



# **The Status and Trends of HIV/AIDS/STI epidemics in Asia and the Pacific**

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**Melbourne, Australia**



**Provisional Report**

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# The Status and Trends of HIV/AIDS/STI Epidemics in Asia and the Pacific

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## **Acknowledgements**

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## **Monitoring the AIDS Pandemic (MAP) Network**

MAP is a collegial network of internationally recognized technical experts seeking to assess the status and trends of the global HIV/AIDS pandemic. MAP was created in 1996, through the collaboration of the AIDS Control and Prevention (AIDSCAP) Project of Family Health International, the Francois-Xavier Bagnoud Center for Health and Human Rights of the Harvard School of Public Health, and the Joint United Nations Programme on HIV/AIDS (UNAIDS).

MAP's more than 100 members in 40 countries are epidemiologists, modelers, economists, and social, behavioural, public health and international development specialists, recruited through a nomination process and currently guided by an Interim Global Steering Committee.

MAP workshops and membership meetings are held in conjunction with regional and international HIV/AIDS conferences. This enables MAP to function on a small budget and to distribute results from its analyses promptly to conference participants. Specific workshops are convened as needed, with expertise drawn from MAP members and other invited experts. Regional experts are encouraged and supported by MAP in the collection, analysis, synthesis and dissemination of regional information, which is then incorporated into MAP's global reports. AIDS service organizations and regional networks of people living with HIV/AIDS are invited to participate in MAP workshops.

MAP works toward building consensus in an atmosphere of collegiality, cultural sensitivity, and mutual respect for conflicting points of view. It functions on the basis of volunteerism and personal and institutional contributions, with limited financial support from international organizations, including UNAIDS, and thus provides an independent perspective on issues raised by the HIV/AIDS pandemic.

The reports represent the views of the individual participants and not the organizations with which they are affiliated.

### **MAP reports are available through the following websites:**

Family Health International

<http://www.fhi.org>

FXB Center for Health and Human Rights

<http://www.hri.ca/partners/fxbcenter>

*UNAIDS*

<http://www.unaids.org>

US Census Bureau

<http://www.census.gov/ipc>

## **Monitoring the AIDS Pandemic (MAP) Network**

### **Chair:**

Karen Stanecki

### **Board Members:**

Chris Archibald

Carlos Caceres

Karl-Lorenz Dehne

Rokiah Ismail

Peter Lamptey

Bernhard Schwartlander

Karen Stanecki

Daniel Tarantola

### **MAP Secretariat**

Karen Stanecki  
International Programmes Center  
Population Division  
U.S. Census Bureau  
Washington, D.C. 20233-8860  
Tel: 301-457-1406 Fax: 301-457-3034  
e-mail: [kstaneck@census.gov](mailto:kstaneck@census.gov)

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## **HIV/AIDS in Asia and the Pacific**

Since its relatively late introduction in the Asia Pacific region, HIV has made substantial inroads. Yet the epidemic situation still varies dramatically between and within countries.

The extent of HIV infection among pregnant women is often used as an indicator of HIV's penetration into the population at large. By this yardstick, several Asian countries have seen serious epidemics. India now has many surveillance sites with more than two percent of pregnant women infected, some rising as high as six percent. Myanmar as well has recorded prevalence rates of up to five percent among pregnant women in some areas in the country. In Thailand, prevention efforts curbed new infections so that prevalence among pregnant women peaked at just over two percent nationally. Infection levels in Cambodia reached above three percent before rates began falling thanks to prevention efforts similar to those in Thailand.

Other parts of Asia have seen only limited HIV spread thus far. In Bangladesh, Hong Kong, Laos, Philippines and South Korea, HIV levels in 2000 were still low in virtually all groups. Unfortunately, there is no guarantee that HIV will remain low indefinitely. After more than a decade of comparatively low HIV infection levels in most population groups, there is recent evidence of rapidly growing epidemics in some populations and geographic areas. A number of countries – e.g., China, Indonesia and Vietnam – are now experiencing explosive epidemics in different population groups.

Some find reassurance in the fact that only three Asian countries – Cambodia, Myanmar and Thailand – have registered nationwide prevalence rates over one percent thus far, as compared with national rates ten or more times higher in some African countries. Unfortunately, national averages are not particularly meaningful in the Asian context where epidemics may have yet to mature. First of all, they mask the uneven geographic spread of HIV. Because of the typical pattern of individual-to-individual spread of the virus through sex and needle sharing, HIV epidemics always begin as geographically localized outbreaks and only later diffuse out over wider areas of the country. Secondly, when an epidemic is concentrated in a certain group, it is misleading to take HIV prevalence in the general population as an indicator of severity. In Myanmar, for example, national HIV rates currently registered in injecting drug users and sex workers are as high as 60 percent and 40 percent, respectively, compared with an estimated national prevalence of only 2 percent.

Lastly, national figures are meaningless in huge countries such as China, India and Indonesia where some states and provinces have more inhabitants than most nations of the world. In India, for example, the states of Maharashtra, Andhra Pradesh and Tamil Nadu each have more than 55 million inhabitants and have registered HIV rates over three percent in pregnant women in some sentinel sites and greater than 10 percent in STD patients, far exceeding the national average of 0.7 percent.

Rather than national averages, it is local data, combined with an understanding of how HIV epidemics evolve, that provide a more realistic basis for assessing the future course of the region's epidemics.

Preceding the 6<sup>th</sup> International Congress on AIDS in Asia and the Pacific, members of the MAP Network met from September 30 until October 2, 2001 to discuss the current status and trends of the HIV epidemics in Asia and the Pacific. This report is the result of those discussions and is based on the experience and work of national and international experts in the region.



## **Out of the shadows: HIV epidemics are emerging across the region**

HIV has been well established in Asia for many years. However, many countries have recorded relatively low rates of infection even in sub-populations with high-risk behaviour. At the time of the last MAP report on Asia from Kuala Lumpur in 1999, only Thailand, Myanmar, and Cambodia were reporting substantial nation wide epidemics, with a number of states in India and provinces in China also heavily affected. In the last two years, the picture has changed dramatically. Indonesia, Iran, Japan, Nepal and Vietnam, for example, have all registered marked increases in HIV infection in recent years, while in China, home to a fifth of the world's people, the infection seems to be moving into new groups of the population.

### ***Drug injection leads to explosive growth in several countries***

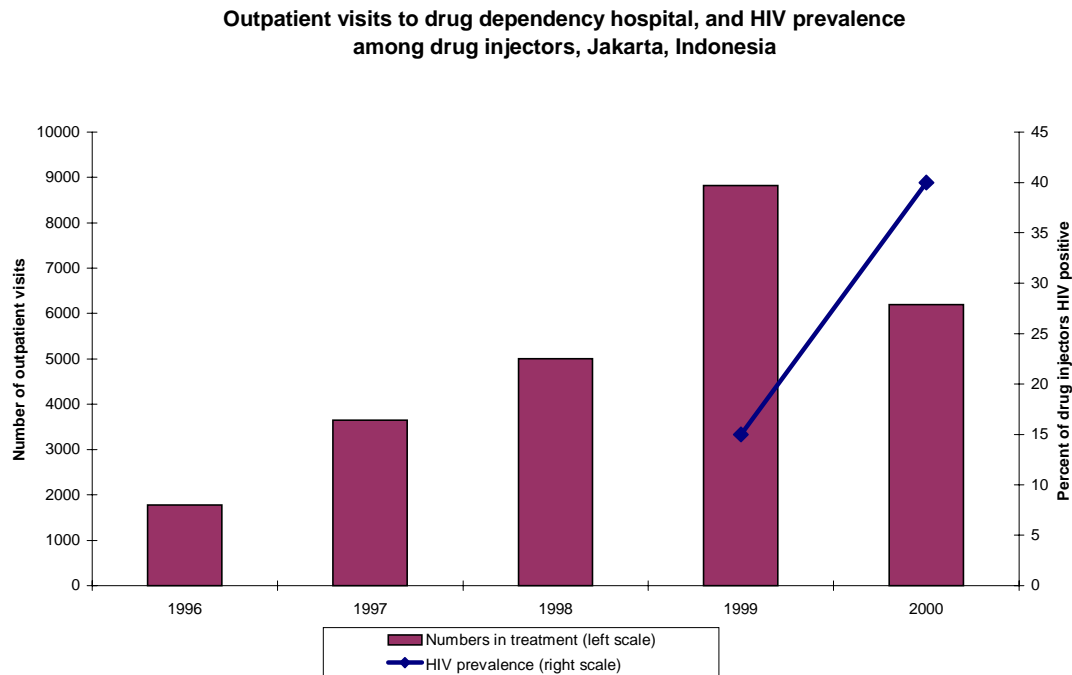
One of the first populations to be affected by HIV in Asia were injecting drug users. In areas where drug injection has been long established, such as Manipur in north-eastern India, Yunnan in south-western China, Myitkyina in northern Myanmar as well as in several urban areas of Thailand, HIV prevalence rates of over 40 percent have been recorded for several years.

Now, drug injectors are emerging as a flashpoint for infection in other countries, too. In the early 1990s, HIV prevention among injection drug users in Nepal had shown some limited success. A local non-government organization, The Lifegiving and Lifesaving Society, implemented harm reduction programmes in Kathmandu that included outreach clinics providing needle exchange and condom promotion. Early surveys during those years showed that HIV prevalence remained under one percent. However, during the mid 1990s no new HIV prevalence surveys were conducted. By 1998, half of IDUs in a survey in Kathmandu tested HIV positive.

In early 1999, the National Centre for AIDS and STD Control of the Ministry of Health in Nepal conducted an HIV prevalence survey among injecting drug users in 19 cities throughout the country. The results startled the HIV prevention community. The survey showed a national overall HIV prevalence of 40 percent, with Kathmandu, the capital, registering 50 percent HIV positive among its IDU population. These figures served as a call to action for the government, NGOs, and international donors. A coalition of these organizations is now planning a major initiative which seeks to provide enhanced prevention and care to IDUs throughout the country.

In Indonesia, the very phenomenon of drug injection was little known until recently. The bars in Figure 1 show the number of people in treatment at Jakarta's main drug addiction hospital. The rise over time is clear to see and unfortunately it is not possible to take heart from the drop recorded in 2000. Drug treatment workers attribute it to competition from many other drug treatment centres that have opened up recently to meet surging demand.

There are other indications, too, that drug use is on the rise. The major referral hospital in Jakarta reported that the number of people arriving at the emergency room suffering from drug overdose tripled between 1998 and 1999, the most recent year for which statistics have been compiled. As the line in Figure 1 shows, HIV prevalence has risen dramatically among injectors



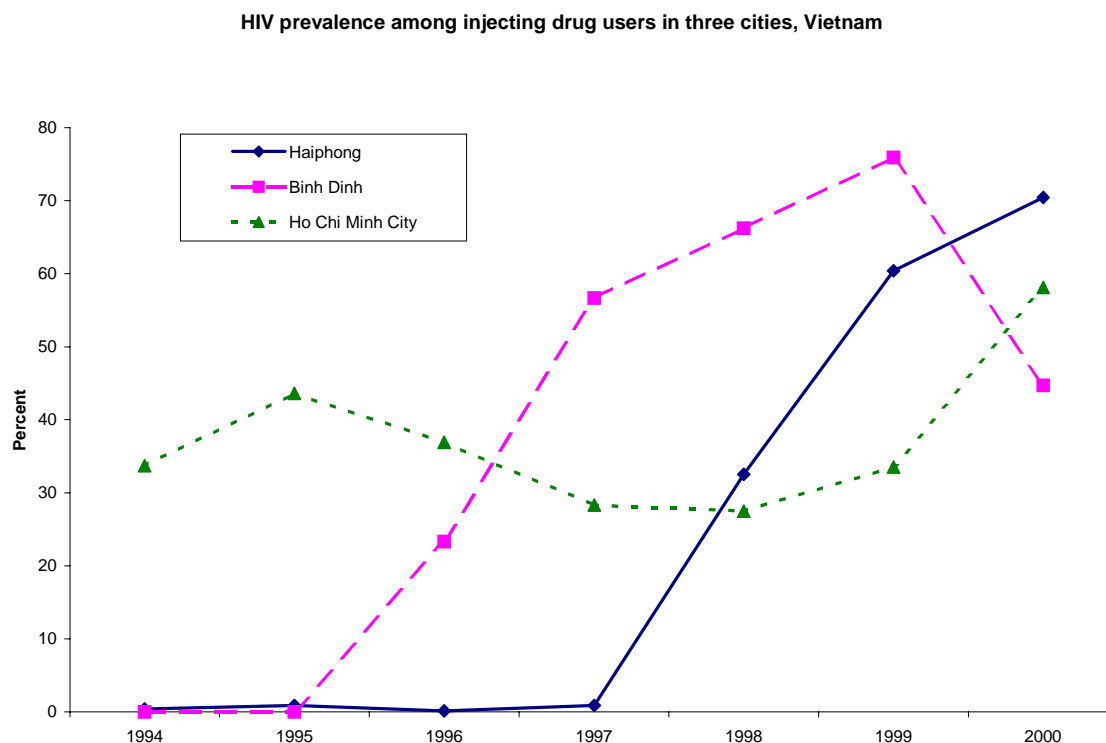
**Figure 1**

HIV infection in injectors was not considered worth measuring until 1999/2000 year, when it had already reached 15 percent. A year later, 40 percent of injectors in treatment in Jakarta were already infected. In Bogor, in West Java province, a quarter of injectors tested were HIV-infected, while in drug users tested in prison in Bali, prevalence was 53 percent.

