

## Regional Review

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# HIV & AIDS in Asia-Pacific Region



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## HIV epidemiological overview

According to the latest estimates<sup>1</sup> in 2007 in Asia there were around 4.9 million (range of 3.7 million – 6.7 million) people living with HIV of whom 440,000 (range of 210,000 – one million) became newly infected in the past year and approximately 300,000 (range of 250,000 – 470,000) died from AIDS-related illness. HIV prevalence in Asia-Pacific has a large variation from almost zero to 2.4 per cent in Papua province of Indonesia.<sup>2</sup> Those values are lower than for many other parts of the world, particularly Africa. However, given the substantial number of people living in this region, even a low increasing prevalence of HIV would translate into millions of infections.

The picture of the HIV epidemic in Asia is diverse therein making it difficult to categorize certain groups of countries with similar patterns. There is much evidence that HIV prevalence seems to be on the decline in **Thailand, Cambodia and Myanmar**, largely due to the effectiveness of prevention efforts. However, the picture in **Indonesia and Vietnam** is particularly complex, demonstrating considerable variability. For example, while HIV prevalence may level off in some sentinel surveillance sub-populations in certain parts of the country, the absolute number of people living with HIV continues to increase, and HIV prevalence remains at a high level in other areas and/or sub-regions.

The HIV epidemic in **Papua** province in Indonesia and in the Pacific sub-region, particularly **Papua New Guinea**, presented a different picture that appears in many respects to follow the footsteps of sub-Saharan Africa. The common practices of sex with multiple non-marital partners, sex between older men and younger women as well as an extremely low level of condom use will facilitate the spread of the epidemic deep into the general population.<sup>3</sup>

HIV infections have been reported in most provinces of **China**, but most of the people living with HIV are believed to live in Henan, Guangdong, Guangxi, Xinjiang and Yunnan provinces, where the epidemic is dominated by injecting drug use.<sup>4</sup> There is, however, a great concern over the increasing number of people living with HIV infected via homosexual transmission in China<sup>5</sup> and practices of multiple risk behaviours, such as sex workers are injecting drug users or injecting drug users buy sex with a low condom use level.<sup>6</sup>

In **India**, the new estimate with more accurate methodologies indicates about 2.5 million (range of 2 million – 3.1 million) people living with HIV in 2006 with national HIV prevalence of 0.36 per cent.<sup>7</sup> The new and revised estimate reflects the inclusion of data from the improved and expanded surveillance system and national household surveys. Even though the national HIV prevalence of India is low, it is observed that pockets of high HIV prevalence (mostly among most-at-risk population) have been identified in many parts of States of India.

Some countries put a lot of effort to bring down risky behaviours, such as **Bangladesh, Philippines** and **Lao PDR**. If these efforts are sustained and expanded comprehensively, these countries should avoid the epidemics observed in neighbouring countries.

For those countries that were protected by their isolation or difficult geographical situation, it is merely a matter of time before the epidemic intrudes. **Pakistan** is one example where there is increasing HIV prevalence among injecting drug users. A study in Karachi found that after just one year, the HIV prevalence among IDUs went up from less than one per cent in 2004 to 26 per cent in 2005.<sup>8</sup>

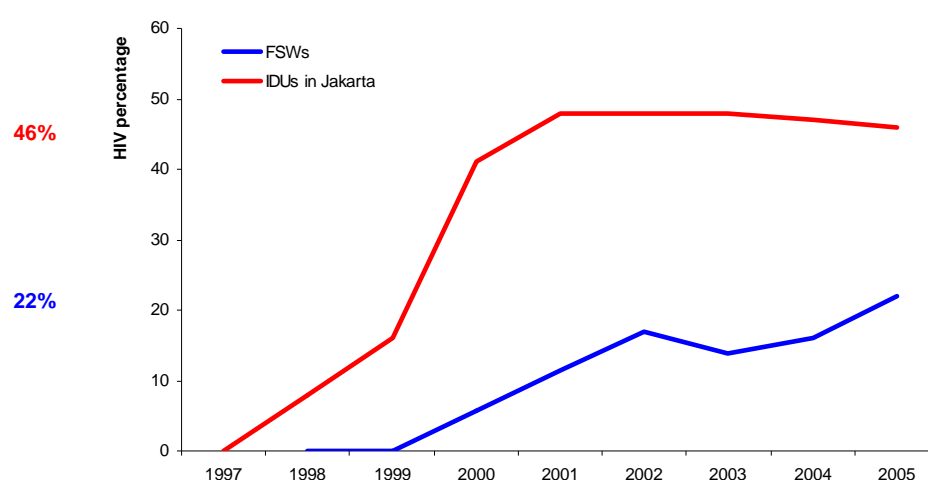
In **Hong Kong**, past trends show a steadily growing epidemic with 3,200<sup>9</sup> people living with HIV. However, past prevention success is now being overshadowed by a growing epidemic among men who have sex with men whose level of risks is sufficient to support an exponentially growing epidemic in the territory. There is also an increasing cross-border risk amongst most-at-risk populations with a low level of condom use. The percentage of men from Hong Kong using condom in southern China provinces is lower than when they are in Hong Kong (65 per cent versus 80 per cent). Moreover, there is a large number of sex workers coming from mainland China to Hong Kong with very limited access to prevention services.<sup>10</sup>

