establishments

A. Massage parlors



B. Patpong Area: Go-go bars, members clubs



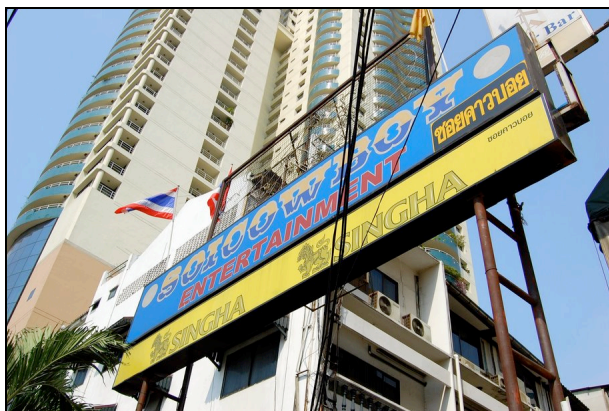
C. Patpong Area: Gay establishments



D. Patpong: Beer hall



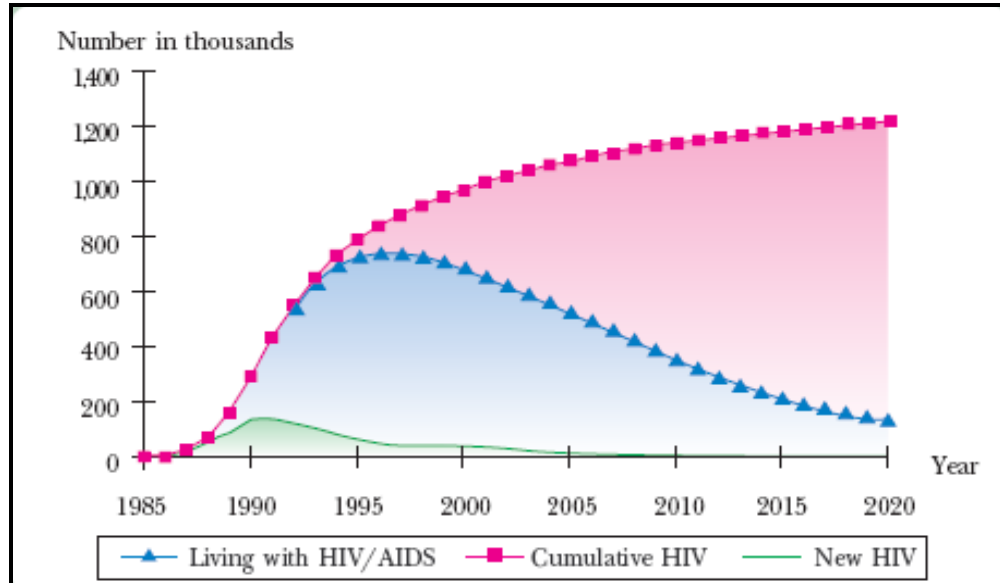
E. Soi Cowboy



F: Soi Cowboy

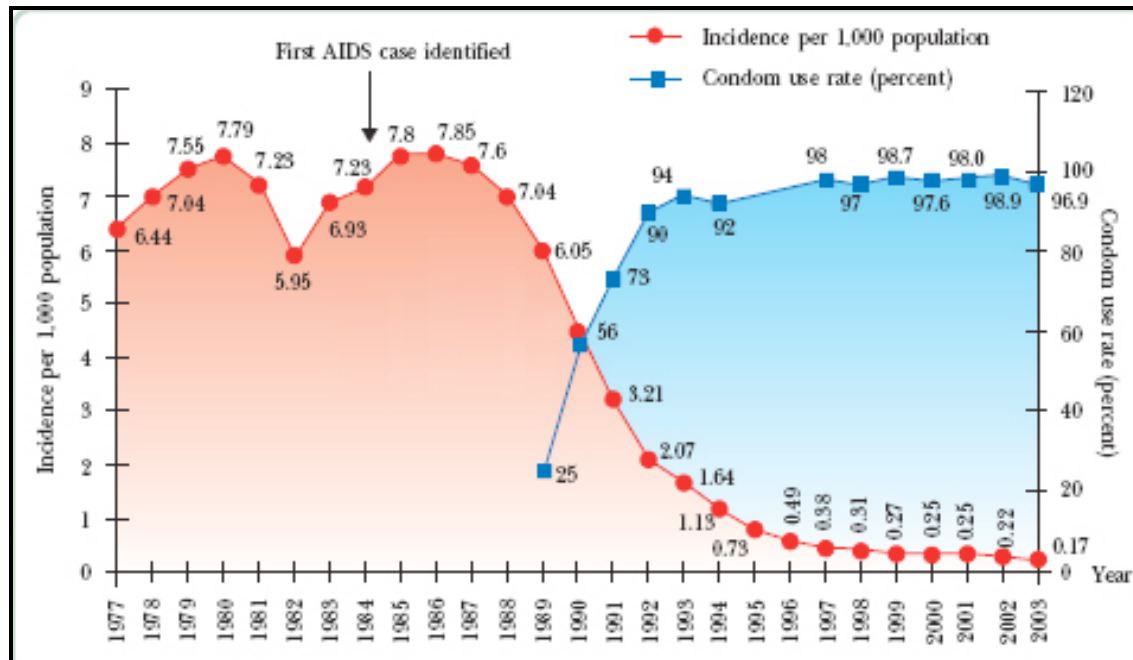


Exhibit 6 HIV and AIDS Projections, 1985-2020



Source: Department of Disease Control, Ministry of Health (projections based on data up to 2003).