HIV infection surfaced in drug injectors in Iran in two prison populations in 1996. At that time, 29 percent of injectors in these two prisons were found to be HIV infected, even though testing throughout the early 1990s found only sporadic cases. Iran estimates it has some 200,000 drug injectors in the population, and believes the number is rising because shifting drug trafficking patterns are making heroin more readily available. By 2001, 10 prisons had reported HIV infection among injectors, with one site reporting prevalence as high as 63 percent.

In Iran as in Indonesia, China and other countries, HIV prevalence was higher among injectors in prison than among injectors in treatment, where it was recorded at 12 percent in 2001. This may be in part because the highest risk injectors are most likely to get arrested, but it also almost certainly indicates that some transmission of HIV is taking place on in jails themselves. Most countries report at least some injecting inside prison, and because needles are very difficult to access in these situations, sharing is almost universal and the potential for the spread of HIV is significant. Because of this, public health officials are trying to extend prevention programmes for drug users into the prison system.

Vietnam, which has a longer history of injecting drug use, has also seen a recent jump in HIV infection in several sites, as Figure 2 shows.



**Figure 2**

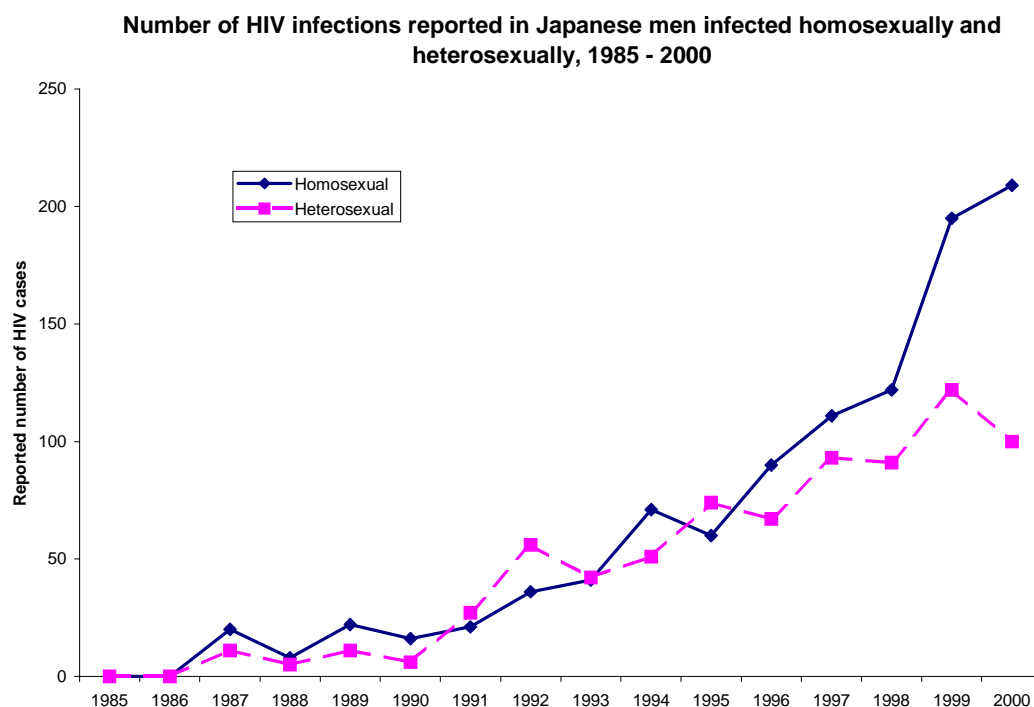
### ***Men who have sex with men: a neglected population***

In the early days of the AIDS epidemic, many cases were found among men who have sex with men. As Asian epidemics progressed, however, heterosexual transmission and injecting drug use came to dominate the HIV landscape, and male-male sex was increasingly ignored or was never recognized as a risk behaviour in many nations. This does not, however, mean that the behaviour disappeared. In fact, male-male sex exists in all societies and in many Asian countries there are culturally accepted forms of male-male sex. Transvestites and transsexuals – *katoey* in Thailand, *waria* in Indonesia, *hijra* in Bangladesh, eunuchs in India – commonly sell sex to men. In many urban centres where the social restrictions of the past are beginning to be lifted, a more openly “gay” scene is beginning to emerge.

HIV prevention activities for these men – whether they are buying or selling sex or having sex with men without payment -- are few and far between. Partner turnover is often high, and condom use is relatively low. In the few countries where HIV prevalence among MSM has been measured, it is found to be high. Cambodia, for example, measured infection in MSM in 2000, and found that 15 percent were infected. Similar levels of HIV are recorded among male sex workers in Thailand, while in Malaysia HIV prevalence among men who have sex with men has reached levels of around 10 percent in several states. In the Philippines, which currently records very low levels of HIV in any group, three out of 10 sentinel sites have found HIV infection in men who have sex with men. Some 15 percent of respondents in a

recent nationwide survey of male sexuality said they had sex with another man in the previous year.

In Japan, the number of HIV infections detected in men who have sex with men has risen sharply in recent years, as Figure 3 shows. Male-male sex now accounts for more than twice as many infections in men as heterosexual sex in Japan. This is a major departure from past patterns: until two years ago the number of new infections reported in both groups were roughly equal.



**Figure 3**

### ***Sex work moves to centre stage in some epidemics***

In some countries in which HIV has long been found in injecting drug users, it is now emerging as a major threat among men who buy sex and the women who sell it to them. This is extremely worrying, because of the sheer number of men who regularly pay for sex in many countries in Asia. In country after country, years of low HIV infection rates in sex workers are giving way to sharp rises. Most HIV surveillance systems do not include clients of sex workers. However, men attending clinics seeking treatment for sexually transmitted infections are sometimes used as a proxy for clients of sex workers. Vietnam is one of the countries in which HIV prevalence has risen very quickly among sex workers in recent years, and as Figure 4 shows, HIV prevalence in STI clinic patients has forged upwards in its wake.

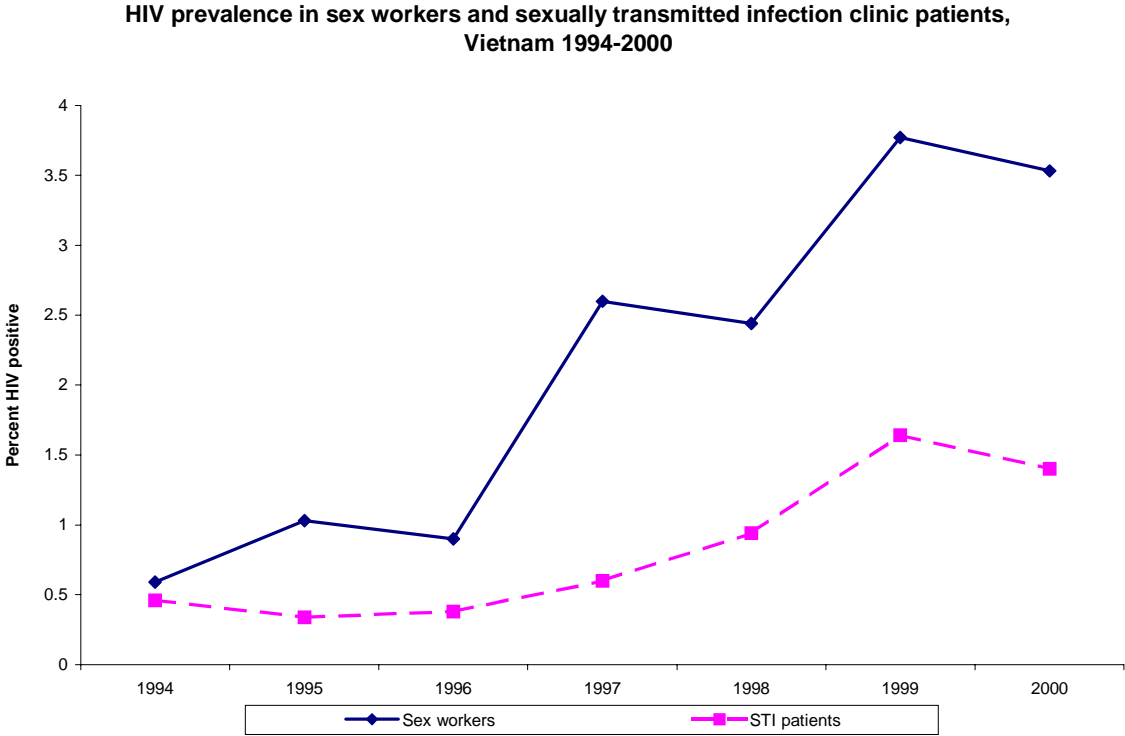


Figure 4

Also worrying is China, where HIV testing among sex workers in sentinel sites has recently recorded rapid rises in infection rates.

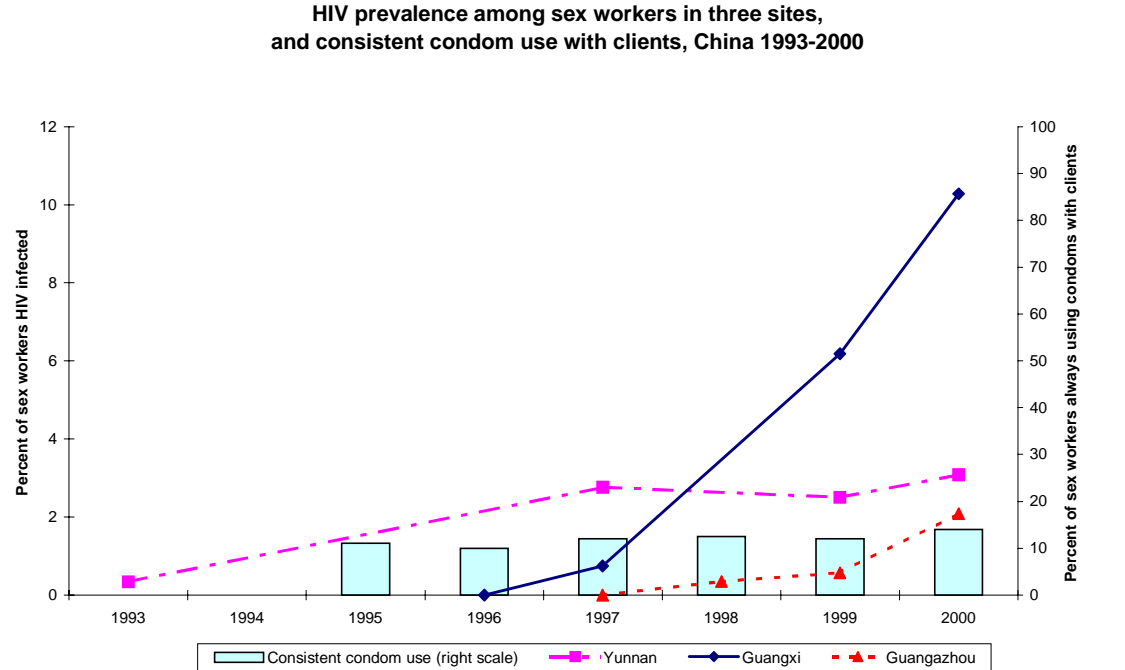


Figure 5

The three lines in Figure 5 show the rise in HIV infection in sex workers in three provinces, while the bars show that consistent condom use among sex workers is low. As millions of men frequent sex workers every year, it is inevitable that HIV infection among these men will rise, and that the fatal virus will eventually get passed on to their wives and regular girlfriends. Indeed Figure 14 on page 3 shows that sexually transmitted diseases are already shooting upwards in China.

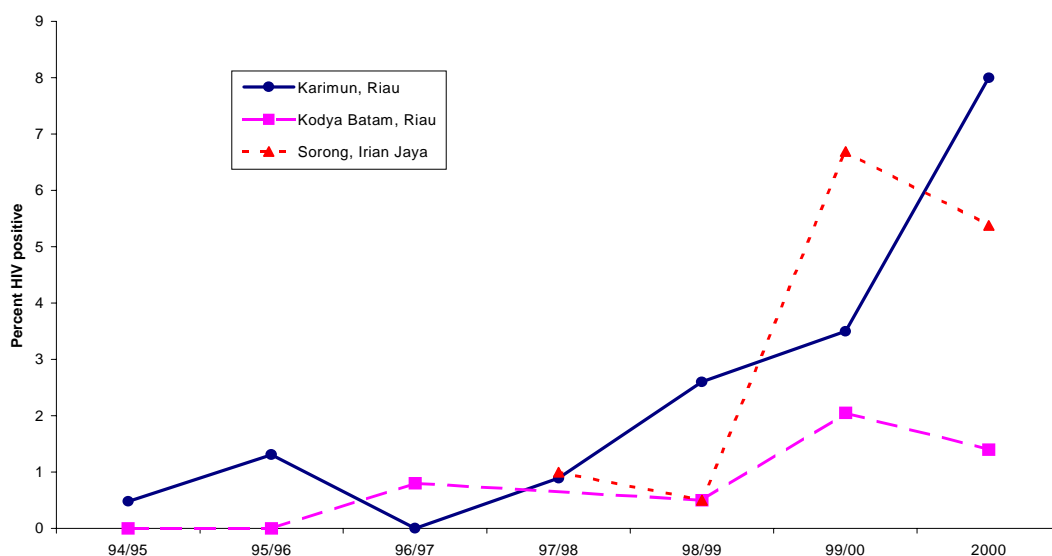
### ***Indonesia—HIV takes off after years of silence***

Indonesia provides an example of the sudden emergence of HIV after long years of silence. The country has tested sex workers anonymously for HIV infection since 1988, expanding from two cities to cover 15 provinces. Year after year this system registered virtually no HIV infection. This was puzzling, because other parts of the surveillance system, which look at STIs and risk behaviour, indicated that sex work was common, condom use was very low, and other sexually transmitted infections were highly prevalent. Between 30 and 50 percent of sex workers were consistently found to be infected with gonorrhoea or chlamydia.