## **What can surveillance data tell us about the trends of HIV epidemic in Asia-Pacific?**

Strong evidences in many countries of Asia-Pacific suggest that multiple risk behaviours are common thus facilitate movement of the HIV virus from one sub-population to another.

**Indonesia** is an example of one of the countries with the fastest growing epidemics in the region. Common modes of transmission include drug injection, unprotected paid sex and, to a lesser extent, unprotected sex between men.<sup>11</sup> Within eight years, HIV prevalence among IDUs in Jakarta soared from zero in 1997 up to 46 per cent in 2005.<sup>12</sup> In West Java in 2006 HIV prevalence among IDUs was 13 per cent.<sup>13</sup> HIV prevalence among female sex workers (FSWs) also took off from 0.1 per cent in 1998 up to 22 per cent in 2005.<sup>14</sup>

**Figure 1: Trends of HIV transmission among female sex workers and injecting drug users in Jarkarta within 10 years**

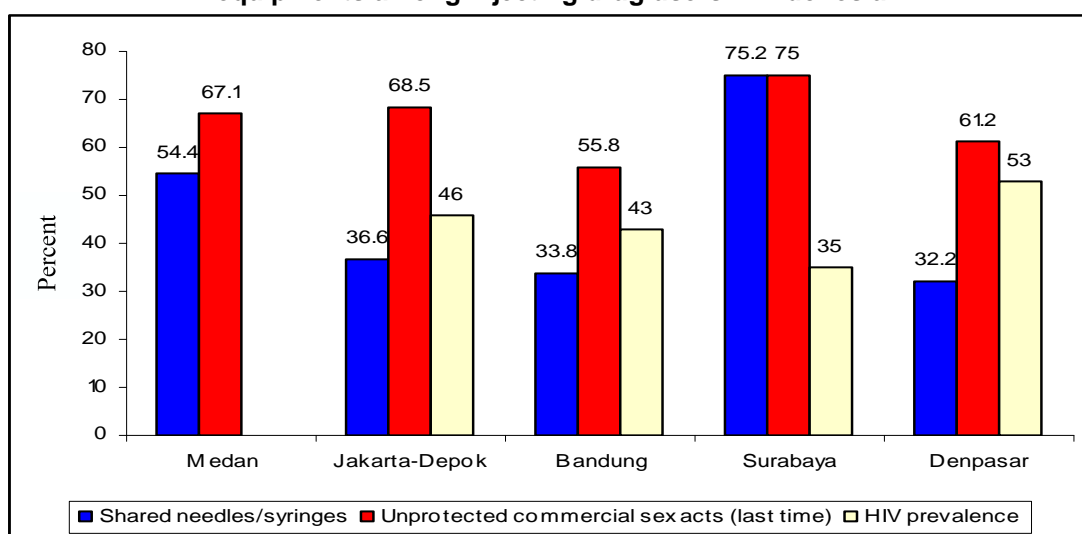


(Source: Ministry of Health, Indonesia. Sentinel Surveillance data, 2006)

**Notes:** For the purpose of smooth curve, data points in 2000 and 2001 of FSWs and 1998, 2002 and 2004 of IDUs in Jakarta are linearly extrapolated based upon available sentinel surveillance data