Exhibit 7 STI Incidence and Condom Use among Female Commercial Sex Workers, 1977-2003



Source: Bureau of Epidemiology and Cluster of STIs, Department of Disease Control.

References

1. Chayovan N, Knodel J. *Thailand Demographic and Health Survey*. Bangkok: Institute of Population Studies, Chulalongkorn University and Institute for Resource Development/Westinghouse; 1988.
2. CIA Factbook. *Thailand*; Last Updated 15 May 2007. Accessed 20 May 2007. www.odci.gov/library/publications/the-world-factbook/geos/th.html.
3. Ministry of Public Health. *Thailand Health Profile: 2001-2004*. Bangkok: Ministry of Public Health; 2005.
4. Paitoonpong S, Abe S. The Thai economy: a picture from the past. *TDMI Quarterly Review*. 2004;19(4):3-12.
5. National Statistical Office. Percentage of Households with Safe Drinking Water by Area: 1990-2000 & Percentage of Households with Sanitation by Area: 1990-2000 (Tables 18 and 19) (Adapted from Population and Housing Census). *Thai Development Indicators 2003*. Bangkok: Ministry of Public Health; 2003.
6. Reisman DA. Payment for health in Thailand. *International Journal of Social Economics*. 1999;25(5):609-641.
7. Nitayarumphong S. Evolution of primary health care in Thailand: what policies worked? *Health Policy and Planning*. 1990;5(3):246-254.
8. Phoolcharoen W, Ungchusak K, Sittitrai W, Brown T. *Thailand: lessons learned from a strong national response to HIV/AIDS*. Bangkok: AIDS Division, Communicable Disease Control Department, Ministry of Public Health; 1998.
9. Cohen E. Tourism and AIDS in Thailand. *Annals of Tourism Research*. 1988;15:467-486.
10. Phoolcharoen W. HIV/AIDS prevention in Thailand: success and challenges. *Science*. Jun 19 1998;280(5371):1873-1874.
11. Bangkok Post. Sex tours bring dollars as well as AIDS menace. *Bangkok Post* October 8, 4 October 1987: 4.
12. Burns W. The killer that won't go away. *Bangkok Post*. January 15, 1987 January 15: 19.
13. Pornsriruk S. Government should provide better information about AIDS. *Bangkok Post*. August 4, 1987: 35.
14. George H. AIDS and assistance. *Bangkok Post*. August 4, 4 August 1987: 4.
15. Bangkok Post. Scare tempered by educational campaign. *Bangkok Post*. January 15, 15 January 1988: 4.
16. Usher AD. Experts say education is key to stopping AIDS. *The Nation*. January 4, 4 January 1988: 2.
17. Weniger B, Limpakarnjanarat K, Ungchusak K, et al. The epidemiology of HIV infection and AIDS in Thailand. *AIDS*. 1991;5(suppl 2):S71-85.
18. AIDS Division. *The 100% Condom Program: Protocol for the Prevention of AIDS in Thailand*. Nonthaburi: AIDS Division, Centers for Disease Control, and Ministry of Public Health; 1995.
19. Rojanapithayakorn W. *Description on the development of the 100% Condom Programme in Thailand*; March 2007.
20. Armed Forces Research Institute of Medical Sciences (Royal Thai Army), Institute of Pathology (Phra Mongkutklao Medical Centre. Royal Thai Army) data. Prevalence of HIV Infections in Thai Male Military Recruits, November 1989-May 2003.
21. Bureau of AIDS, TB, and STI. Bureau of Epidemiology. Department of Disease Control. Ministry of Public Health.
22. Bureau of Epidemiology. Communicable Disease Control Department. Ministry of Public Health.