Information collected in behavioural surveillance between 1996 and 2000 in three Indonesian cities show that there is a huge gap between the percentage of female sex workers and clients who know that they will not get AIDS if they always use condoms and those who said they used condoms in sex work. While four out of five sex workers and clients knew that consistent condom use prevents HIV infection, consistent use of condoms remained low between four percent and 12 percent between 1996 and 2000.

Because these levels of risk behaviour did not appear to produce an HIV epidemic for nearly 10 years, a certain feeling of “safety” set in. Some even thought that perhaps there were factors in Indonesian society which would continue to protect the country against HIV indefinitely. Unfortunately, this proved not to be the case.

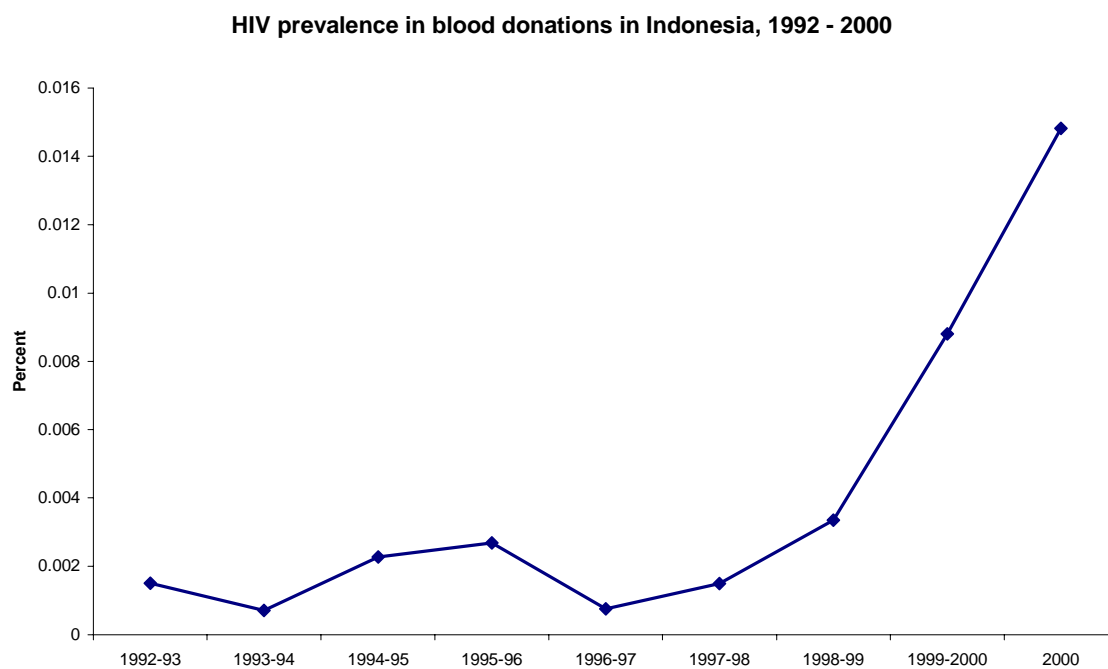
**HIV prevalence among female sex workers in three Indonesian cities, 1994 - 2000**



**Figure 6**

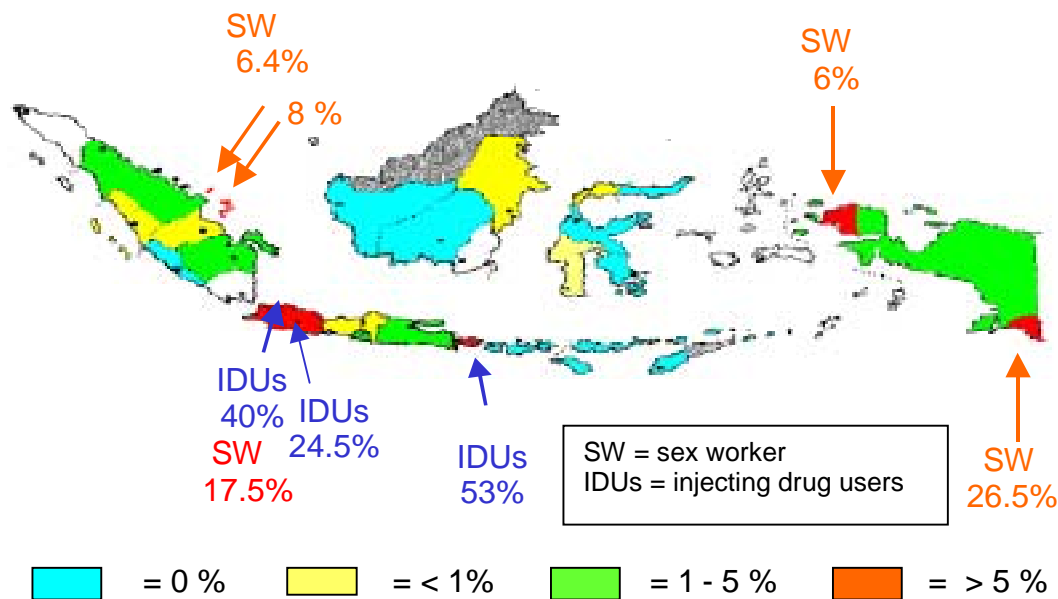
Figure 6 shows trends in HIV infection from three cities at both ends of the sprawling archipelago. Other sites have registered similar rises.: For example among women working in massage parlours in the capital Jakarta, HIV was measured at 18 percent in 2000.

While HIV prevalence in the general population remains very low, with fewer than one pregnant woman in 400 testing positive for HIV, there are indications that HIV is filtering outwards into society. As Figure 7 shows, blood donor data show a sharp rise in infection, with a 10-fold rise in HIV prevalence in blood donors since 1998.



**Figure 7**

Between exploding HIV infection among injecting drug users,(see earlier in the report) steep rises in sex workers and low but exponentially rising infection in blood donors, the landscape of HIV infection in the world's fourth most populous nation is changing quickly. The map shows provinces in which exceptionally high rates of infection have been recorded in sex workers and drug users. The challenge for the leaders of Indonesia's newly decentralised provincial governments will be to institute prevention programmes targeted at the highest risk behaviours and implemented on a huge scale.



**Figure 8 : Highest HIV prevalence found in surveillance in 1999 – 2000 in various population groups and provinces of Indonesia**

If there is one clear lesson to be learned from Indonesia, it is that we cannot afford to ignore the warning signals sent by risky behaviour. Where risk behaviour exists, HIV infection will eventually go, even if it takes some years to appear. This should be a cause of great concern to other countries, such as the Philippines and Bangladesh, which have high levels of risk behaviour, but have yet to record any significant levels of HIV infection.

### ***Low levels of HIV but signs of risk***

Sex work exists at significant levels in Bangladesh and the Philippines, and condom use is low. In Bangladesh, sex workers in brothels as well as on the streets reported rather high client turnover, by Asian standards. Women working in brothels nationwide averaged 19 clients a week, and street workers reported between 12 and 16 in different cities. Consistent condom use is among the lowest in the region. This was not entirely surprising, given the extremely violent conditions in which these women do their jobs. In one site, two thirds of street-based sex workers reported being raped by police or thugs in the past year, a situation not conducive to condom use. Injecting drug use is common in Bangladesh too, and needle sharing is a norm. Over 60 percent of injectors surveyed in northern Bangladesh in 2001 had shared injecting equipment in the week before the survey and in central Bangladesh it was fully 93 percent. In both areas, needle sharing had risen significantly since the previous survey a year earlier. To complete the picture, there is an active male-male sex scene, both paid and non-paid. Figure 11 on page 3 shows that the risk is compounded by significant overlaps among all of these different groups with high risk behaviour.

At present, HIV infection is still virtually absent from most of these populations in Bangladesh. But it is extremely likely that once it is introduced, it will spread rapidly through these extended networks of risk.

The question of when and how HIV gets introduced is problematic. This is discussed further later in this report. But in countries with extensive overseas migrant populations it is highly



likely that it will happen sooner or later. Anywhere between five and 12 million Filipinos work overseas, and a quarter of the country's 1,500 reported HIV cases so far have been in workers returning from abroad.

The relatively high levels of sexually transmitted infections recorded in the Philippines -- together with behavioural data showing low levels of condom use -- may provide fertile ground for HIV spread once it is introduced and reaches a critical mass.

**Table 1: Prevalence of Sexually transmitted infections in Angeles City, Philippines.**

	<b>Registered female sex workers</b> (%infected)	<b>Freelance sex workers</b> (%infected)	<b>Men who have sex with men</b> (%infected)	<b>Clients of sex workers</b> (%infected)
<b>Chlamydia</b>	37	35	12	16
<b>Gonorrhoea</b>	15	38	1	16
<b>Trichomoniasis</b>	5	8	1	1
<b>Syphilis</b>	4	24	2	5
<b>Bacterial Vaginosis</b>	56	71	-	-

## VCT and harm reduction programmes in Iran

Before 1999, VCT was available in Iran's 85 blood banks. In 1999, a large VCT programme was started, with each urban district having at least one VCT center. VCT services are provided according to Ministry of Health guidelines. In addition to the VCT services provided by blood banks, there are now VCT centers in health centers run by the Ministry of Health, and in rehabilitation centers run by the Welfare Organization and the Justice Department.

Counseling is provided by psychologists, psychiatrists, general practitioners and other health care workers, who have been specifically trained for this purpose. The training of the counselors has been provided by the Ministry of Health. HIV tests are performed in the laboratories of the blood transfusion organisation. Sera are screened by two different ELISA tests, and ELISA-positive sera are confirmed by Western Blot.

All VCT services are provided free of charge. Most clients come directly on their own initiative, while others are referred, including family members of IDUs and of HIV-positive individuals. Referred clients who do not report any risk or risk behaviour for themselves are advised that they do not need an HIV test. However, any client who wishes to take a test, can do so. In 18 months, over 75,000 clients have been counseled at the VCT centers, and over 61,000 tested.

The harm reduction programme in Iran is very recent. It was started in 2000 in the capitals of the 3 provinces that are most affected by injecting drug use (Kermanshah, Shiraz, Tehran). It is a pilot project initiated by the Ministry of Health.

The harm reduction services are provided in out-patient clinics. These clinics also

provide services for HIV-positive patients (including counseling, clinical management including antiretrovirals and laboratory tests, and social support), as well as education, counseling and management for sexually transmitted infections. All services are free of charge, and confidential. Injecting drug users are provided with counseling, methadone treatment, and needle exchange. For example, the clinic in Kermanshah sees 700 clients per month, most of them HIV-positive individuals and their family members. About 150 clients are on methadone, and about 50 come for needle exchange. Initial reactions are positive, both from the staff and from the clients. In mid-2001, the results of the pilot programme were presented to the cabinet and the president. Based on the initial results, the continuation and expansion of the programme were approved. There are plans for the extension of the harm reduction programme to 15 more clinics in 2002.

## **Bridges - links between different sub-populations**

What determines whether or not an HIV epidemic spreads outside the groups of people with highest risk behaviour? Principally, it is due to the sexual linkages between the populations with highest risk behaviour and any population that has a lower level of risk. Behavioural surveillance can help to identify these sexual networks. This information can in turn be used in models to help estimate the future shape of the HIV epidemic in a country, and to gauge the potential effectiveness of different prevention approaches.

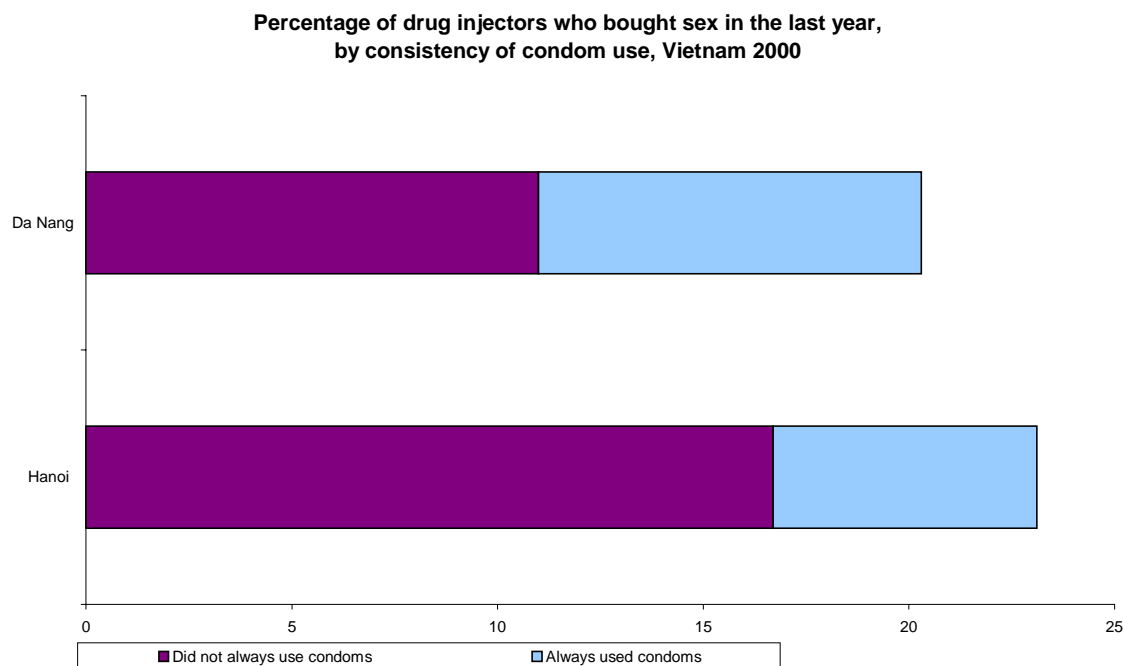
### ***The interface between sex and drugs***

Sharing injecting equipment is one of the most effective ways of spreading an HIV epidemic. Studies in several Asian countries have shown that there is no shortage of risky behaviour among drug injectors. We know that effective interventions are possible in this group, yet drug injectors are frequently neglected in prevention programmes. This is due to the fact that injection drug use is usually illegal and a politically difficult issue, but also to the widespread perception that HIV epidemics among drug users are “self-contained”. Therefore there is little political will to promote HIV prevention for drug-using communities.