In addition to high levels of sharing injecting equipment, many IDUs in Indonesia also buy or sell sex. Recent results from the Integrated Biological and Behavioural Surveillance (IBBS) in Indonesia showed that a high proportion of IDUs in Medan, Jakarta, Bandung, Surabaya and Denpasar had had unprotected paid sex in the previous year; the values range from 61 per cent in Denpasar up to 75 per cent in Surabaya.<sup>15</sup>

**Figure 2: Percentage distributions of unprotected sex and sharing injecting equipments among injecting drug users in Indonesia**



(Source: - Ministry of Health, Indonesia. Results from the Behavioural Surveillance Survey (BSS) in Indonesia 2004-2005. 2005.  
 - Ministry of Health, Sentinel Surveillance data, 2006.  
 - ILO. Bandung Private Sector Stage War on HIV/AIDS. Press Release on Wednesday, September 29, 2004.  
 - ILO. East Java to Combat HIV/AIDS through Workplace Education Programmes. Press Release on Thursday, September 15, 2005.)

Note: The HIV prevalence data in Jakarta was collected in 2005; and the HIV prevalence data in Bandung, Surabaya, and Denpasar was collected in 2004

In **Papua province**, the HIV epidemic became generalized due to unprotected sex. The recent IBBS in 2006<sup>16</sup> showed that HIV prevalence among adults was estimated as 2.4 per cent and reached up to 3.2 per cent in the remote highlands and 2.9 per cent in less-accessible lowland areas. HIV prevalence among young people aged 15-24 was estimated as 3 per cent. The Africa-like pattern in Papua province can be explained by the common practices of sex with multiple non-marital partners (25 per cent among male respondents) and an extremely low level of condom use. For instance, the consistent condom use last month with non-marital partners was just 2.5 per cent among males and 8.4 per cent among females.

The HIV epidemic in **Papua New Guinea** has a similar pattern. The 2006 survey indicated that the HIV prevalence rate was 2.2 per cent among males and 3 per cent among females. Urban areas demonstrated higher rates of 3 per cent and 4 per cent amongst males and females, respectively. This survey also confirmed the statement that the HIV epidemic in PNG was becoming feminized and taking on a younger face. HIV prevalence amongst urban females aged 15-24 years had reached almost 6 per cent while the rate among urban males was 3 per cent.<sup>17</sup> The routine sero-surveillance study carried out at the Port Moresby General Hospital showed that in 2003, 1.35 per cent of pregnant women tested positive for HIV.<sup>18</sup>