23. Bunnell R, Yanpaisarn S, Kilmarx P, et al. HIV-1 seroprevalence among childbearing women in Northern Thailand: monitoring a rapidly evolving epidemic. *AIDS*. 1999;13(4):509-515.
24. Bangkok Post. AIDS is not prevalent. *Bangkok Post*. July 23, 23 July 1987;Government: 1-2.
25. Usher AD. AIDS and its legal complications. *The Nation*. January 5, 5 January 1988: 5.
26. Rattanawannatip M. Homosexuals want new image. *The Nation*. September 17, 17 September 1987: 16.
27. Ainsworth M, Beyrer C, Soucat A. AIDS and public policy: the lessons and challenges of "success" in Thailand. *Health Policy*. Apr 2003;64(1):13-37.
28. Thongcharoen P. *Evaluation of the HIV/AIDS Epidemic: Perspective on AIDS Control - Viewpoint from Thailand*. Bangkok: Mahidol University; 1999.
29. Porapakkham Y, Pramarnpol S, Athichhodhdi S, Bernhard R. The Evolution of HIV/AIDS Policy in Thailand: 1984-1994. *AIDS Control and Prevention Project (AIDSCAP) Policy Working Paper Series, WP5. Family Health International/AIDSCAP/USAID. Project 936-5972.31-4692046*. 1996.
30. Leheny D. A political economy of asian sex tourism. *Annals of Tourism Research*. 1995;22(2):367-384.
31. Keyes CF. Mother or mistress but never a monk: Buddhist notions of female gender in rural Thailand. *American Ethnologist*. 1984;11:223-241.
32. Singh J, Hart S. Sex workers and cultural policy: mapping the issues and actors in Thailand. *Review of Policy Research*. 2007;24(2):155-173.
33. Jeffrey LA. *Sex and Borders: Gender, National Identity, and Prostitution Policy in Thailand*. Vancouver: UBC Press; 2002.
34. STI Division data. Communicable Disease Control Department. Ministry of Public Health. Infectious Contacts of STD Patients, Fiscal Year 1990. In: Rojanapithayakorn W, ed. *The 100% Condom Program: Protocol for the Prevention of AIDS in Thailand*. 3rd ed. Nonthaburi: AIDS Division, CDC, MOPH; 1995.
35. International Tourism Reports. *Thailand*. London: Economic Intelligence Unit; 1988.
36. Cohen E. Thai girls and farang men: the edge of ambiguity. *Annals of Tourism Research*. 1982;9:403-428.
37. Edwards A. *Far East and Pacific Travel in the 1990s*. London: The Economic Intelligence Unit; 1990.
38. Brinkman UK. Features of the AIDS Epidemic in Thailand. *Harvard School of Public Health, Department of Population and International Health: Working Paper Series, No. 3*. 1992.
39. Renton A. Learning the Thai sex trade. *Prospect*. May 2005;110.
40. International Labour Office. *The Sex Sector: The economic and social bases of prostitution in Southeast Asia*. Geneva: International Labour Office; 1998.
41. Nopkesorn T, S. Sungkarom, and R. Sornlum. HIV Prevalence and Sexual Behaviors Among Thai Men Aged 21 in Northern Thailand. *Research Report No. 3. Program on AIDS. Bangkok: The Thai Red Cross Society*. 1991.
42. Hanenberg R, Rojanapithayakorn W. Changes in prostitution and the AIDS epidemic in Thailand. *AIDS Care*. Feb 1998;10(1):69-79.
43. van Griensven G, B. Limanonda, N. Chongwatana, P. Tirasawat, and R. Coutinho. Socioeconomic and demographic characteristics and HIV-1 infection among female commercial sex workers in Thailand. *AIDS Care*. 1995;7:557-565.
44. Burke A, Ducci S. *Desk Review: Trafficking in Minors for Commercial Sexual Exploitation: Thailand*. Torino: United Nations Interregional Crime and Justice Research Institute, Action Programme Against Trafficking in Minors for Sexual Purposes; 2005.
45. Boonchalaksi W, Philip G. *Prostitution in Thailand*. Bangkok: Institute for Population and Social Research, Mahidol University; 1994.
46. Guest P. Guesstimating the Unestimateable: The Number of Child Prostitutes in Thailand. In: Ard-am O, Sethaput C, eds. *Child Prostitution in Thailand: A Documentary Analysis and Estimation on the*

- Number of Child Prostitutes*. Bangkok, Thailand: Institute for Population and Social Research, Mahidol University; 1994.
47. Wilson A. *The intimate economies of Bangkok: tomboys, tycoons, and Avon ladies in the global city*. Berkeley: University of California Press; 2004.
 48. Manderson L. Public sex performances in Patpong and explorations of the edges of imagination. *Journal of Sex Research*. 1992;29:451-475.
 49. Rojanapithayakorn W, Hanenberg R. The 100% condom program in Thailand. *AIDS*. Jan 1996;10(1):1-7.
 50. Joint United Nations Programme on HIV/AIDS. *Evaluation of the 100% Condom Programme in Thailand*. Geneva: Joint United Nations Programme on HIV/AIDS and AIDS Division, Ministry of Public Health; 2000.
 51. Samut Sakhon Health Office data. 100% Condom Use Programme: Samut Sakorn Province, Thailand: Prevalence of STI in sex workers, 1991. In: Rojanapithayakorn W, ed. [Powerpoint presentation] *100% Condom Programme*: World Health Organization China; 2007.
 52. Phitsanulok Health Office. Increase in Condom Use and Decrease in STI Among Sex Workers During "100% Condom" Intervention, Phitsanulok, Thailand, 1990-1991. In: Rojanapithayakorn W, ed. [Powerpoint presentation] *100% Condom Programme*: World Health Organization China; 2007.