In addition to transmission through the sharing of injection equipment, injecting drug users can also transmit HIV to their sexual partners. In some western countries with long-established epidemics of injecting drug use, where most addicts have been using drugs for many years and are older, sexual activity among injecting drug users may be relatively limited. However, this is certainly not the case in many Asian epidemics. Indeed, behavioural surveillance data show sexual links between drug users and other communities. In the first place, male and female drug injectors sometimes sell sex, and some male drug injectors are regular clients of sex workers. If these individuals are infected with HIV while sharing needles with other drug injectors, there is every chance that they will go on to infect sex workers who in turn may infect clients who have nothing to do with the world of injectors.

In Vietnam’s two largest cities, Hanoi and Ho Chi Minh City, for example, a significant minority of street-based sex workers said they had taken drugs. In Hanoi, one sex worker in five reported recent drug injection, while in Ho Chi Minh City, 16 percent reported injecting. In both cities, over a third of street-based sex workers did not consistently use condoms, and rates of condom use with regular clients and non-paying partners were predictably much lower.

Drug users buy sex as well as sell it. Figure 9 shows the proportion of drug injectors who had sex with a sex worker in the last year. Nearly a quarter of IDUs in Hanoi and over a fifth in Da Nang said they had bought sex in the past year, and most did not use condoms. Since HIV prevalence in this group has recently been recorded at above 60 percent in some cities in Vietnam, this clearly represents a worrying potential for the wider spread of HIV.

**Figure 9**

The situation was similar in Bangladesh. Some 14 percent of female sex workers based on the streets of one southern city said they had injected drugs, and in brothels, six percent said they were injectors. Compared with Vietnam, far higher proportions of injectors in Bangladesh paid for sex. Between half and three-quarters of male drug injectors in different cities had bought sex from women in the past year, and close to one in ten also bought sex from men or transvestites. Less than a quarter of these injectors reported using a condom the last time they paid for sex.

Drug injectors also have non-paid sex partners. In a survey in the Indonesian capital Jakarta during 2000, over a third of sexually active respondents said they had paid for sex in the last year, but fully 59 percent said they had casual sex with multiple non-paid partners in that time. Condom use in all of these relationships is limited. Only half of the drug injectors buying or selling sex used a condom with their most recent paid partner, and less than a quarter used one in their most recent casual encounter. Predictably, consistent condom use was even lower. A very low proportion of male injectors reported that either their regular or their non-regular sex partners were also drug injectors. It is therefore likely that those women and their infants are at risk for HIV principally because of the injecting behaviour of their male partners.

These behavioural data suggest that the theory of a “self-contained epidemic” among drug injectors does not hold true for Asia.

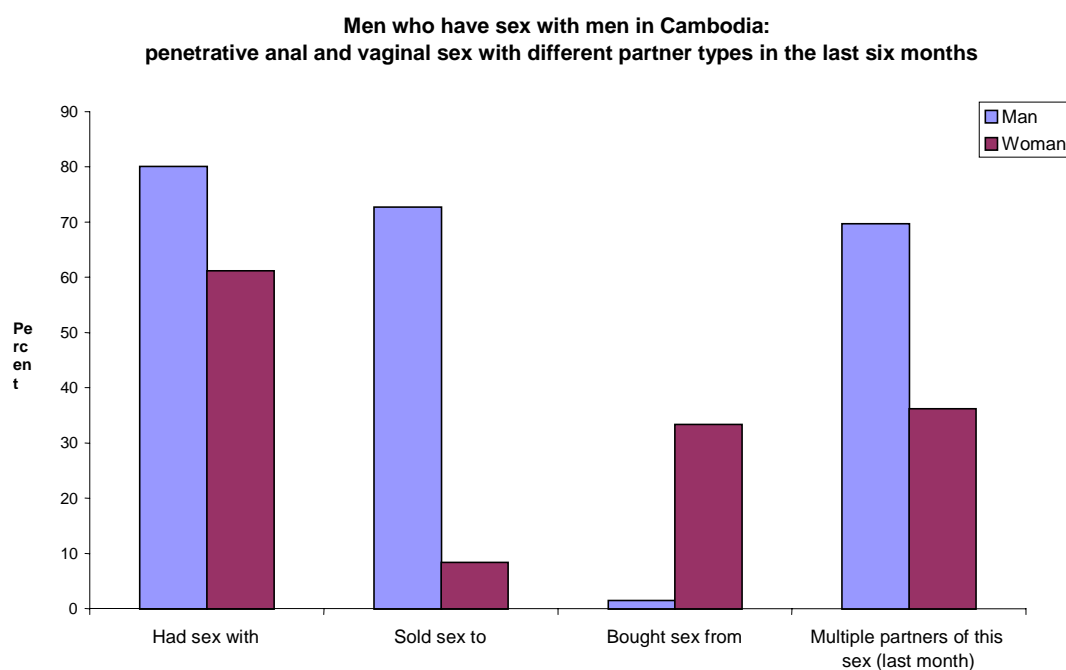
### ***Men who have sex with men and women***

The idea that epidemics can be self-contained within risk groups is sometimes extended also to HIV epidemics among men who have sex with men. Again, it does not seem to be supported by the data.

While communities self-identified as “gay” are found throughout Asia, they co-exist with a more extensive practice of sex between men who interact with many different types of partners, as was discussed previously. In some countries, transvestites and transsexuals sell anal sex to men who identify themselves as heterosexual. These transvestites are often culturally well defined (for example *waria* in Indonesia, eunuchs or *hijra* in Bangladesh and India, *katoey* in Thailand), and high proportions are active in sex work. But by no means are all male sex workers transvestites. Other male sex workers sell sex to men and to women, and many also have sex with people who are not their clients.

The data in Figure 10 come from a recent study of over 200 MSM in Cambodia. Most of these men sell sex to men, but over 60 percent also have sex with women, and many go to female sex workers. Fewer than half of the men who sold sex used a condom with their last paid partner.

Overall, 40 percent of men in the study had sex with both men and women in the past month, and a minimum of 13 percent had unprotected penetrative sex partners of both sexes in that time. HIV prevalence among these men was around 15 percent. Inevitably, HIV will infect many of their female partners, and where those partners are sex workers it will also be passed on to their heterosexual clients.



**Figure 10**

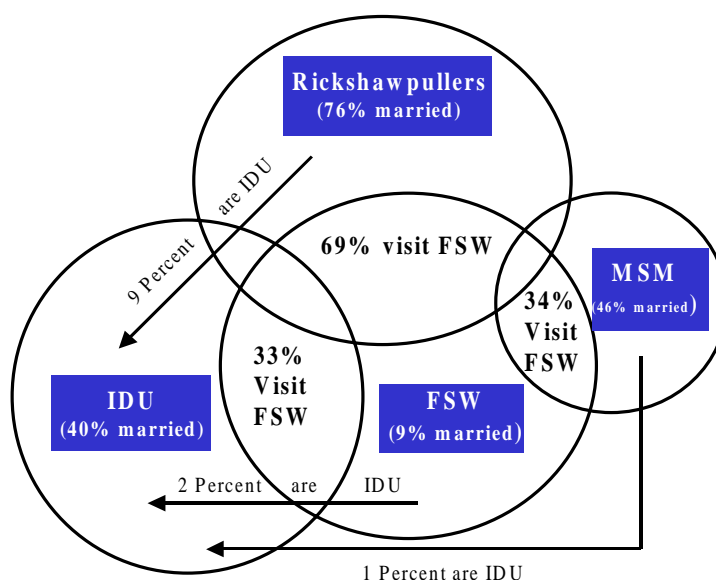
Similarly in northern Thailand, compared to exclusively heterosexual men, men who had sex with men had twice the number of lifetime female partners, were more likely to visit female sex workers, and were less likely to use condoms.

In Indonesia, over half of transvestites reported a regular non-commercial partnership with another man, and 15 percent of these partners were married.

It is important to note that these links are not necessarily between only one group and another. In some parts of Asia there are multiple simultaneous links among all of the higher behavioural risk groups. One such example is Bangladesh, as illustrated in Figure 11. In

behavioural surveillance studies among MSM, IDUs, female sex workers (FSW), and rickshaw pullers (a male population), sexual or injecting links were found between each of these groups at relatively high levels. Also of note, a substantial portion of each group except sex workers were married, potentially putting their wives at risk.

### Potential spread of HIV from high risk groups to the general Population, Central Bangladesh



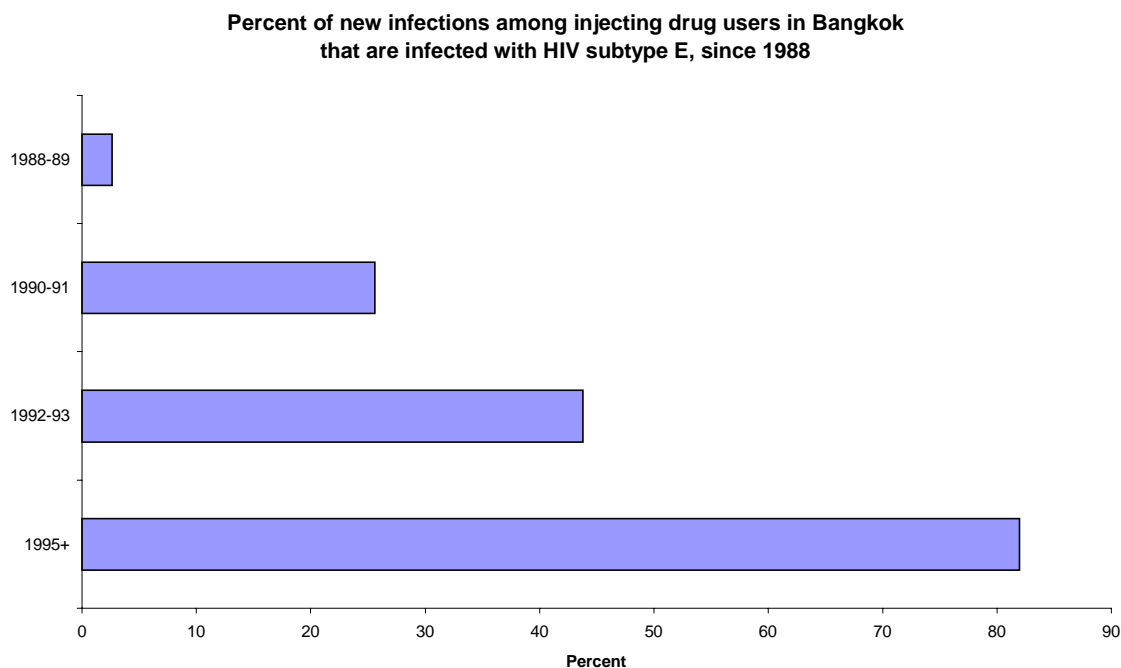
**Figure 11**

*FSW = Female sex worker IDU = Injecting drug user MSM = Men who have sex with men*

### ***Evidence for links between epidemics: molecular epidemiology***

Using the techniques of molecular epidemiology one can identify different subtypes of HIV. In the early days of the Thai epidemic, the subtype most common among injecting drug users in Bangkok was subtype B, while that among sex workers and clients was almost entirely subtype E. This subtype “segregation” has been frequently used to argue that the injecting drug use and heterosexual epidemics in Thailand were not related to one another.

But a closer examination of molecular epidemiology findings in Thailand shows a more dynamic situation, which is actually more indicative of linked epidemics. In subsequent studies in Bangkok, it was found that the percentage of new HIV infections in injectors attributable to subtype E (the “heterosexual” subtype) increased over time, as Figure 12 shows. Those newly acquiring subtype E were younger and more likely to be single than those getting subtype B; young, single men are also the ones more likely to be sexually active.



**Figure 12**

A likely interpretation of these findings is as follows. An initial outbreak of subtype B infection occurred among Bangkok injectors. At the same time, sex work was rapidly spreading subtype E. Infection levels at some Bangkok drug treatment centers went from zero to almost 40 percent in less than eight months and infection levels among sex workers rose at comparable rates. However, as many of the younger, more sexually active injectors visited sex workers, they acquired subtype E and then retransmitted it both to other sex workers and to other drug users through needle sharing. Over time, the behavioural linkages among these epidemics and the competitive pressures among the subtypes resulted in subtype E becoming dominant.