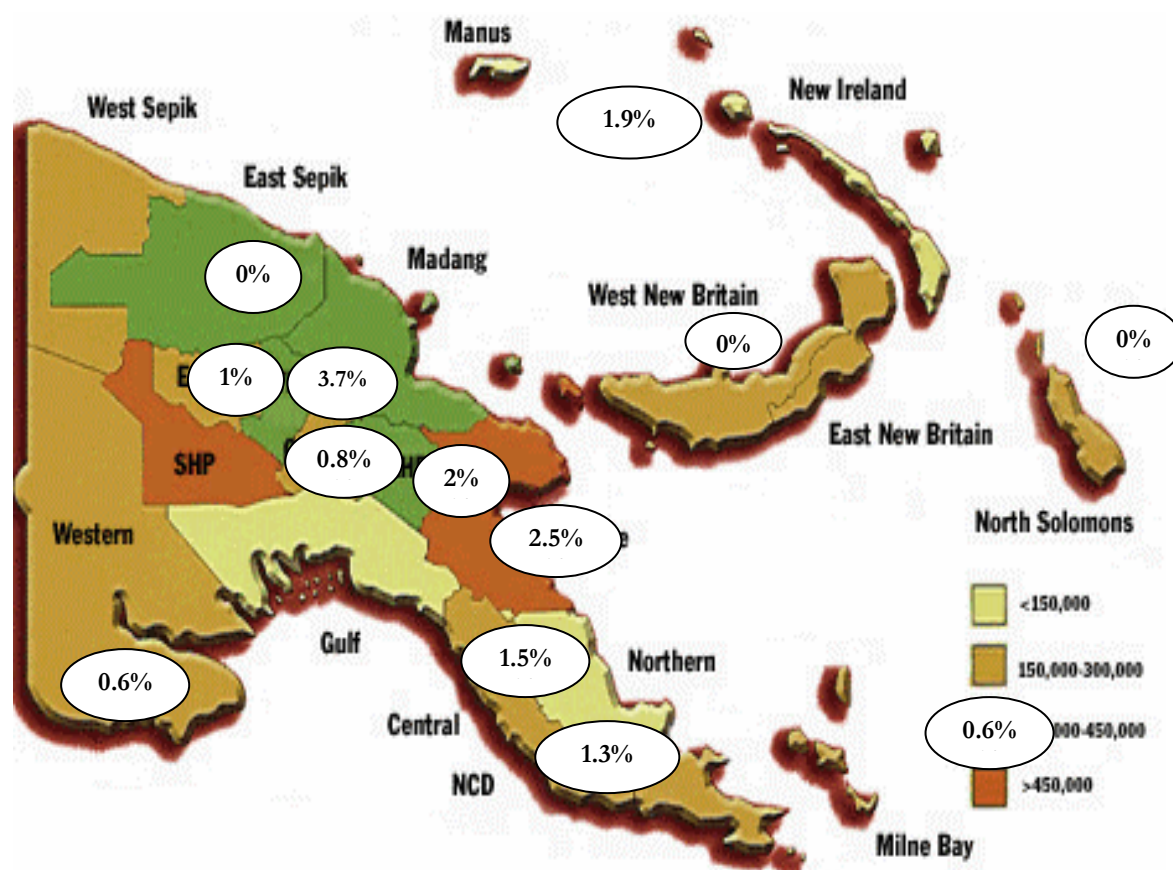
Surveys conducted among young adults on the Indonesian side<sup>19</sup> of the border have revealed two social patterns that would help to clarify the generalization of the HIV epidemic in Papua New Guinea:

- Young unmarried women and men at the border of PNG were ten times and five times more likely to be **sexually active** than the same age group in other parts of Indonesia.
- Approximately 30 per cent of sexually active young women in Papua province reported having sex with old men (at least 10 years older than them), creating a bridge to spread HIV from old population to young population.

It is noted that early initiation of sex (< 15 years of age) is common amongst both boys and girls. In some areas in PNG this behaviour is condoned by tradition. A recent study showed that more than 68 per cent of respondents had their first sex in the age of 10-19.<sup>20</sup>

Other factors that facilitate the generalization of the HIV epidemic in Papua New Guinea include: high level of STIs (40 per cent of surveyed population were positive with at least one STI<sup>21</sup>); low level of condom use, particularly with casual sex partners; and common practices of multiple sex. Phase 5 of the Marketsearch Survey found that 25 per cent of men and 10 per cent of women had more than one sex partner in the last three months.<sup>22</sup>

**Figure 3: HIV prevalence among general population, Papua New Guinea 2005**

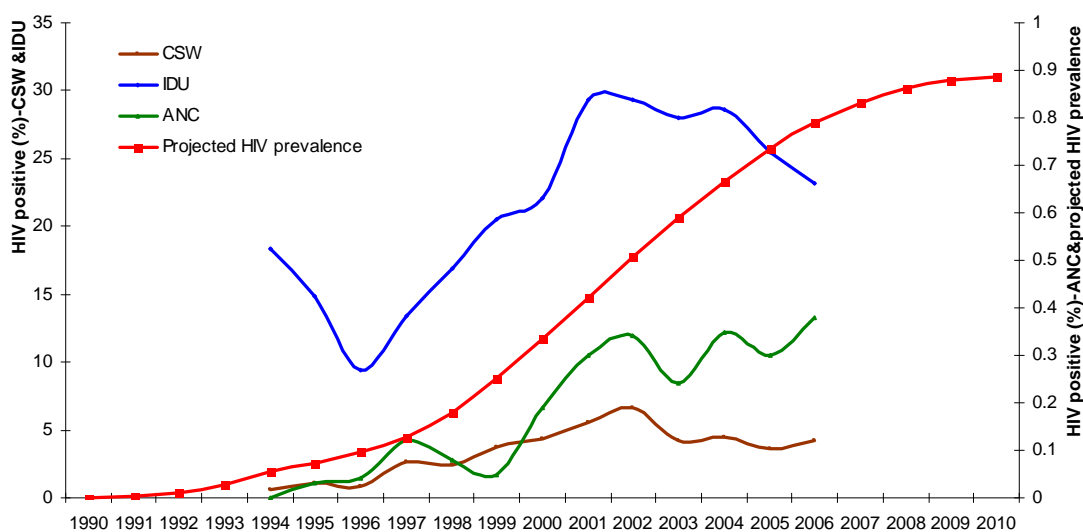


(Source: Toole M. The HIV situation in Papua New Guinea: What we can deduce from surveillance and special studies. Center for International Health. Presentation at ASHM Conference, Melbourne, October 2006)