Furthermore, in upper northern Thailand, where the epidemic was most severe, the molecular epidemiology never showed strong subtype segregation. In small samples of drug user in Chiang Mai tested in 1991, two-thirds of the infections were already subtype E.

Molecular data among men who have sex with men and male sex workers in Thailand also support the idea of links to the heterosexual subtype E epidemic. In Bangkok, a study among homosexual and bisexual men found that, of those infected, 24 percent were infected with subtype E, six percent were infected with the same subtype B that was found in injecting drug users in the late 1980s, and 52 percent with a different form of subtype B. In northern Thailand, a study among male sex workers found 94 percent infected with subtype E.

In neighbouring Myanmar, the subtype situation is even more complex. In Yangon, both IDUs and heterosexuals have predominantly subtype B, while in border areas closer to Thailand, much more subtype E is present in both IDUs and heterosexuals, but neither subtype dominates. And in Vietnam, subtype E is found in both sex workers and drug users. Thus, molecular epidemiology suggests that epidemics in different sub-populations are neither homogeneous nor isolated from one another.

India – The launch of large scaled interventions to curb the largest epidemic in the region

With an estimated total of 3.9 million people living with HIV/AIDS at the end of 2000, India is the country with the largest epidemic in the region. Following initial prevention efforts primarily focussed on the health sector, in 1999, there was a shift in paradigm with the implementation of a multi-sectoral HIV/AIDS prevention and control programme that mainstreamed intervention efforts into relevant sectors. Decentralization of the programme to state levels was introduced to improve the effectiveness of planning and implementation.

There has been an encouraging political response to the epidemic in recent years. The Prime Minister has urged the members of parliament to recognize this epidemic as the most important public health problem in the country. He also reviewed the implementation of the programme with chief ministers of high prevalence states. The business and industrial communities have shown keen interest to address the challenges posed by the epidemic in their sectors. Recently, the Prime Minister inaugurated The “Business Coalition Trust on HIV/AIDS in India”.

Large scale interventions among populations with high risk behaviour aim at 80percent coverage in the next five years. Today, 540 such interventions are in place in all states in the country. These interventions aim at bringing about behaviour change, and deliver services (such as counselling, promotion of condom use and STI treatment) to populations that are usually hard to reach and not appropriately covered by general services.

Massive school AIDS education programmes were also launched, aimed at prevention of HIV in the general population. During 2001, 20-25percent of schools will be covered with school AIDS education programmes, including peer education. “University Talk AIDS” programmes implemented in close collaboration between the National AIDS Control Programme (NACO) and the department of youth affairs have already reached about 4 million college students. More than 145 Toll free AIDS help lines already exist in various cities in the country; and 265 VCT centres provide counseling and testing facilities, mostly in high prevalence states. By 2002-2003, each district will have at least one VCT centre. Also, effective legislation is in place to ensure mandatory screening of blood for all blood transmissible infections including HIV in all 1,325 blood banks in the country.

Recognizing the important links between STIs and HIV, 504 STI clinics are supported to enhance their diagnostic capacity with drugs for the management of STIs. A family health awareness campaign, organized once a year, is targeted at all 15-45 year olds to increase knowledge and provide STI services. Social mobilisation at grassroot level and availability of drugs are key elements of this campaign. So far, responses in the population during the recent round have been very positive.

Management and care of HIV/AIDS patients with opportunistic infections is another focus of the programme. Twelve special community care centres have been established initially in high prevalent states to provide care to terminally ill patients. To ensure effective integration of HIV/AIDS prevention activities collaborations are also strengthened with other programmes including the Reproductive and Child Health Programme, the Revised National Tuberculosis Control Programme, and the Women & Child Nutrition Programme.

These are encouraging changes in direction, but given the huge size and diversity of the country, curbing the large Indian epidemic poses tremendous challenges. These efforts will need to expand rapidly to achieve high coverage, be sustained, and be monitored closely for effectiveness.



## Where is the epidemic going?

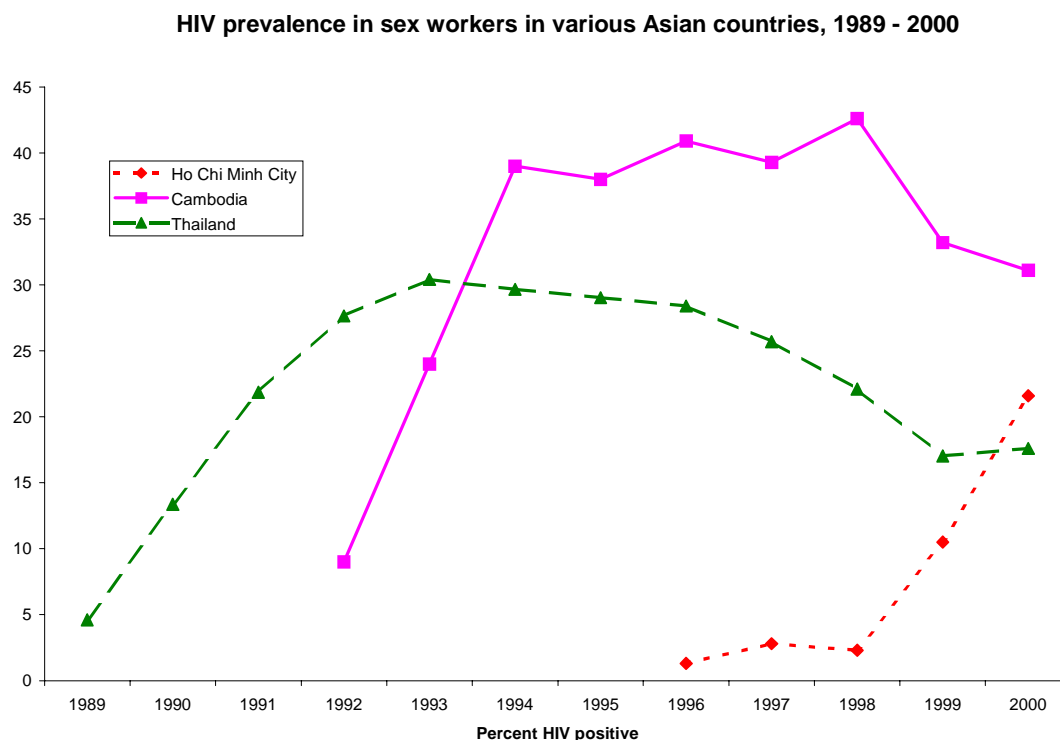
### *Timing of HIV epidemics – the unknown factor*

A number of factors determine whether HIV will spread once introduced into a population, including the frequency of high-risk sex and needle sharing, the proportion of the population engaging in these behaviours, the mix of sex partners, and the levels of other sexually transmitted infections. Although these factors influence HIV transmission individually and in combination, the fact that HIV epidemics consist of multiple, overlapping epidemics evolving on different time scales makes them inherently unpredictable. Even when population groups engage in sufficient risk behaviour to support the growth of an epidemic, it can take a surprisingly long time for HIV to reach epidemic levels. In Thailand, for example, although HIV was introduced in 1984 and had started spreading heterosexually by 1985, explosive heterosexual transmission did not occur nationally until 1989. Similarly, in Kathmandu, Nepal, despite documented high levels of needle-sharing in the early 1990s, HIV infections among injecting drug users remained negligible until they started rising rapidly six or seven years later. By 1997, half the users were infected.

Thus, the mere presence of high levels of risk behaviour does not guarantee immediate epidemic growth, even though the potential for growth still exists. This raises concerns for countries such as Bangladesh, where behavioural surveillance has shown high levels of risk, especially among sex workers and men who have sex with men, and yet so far HIV prevalence remains low.

In order for an epidemic to expand, the average infected person must pass the virus on to more than one person. How quickly new infections occur then depends on a number of factors, such as the frequency of risk behaviour. For example, decreasing the number of clients of sex workers from two per night to one per night may make the difference between an epidemic that takes five years to begin rapid growth and one that takes 10 to 15 years.

The efficiency of the mode of transmission is another factor affecting the rate of HIV spread. For example, HIV rates among injecting drug users can grow very rapidly. In Bangkok, prevalence grew from virtually nothing to almost 40 percent in less than eight months and in Manipur, India, prevalence grew from a few percent to over 80 percent in only three to four years. Similarly, HIV infection levels among sex workers and men with sexually transmitted infections (most of whom buy sex) can also increase rapidly, as Figure 13 shows. In contrast, the husband-to-wife component of the epidemic often lags behind the sex work epidemic by several years. In Thailand, infections among wives of HIV-infected clients of sex workers peaked approximately five years after the infections among their husbands.



**Figure 13**

Although we cannot predict the future scope or time-line of HIV spread in the Asian region, there are two certainties. The first is that low rates today are no guarantee of low rates tomorrow. Early in the Thai epidemic, for instance, no one could have foreseen that by 1994, 10-15 percent of the entire adult population of certain northern provinces would become HIV-infected.

The second certainty is that the current highest national infection levels in the region of two to three percent do not represent a “natural limit” imposed by behaviour patterns. Many experts believe that the HIV levels now being recorded in Cambodia and Thailand could have been much higher in the absence of strong intervention programmes. These two countries undertook effective prevention with good coverage of sex worker/client networks and thereby dramatically changed the subsequent course of their epidemics. Countries that still have few HIV infections would do well to draw inspiration from these interventions rather than comfort from their currently low infection rates.

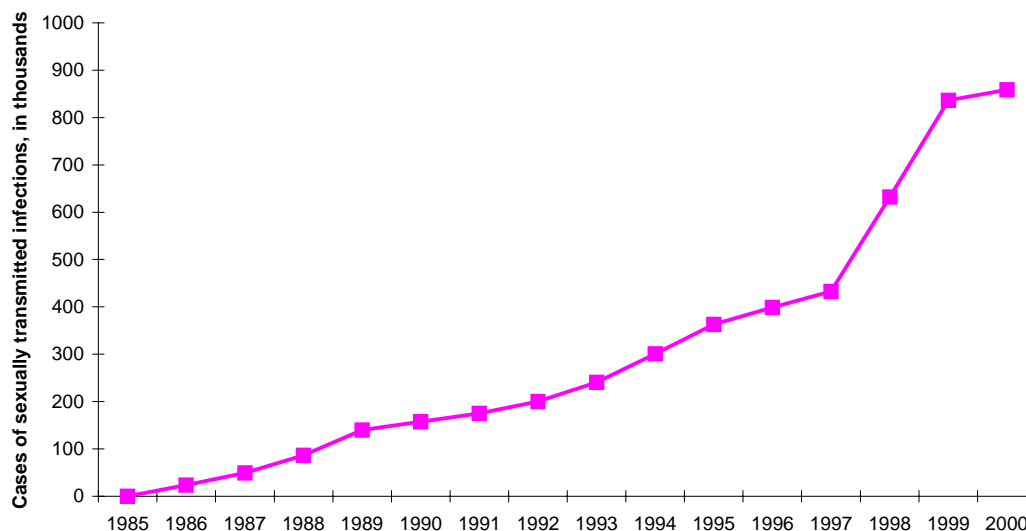
The unpredictability of the future of any given HIV epidemic, and the fact that infection rates may quickly increase even after years of very low levels, is well illustrated by recent data from three countries - China, Indonesia and Japan.

### ***Societies are changing***

China's HIV epidemic was initially concentrated among injecting drug users and, in some areas, among those affected by unsanitary blood collection practices. However, the opening of Chinese society has changed sexual practices and this has resulted in recent increases in sexually transmitted infections (STIs), including HIV. Figure 14 shows that reported STI infections in China slowly increased during the late 1980s and early 1990s, and then increased dramatically from 430,000 cases in 1997 to 860,000 cases in 2000. This indicates that

unprotected sex with non-monogamous partners is on the rise in China. Since infection with curable STIs also greatly increases the efficiency of HIV transmission, these changes in social mores pose a double challenge to those working to prevent the spread of HIV in the world's most populous nation.

**Cases of sexually transmitted infections treated, China, 1985-2000**



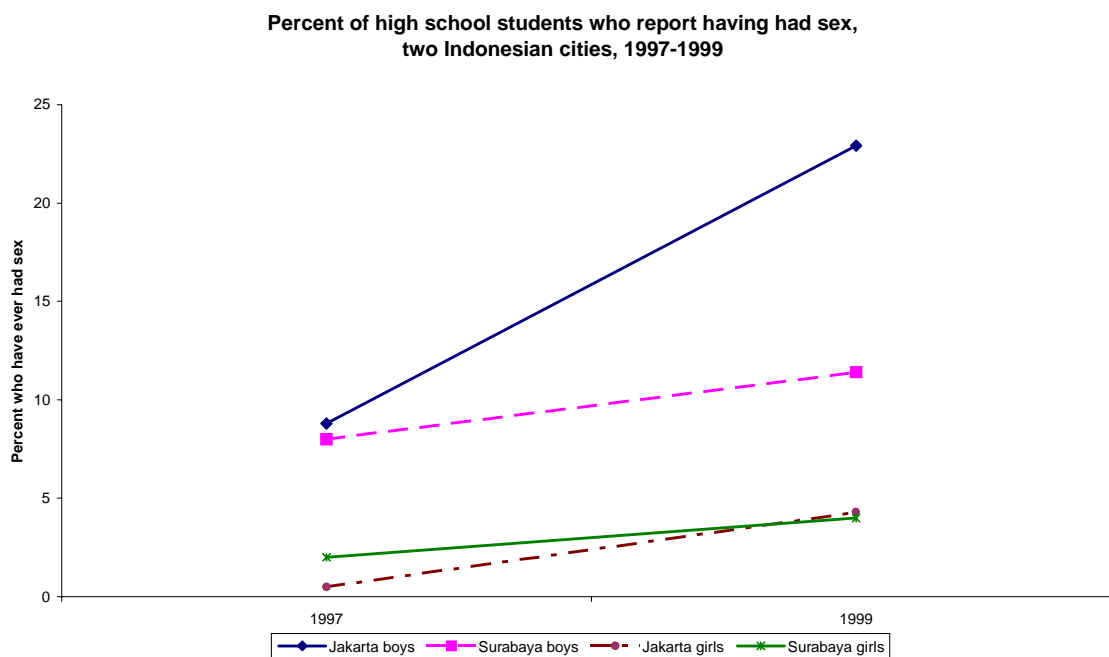
**Figure 14**

Indonesia is another dynamic society that is undergoing rapid economic and political change. Huge numbers of young people are moving in search of work from the countryside to the cities, environments that have less social support and control. This process of urbanization contributes to a social dislocation that is compounded by politically motivated violence and internal displacement. It is estimated that more than a million Indonesians had to flee their homes in the violence that surrounded the political reforms of the late 1990s. The social dislocation brought about by these demographic and economic changes will likely lead to behavioural change as well, such as more injecting drug use and more liberal sexual behaviour that may increase the spread of HIV and other STIs.

Already in Indonesia, many married men have other partners and premarital sex is not a rare event, especially among young men in occupations that give them access to cash and provide opportunities to travel. For example, eight in ten unmarried transportation workers questioned in Jakarta, Surabaya and Manado in 2000 said they were sexually active, up from two-thirds in 1996. About half of all unmarried men in these groups lost their virginity in their teens. One young man in five in these "high risk" occupational groups lost their virginity to a sex worker, slightly more than the proportion who said their first sex was with their wives. Some 98 percent of 300 clients of sex workers interviewed in Kupang, West Timor, said they had sex before marriage, and in that city, over half of first sex acts were with sex workers. The early exposure to commercial sex is worrying because young men having sex for the first time are unlikely to have the courage to ask a sex worker to use a condom, even if they want to.

In the nation's two largest cities, the trend among high school students appears to be towards more premarital sex, as illustrated in Figure 15. These data are very limited, but they are supported by anecdotal evidence, such as a massive upswing in attention paid to boyfriends

and sexual relationships in young women's magazines. Clearly, more data are required to confirm this apparent trend.

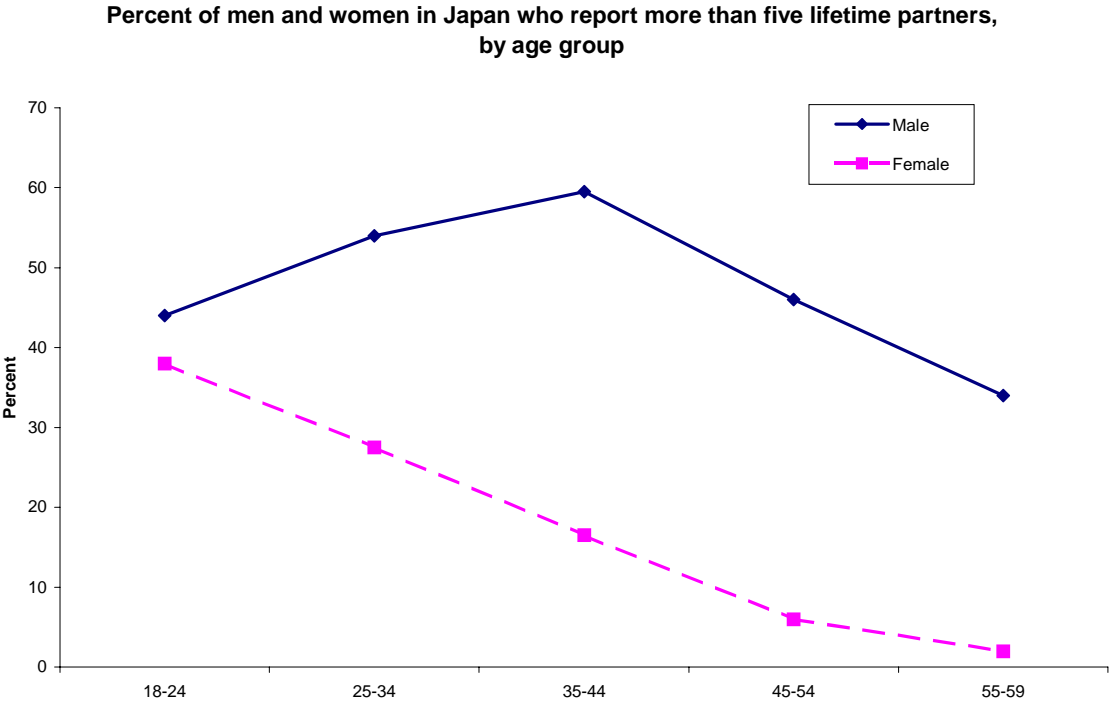


**Figure 15**

Since the economic crisis developed in Indonesia in 1998, the number of children living on the streets of large cities has increased. Many of these children have sex, and for some of them sex is their source of income. Recent studies among street children in Jakarta and Central Java found that between a quarter and a third of the children were sexually active and only six percent had ever used a condom. Not surprisingly, many were infected with STIs: in Jakarta, one child in seven had a history of STI and one in 20 were injecting drugs.

The sexual behaviour of youth in Japan also appears to have changed significantly in the last few years. Chlamydia among females and gonorrhoea infections among males are on the rise, and induced abortions among teenage women have nearly doubled in the past five years. These findings suggest increased rates of unprotected sexual intercourse and are supported by results of a nationwide sexual behaviour survey conducted in 1999. Compared with earlier surveys, results from 1999 showed that 18-24 year olds initiated sexual intercourse earlier, had more casual partners, more concurrent sexual relationships, and more paid sex. All these changes, except for paid sex, were most pronounced among young girls greatly reducing the traditional male-female difference in sexual behaviours.

Figure 16 shows the proportion of each age group who report having had sex with more than five people in their lifetime. The patterns among men is as expected: older men who have been sexually active for longer report more lifetime partners than younger men. But among women, the pattern is drastically different. Over a third of women under 25 reported having sex with five or more men in their lives, far higher than among older women who grew up when the restrictions on premarital sex were far more stringent.



**Figure 16**

Taken together, these findings suggest that Japanese youth have changed their sexual behaviour in recent years and thereby increased their vulnerability to HIV. The sexual behaviours of youth need careful monitoring in Japan and other Asian countries to assess their HIV risk and to guide the development of improved prevention programmes.

## **Mobility and its risks: As people move, so does HIV**

The types of mobility that promote HIV transmission – labor migration, urbanization, the trafficking of women, and displacement of refugees – are found throughout Asia. While most of the evidence relating mobility to HIV is found in Africa, there is increasing evidence in Asia of the same types of linkages.

Movement of populations from low prevalence areas or countries to high prevalence areas and back again gives HIV an opportunity to move with those populations. This type of movement within Asia occurs with disturbing regularity, as the examples below demonstrate.

### ***Lao workers in Thailand***

Sandwiched in between the higher prevalence countries of Cambodia and Thailand, HIV prevalence has remained low in the Lao People's Democratic Republic up to the present time. But workers from this country go to neighboring Thailand for temporary work. Although HIV prevention has been successful in Thailand, HIV prevalence among sex workers is relatively high. While in Thailand, some Lao workers may visit sex workers and become infected, thus bringing HIV back home with them. Already some of the early cases of HIV detected in Lao PDR are among migrant workers returning from work in Thailand.

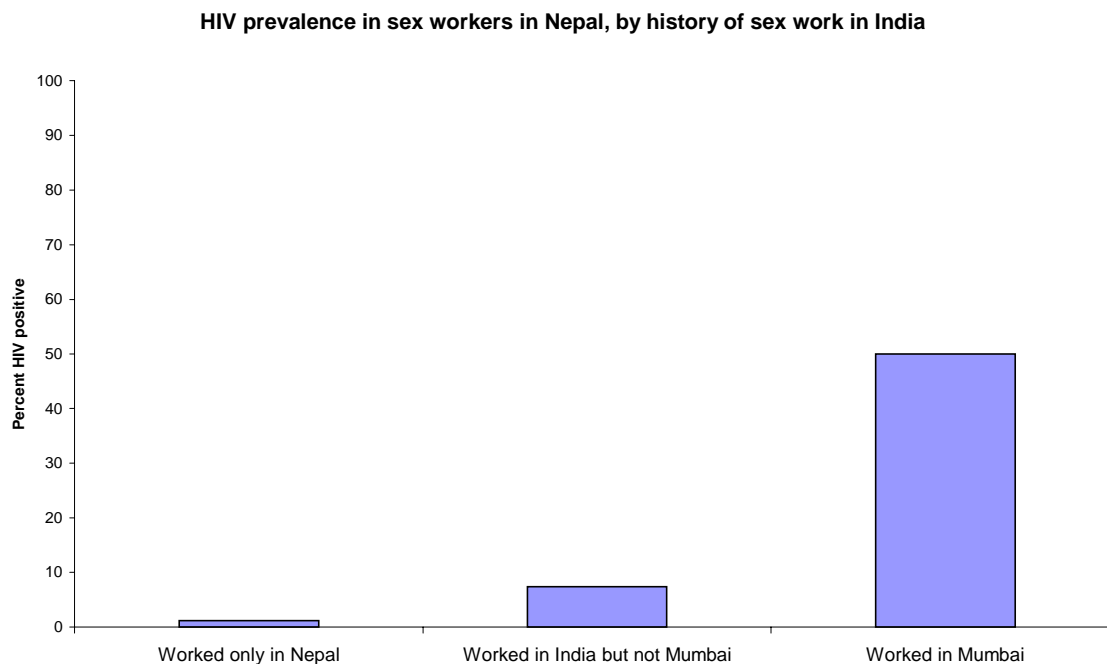
### ***Nepali labourers and sex workers in India***

A substantial proportion of the adolescent and adult male population in Nepal seeks temporary, and sometimes permanent, work in several states in neighboring India. In some parts of the Far Western region of Nepal, the percentage of men who migrate to India is as high as 70 percent. Migration between origin sites in Nepal and destination areas in India is not random. Districts in Nepal are "linked" to areas in India through historical ties, middlemen organizations who forge these ties, and the workers themselves who often bring their brothers and friends. Thus, men from Bahjang district in Far Western Nepal often seek work in Bangalore, India, whereas men from the neighboring Doti and Achham districts often go to Mumbai (formerly Bombay). In terms of HIV transmission, the destination matters greatly. All risk behaviours being equal, those workers going to high-prevalence areas, such as Mumbai, are far more likely to become infected by HIV.

A recent survey among returning migrants and non-migrants in Nepal shows some of the first evidence of what could become a major epidemic in Nepal. In an area of Doti district in the Far West region of Nepal, 10 percent of the returning migrants from Mumbai were infected with HIV, compared to two percent of the non-migrants. The sample sizes of the survey were small (100 migrants and 50 non-migrants), suggesting that confirmatory evidence is needed. Nevertheless, the results are highly suggestive of a burgeoning epidemic in the Far West.

Another HIV/STI and behavioural survey of sex workers in the Terai area of Nepal shows the association of HIV with sex work and the trafficking of women to India. Researchers found an overall HIV prevalence among the sex workers of four percent. However, striking prevalence differences were found according to whether the women had done sex work in India. As Figure 17 illustrates, women who never worked in India had far lower prevalence (1.2 percent) than those who had worked in India. Women who worked in commercial sex in Mumbai registered the highest HIV prevalence (50 percent), followed by those who worked in other areas of India (7.4 percent). In summary, even though only a small percentage of

women had worked in India (17 percent), they accounted for three-quarters of all of the HIV infections found in the sample.



**Figure 17**

In order to analyze the effects of trafficking on HIV prevalence, the researchers also asked the women whether they had been coerced to go to India. Almost one-third (30 percent) of the women reported that they had been coerced, and this was highly associated with HIV infection. Women who reported being coerced were three times more likely to be HIV-infected than those who were not.

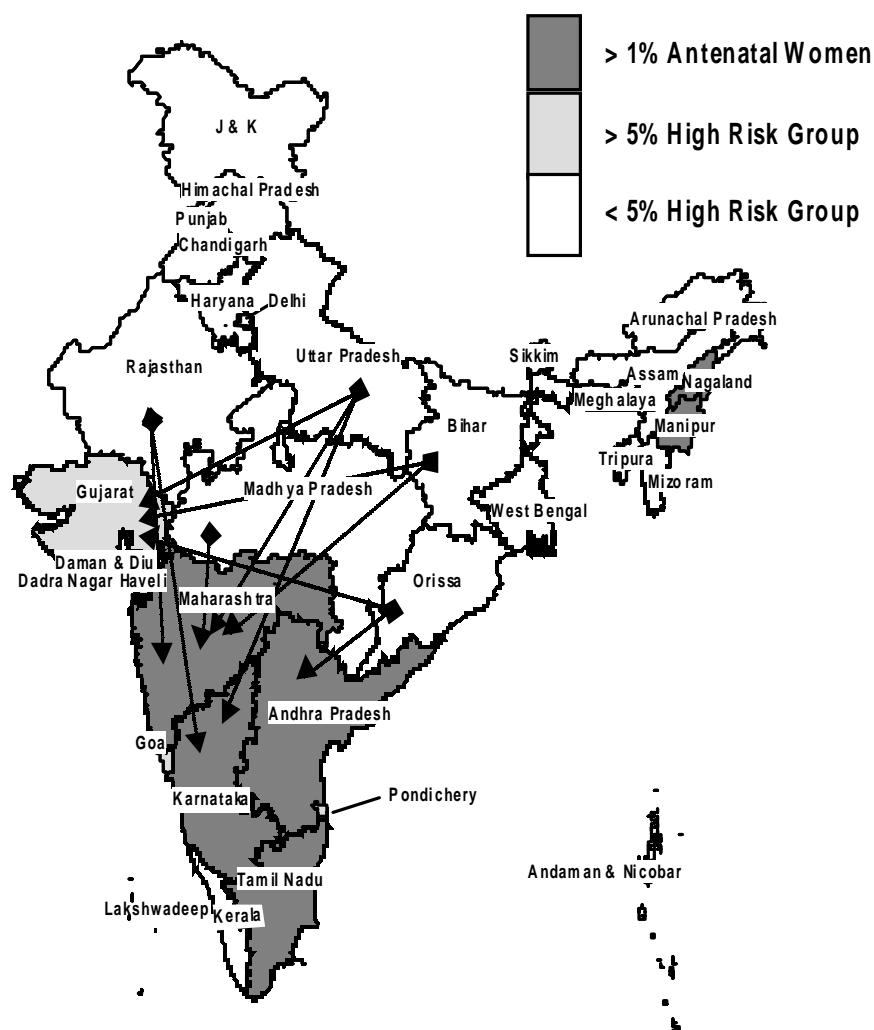
### ***Inter-island migration in Indonesia***

An interesting feature of the sex industry in Indonesia is the extreme mobility of both the clients and the sex workers. One study interviewed 300 clients of sex workers in Kupang, West Timor, and found among them men from more than half the provinces of Indonesia. Eighty percent of these clients said they had bought sex in other cities around the province and country. In fact, in three other cities over 40 percent of men who bought sex did so in more than one city in the last three months.

Sex workers in Indonesia are also very mobile. They typically work in one place for around a year before moving on to another location. In one study, nearly half of sex workers had already worked in another area despite being less than a year in the business on average. This kind of mobility acts as an engine, driving the spread of the virus throughout the archipelago. But, it also gives local communities an excuse to ignore the importance of the risk behaviours that are taking place in their midst, by claiming that sex work is an “outsiders” problem. This gives a false sense of security, because regardless of where the sex workers originate, a substantial proportion of their clients are always men from the local community. A study of the male and female sex industries in Bali estimates that four out of five clients were local, while in Kupang, 37 percent of sex workers’ clients were local.

***State-to-state migration in India***

India: Population movements from low to high prevalence areas, 2000 (total 35 million)



Some of the states that serve as destination states for workers from other states also happen to be those registering high HIV prevalence. These include the more industrialized states of Maharashtra, Gujarat, and Andhra Pradesh. These states attract male and female laborers from all over the country, but particularly from those states with lower income levels such as Uttar Pradesh, Bihar, Rajasthan, and Madhya Pradesh (see map). While these states have relatively low levels of HIV infection, labour migration to high prevalence states may soon change this. Indeed, many of the migrating men leave their wives and families behind, thus increasing the likelihood that they will visit sex workers during their stays away from home.



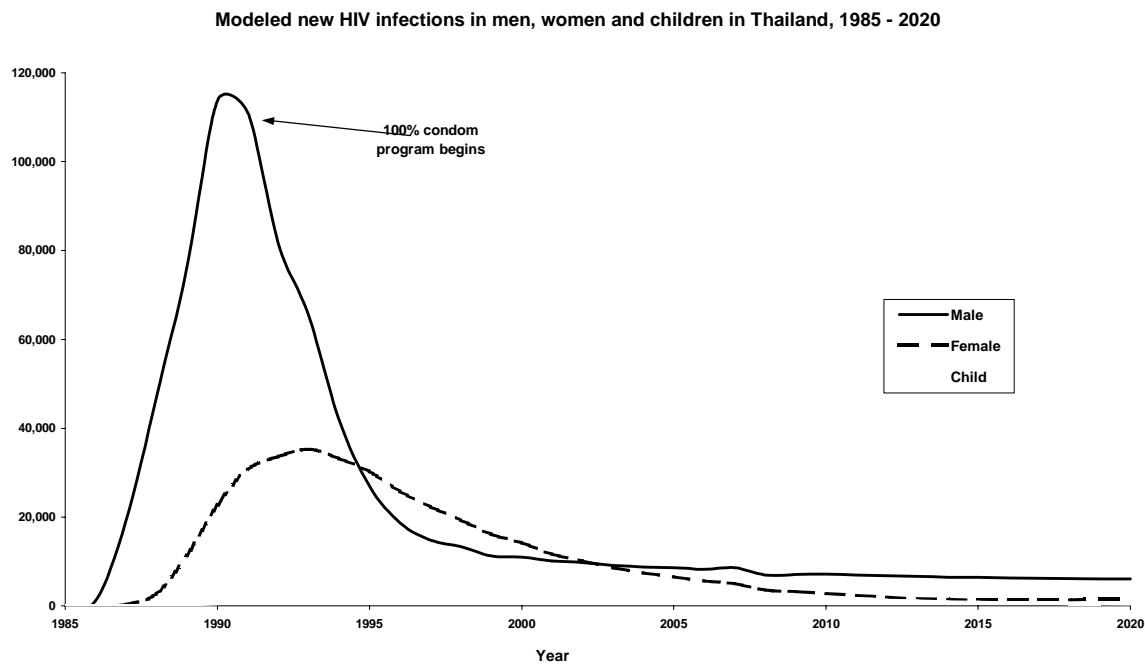
## We can do something about it

The good news for Asia is that, because the majority of the population does *not* engage in high-risk behaviour, focusing on those who do is both affordable and effective. Focused interventions can keep infection rates low in specific groups and reduce the risk of extensive HIV spread in the population at large. As has been demonstrated with sex workers and their clients in Thailand and Cambodia, these programmes can be extremely effective in the early stages of the epidemic before spread begins in the broader population.

### *Commitment Works*

Thailand was the first Asian country to launch large-scale preventive action in 1991, although by that time a serious epidemic had already developed in the north of the country. An extensive system for nationwide HIV surveillance, started in 1989, monitored the growth of the epidemic from its early stages. The findings from this system were disseminated not only to policymakers, but also extensively through the mass media raising the public's awareness. Behavioural and epidemiological studies established the extent of risk in the population and identified sex work and sexually transmitted infections as the major contributors to the epidemic at the time. These data were used to advocate with the Parliament and the Prime Minister for political commitment and financial support. In 1991, the government made HIV prevention a national priority and provided a budget of \$10 million USD. The result was nationwide, major behaviour change.

The percentage of adult men visiting sex workers halved between 1990 and 1993 and was sustained at those levels. Condom use in sex work rose from 10 percent in 1989 to 30 percent in 1990 and 60 percent in 1993. By the mid-1990s condoms were being used in nearly 90 percent of all sex work contacts.

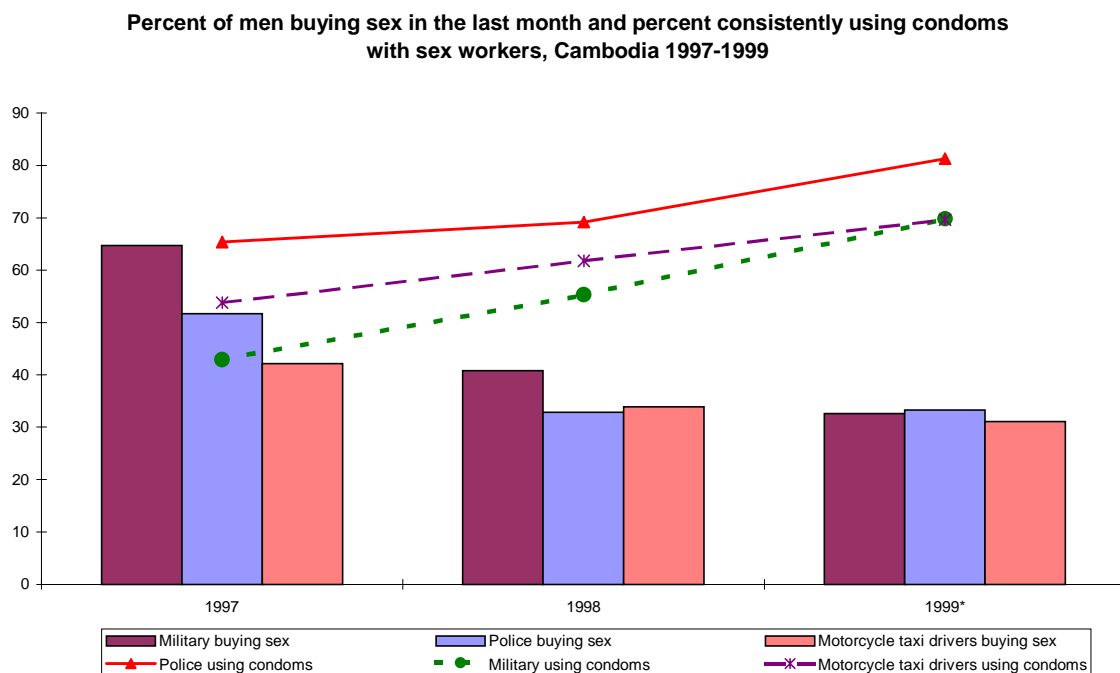


**Figure 18**

Models have been developed that closely reproduce the observed trends in HIV in the monitored groups in Thailand. Figure 18 shows the output of these models: the annual number of new infections was successfully reduced from a high of 140,000 in 1990 to 30,000 by the year 2000. The start of the decline coincides with the implementation of extensive national scale prevention efforts.

Models also allow us to examine what might have happened had no prevention programmes been undertaken and behaviours remained as they were in 1990. In the absence of intervention programmes, Thailand would today have adult prevalence rates of 10-15 percent rather than the actual level of 1-2 percent. The epidemiological evidence from Thailand’s upper North supports these estimates. In the most heavily affected Northern provinces almost 25 percent of young men and 10 percent of pregnant women contracted HIV. Behavioural studies find regional differences in behaviour are comparatively small in Thailand – so had condom use not risen quickly and use of sex worker services not fallen so rapidly, the situation in the country would be far more serious today.

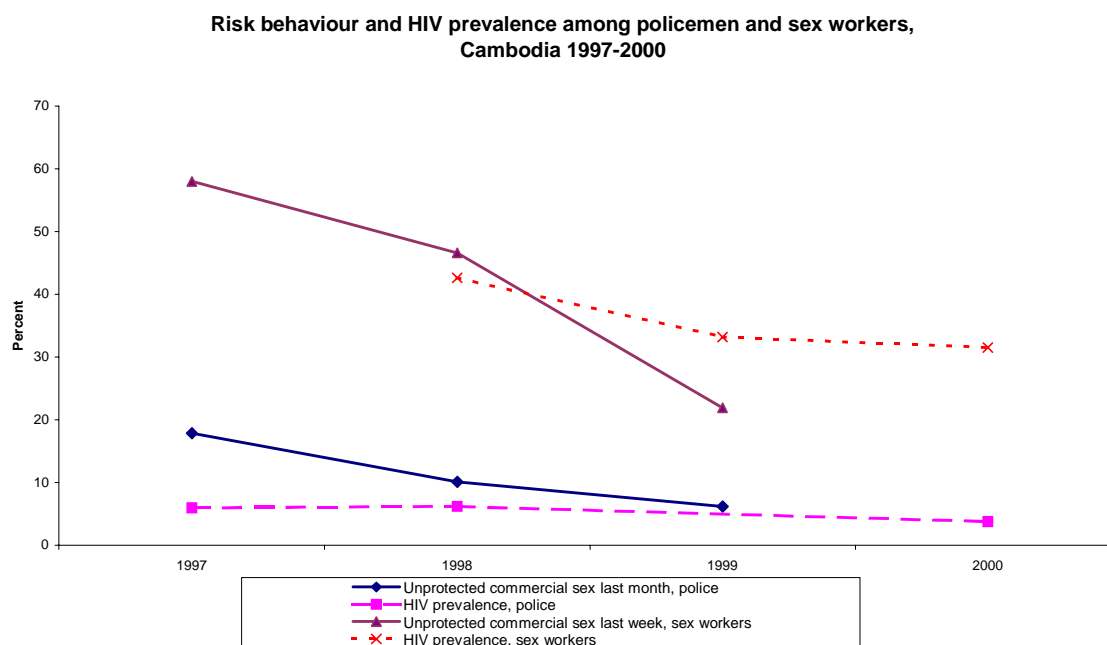
Cambodia has followed Thailand in promoting safe behaviour. As Figure 19 shows, risk behaviour among several groups of males in Cambodia fell consistently over the late 1990s. Fewer men reported buying sex from sex workers, while condom use in these encounters rose significantly. Sex workers, as well, reported steep increases in consistent condom use.



**Figure 19**

Figure 20 compares behavioural trends for police and sex workers in Cambodia with trends in HIV prevalence measured in the same groups. It shows that reductions in risky behaviour were accompanied by a reduction in HIV prevalence, suggesting that behaviour change is beginning to contribute to curbing the HIV epidemic in Cambodia.

The drop in risky behaviour reported by policemen is echoed in a drop in unprotected sex reported by sex workers in Cambodia. And in this population, as well, HIV prevalence appears to be on the decline. These data add up to a fairly consistent picture of falling HIV prevalence following successful prevention efforts.

**Figure 20*****Comprehensive, targeted programmes produce results***

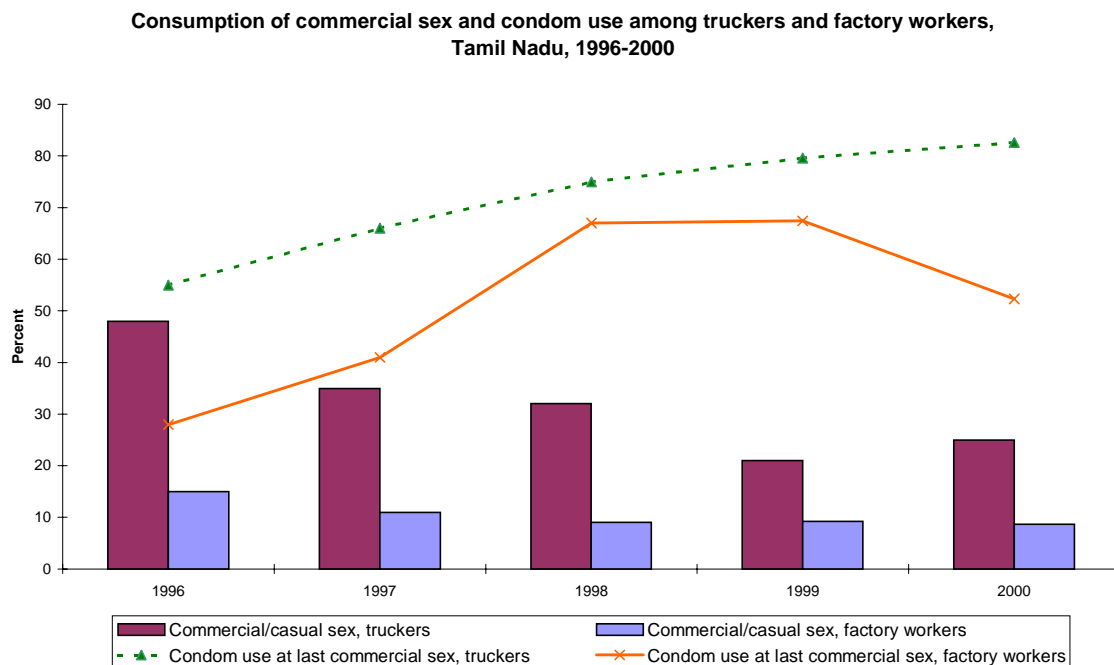
Condom use is also on the rise in Nepal. An integrated condom promotion and STI control programme has been operating along the East-West highway in the Terai Region of Nepal since 1994. An accompanying behavioural surveillance system monitors behaviour change among female sex workers, male transport workers, and male laborers. Results through the year 2000 show that condom use increased among all groups. From a low of 35 percent in 1994, reported condom use with last client increased among sex workers to 62 percent in 1998 and 86 percent in 2000. The client groups show similar increases. Transport workers have increased their consistent condom use with sex workers from 36 percent in 1998 to 48 percent in 2000; male laborers increased from 23 percent in 1998 to 43 percent in 2000.

An HIV/STI prevalence survey conducted in 1999 in the same region confirms that overall HIV prevalence remains low: 3.9 percent among female sex workers and 1.5 percent among truckers.

A comprehensive package of interventions in Sonagachi, India, within the sex worker's cooperative resulted in an increase in condom use, a decrease in syphilis, and continuing low levels of HIV prevalence.

However, success is limited to intervention programmes that are sustained. By tracking trends over time, routine surveillance systems that include behavioural surveys can identify plateaus or reversals in programme success. Tamil Nadu state in India has for several years operated a consistent, high-quality behavioural surveillance system. And for several years, this system recorded reductions in risk behaviour that reflected the success of the state's comprehensive HIV prevention programme. By measuring the success, behavioural surveillance systems provided evidence to local policy-makers who want to sustain and expand HIV prevention efforts. As Figure 21, however, there are worrying signs in the last two survey rounds that

initial gains in condom use among factory workers have not been sustained. Condom use appears to have plateaued at around two-thirds of paid sexual encounters in this group, and may now be decreasing. This may suggest “message fatigue,” and argues for fresh prevention efforts using a variety of approaches.



**Figure 21**

### *Sustaining success is a challenge*

By the late 1980s, Australia and New Zealand had successfully curtailed their epidemics among injecting drug users and men who have sex with men. The Australian state of Victoria has an excellent record of managing the HIV/AIDS epidemic, with the annual number of new HIV diagnoses declining dramatically from a peak of 528 in 1985 to 140 in 1999. In 2000, however, the annual number of new HIV diagnoses increased. As in the US and several European countries, there is also recent evidence in Australia that unsafe sex behaviour is increasing, highlighting the need for sustained efforts in prevention.

### **Legislation for Prevention**

In the absence of a vaccine, HIV prevention efforts have focused on modifying risk behaviours to reduce or eliminate transmission. The education of individuals at risk for HIV is only one component of these prevention efforts, and by itself is rarely sufficient to effect behaviour change. Environmental influences such as peer opinion, prevailing social values and the availability of any necessary adjuncts to effect the behaviour change (such as condoms and needle exchange) play crucial roles in enabling and reinforcing behavioural change. In this regard, HIV prevention programmes are similar to other public health prevention programmes that try to change a risk behaviour, whether it be smoking, drinking alcohol and driving, or the use of seat belts, all of which need strong political support.

The creation of an enabling environment for the desired behaviour change is the challenge facing many Asian governments today. The tools available to governments to do this are the passing of legislation and the promulgation of policies to support such environments. An example of how governments can support the creation of an environment that is supportive of HIV prevention is provided by the Philippines.

The Philippine government exercised leadership early and, along with its civil society partners, clearly articulated its intentions. The centrepiece of this early action was the enactment of the Philippine AIDS Law in 1998. This law mandated measures on education and information, adoption of safe practices and behaviours, conduct of testing, screening and counselling, and provision of health and support services. This law also reaffirmed the human rights of infected and affected persons with provisions protecting their confidentiality and prohibiting discriminatory acts and policies. Moreover, it created the Philippine National AIDS Council, the country's highest policy making, coordinating and directing body on HIV/AIDS.

This landmark legislation also provided the legal mandate for local government executives to develop ordinances for the implementation of HIV/AIDS prevention and control measures in their areas. Armed with sound HIV surveillance information and ably supported by other government and non-government organizations, the city health offices of Angeles, General Santos, Quezon, and Zamboanga successfully advocated for the passing of ordinances that required: 100 percent condom availability and use in registered entertainment establishments where sex work occurs; the provision of STD/HIV education and reproductive health care services for sex workers; an age limit of 18 years for women hired to work in registered entertainment establishments; and the incorporation of surveillance activities into the city health plan to ensure the on-going collection of data for programme monitoring and evaluation, and decision-making.

Both national and local levels of the Philippine government believe that acting now is the best way to avoid a serious HIV epidemic, and this belief has been translated into action through legislation.

### **Targeting interventions**

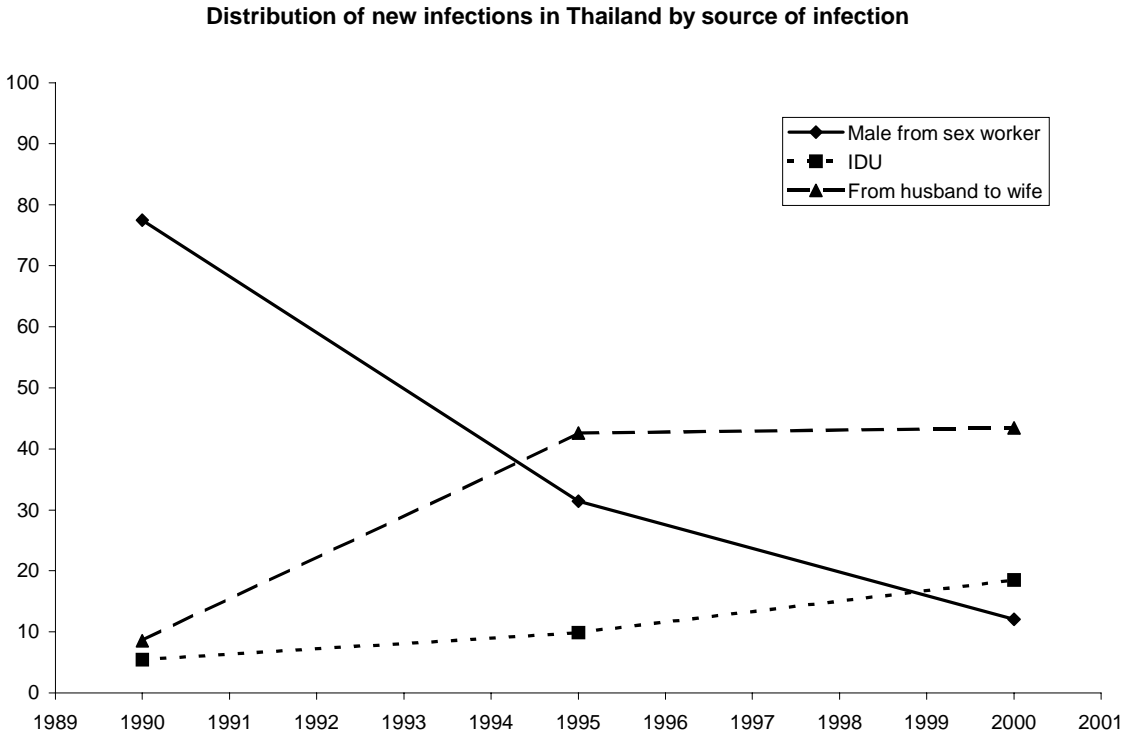
The purpose of targeting is to reach intended clients with a particular intervention, message, or resource. Targeting should not be confused with a narrow focus or limited scope. Even interventions intended for a broad audience, e.g., the “general” population, need to be properly targeted. Targeting helps to ensure that the intended audience is actually exposed to the message, understands the message, and has the information needed to appropriately respond to the message.

Targeting should not be confused with prioritization. All interventions should be targeted, but not all potential interventions have the same priority. Prioritization relates to the importance of the population or behaviour in terms of their current or potential role in the epidemic, while targeting helps to define how best to reach that population or address that behaviour.

Effective targeting needs to build on market research in effectively reaching the intended audience. For example, messages intended to reach youth will have to use appropriate language and packaging. Also, effective targeting must reflect a genuine understanding of the *context* of the behaviours we are attempting to change. This point is illustrated in the experience of Bangladesh in a recent intervention. In just two years, the proportion of brothel-based sex workers reporting that they asked all of their clients to use condoms increased from 18 to 46 percent. Moreover, over half of all respondents had condoms on hand and could show them to the interviewer. However, this increase had no effect on the proportion actually using condoms all the time. In the Bangladesh context, the clients are ultimately in control of decisions about condom use. Distributing condoms and leaving it up to sex workers to effect their use was insufficient to increase consistent use.

Effective targeting must go beyond simplistic population targeting and address the entire nexus of behaviours relating to the transmission being targeted. Thus, for example in the Bangladesh situation described above, interventions targeting clients of sex workers and brothel owners could potentially complement the sex worker intervention and result in increased condom use.

Intervention targets must be continuously re-evaluated over time. HIV epidemics are dynamic and targets for interventions must reflect that dynamism. For example, throughout the 1990s in Thailand casual sex and heterosexual transmission related to sex work have been the main targets of the program. As the following graph illustrates, however, between 1990 and 2000, transmission from sex workers to male clients has declined from 77 percent to 12 percent of all new infections, while there has been an increasing share of transmission from husbands to wives from 9 percent to 43 percent, and among injecting drug users from 5 percent to 18 percent. As yet, however, the focus of intervention efforts in Thailand has not changed to reflect these dynamics.



**Figure 22**

Given the current focus of HIV transmission in Asia, the limitation in resources, and the window for opportunity, high priority should be given to prevention of HIV transmission related to sex work, injecting drug use, and other situations of high risk. However, as experience has shown, effective interventions will have to address all groups involved, as well as the context in which such transmission happens. Targeting interventions on young people in order to increase awareness, knowledge and life skills to prevent risky behaviour is a most cost effective investment into the future in all societies.

**List of participants in the MAP meeting**

Melbourne, September 30 – October 2, 2001

<b>Name</b>	<b>Country</b>
Chris Archibald	Canada
Tasnim Azim	Bangladesh
Madhulekha Bhattacharya	India
Tim Brown	Thailand
Brynn Epstein	USA
Peter Ghys	Switzerland
Mohammad Mehdi Gouya	Iran
Mitsuhiro Kamakura	Japan
Benu B. Karki	Nepal
Masahiro Kihara	Japan
Maria Consorcia Lim-Quizon	Philippines
Ryuichi Komatsu	Japan
Richard Mateo	Philippines
Stephen Mills	Thailand
Rob Moodie	Australia
Elizabeth Pisani	Indonesia
Dr. Reddy	India
Tobi Saidel	Thailand
Bernhard Schwartländer	Switzerland
Endang Sedyaningsih-Mamahit	Indonesia
Mohammad Shaukat	India
Fonny Silfanus	Indonesia
Karen Stanecki De Lay	USA
Peter Way	USA
Bahram Yeghaneh	Iran
Zhen Xiwen	China