The HIV epidemic in **Vietnam** is very complex. While nationwide HIV surveillance data showed some leveling off, there was an increase in the absolute number of people living with HIV and AIDS. National HIV prevalence among IDUs came down from a peak of 30 per cent in 2001 to around 23 per cent during the last few years.<sup>23</sup> The HIV prevalence among female sex workers decreased from 6.6 per cent in 2001-2002 to 4.2 per cent in 2006.<sup>24</sup> HIV prevalence among antenatal pregnant women stabilized at the level of 0.4-0.5 per cent<sup>25</sup> (see Figure 4) which did not follow the trend in the above two most-at-risk populations.

The absolute number of people living with HIV seems to be increasing gradually. Since 2000 new reported cases are more than 12,000 per annum, and the new reported cases in 2006 were 1.3 times those of 1999.<sup>26</sup> According to recent estimates and projections, in the absence of a comprehensive intervention programme, cumulative HIV cases in Vietnam will increase from around 263,000 in 2005 to more than 311,000 in 2010.<sup>27</sup>

**Figure 4: HIV prevalence among sex workers, injecting drug users and antenatal care and projected HIV prevalence in Vietnam (1990-2010)**

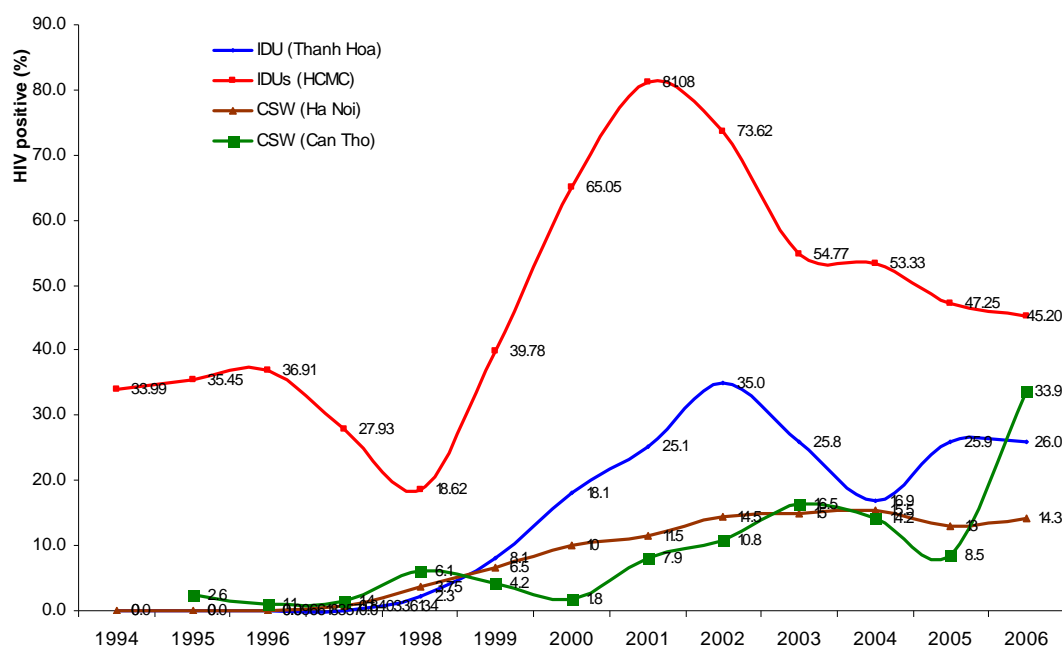


(Source: Vietnam Administration for AIDS Control, Ministry of Health of Vietnam, 2007)

As Figure 5 showed, in some provinces/cities HIV prevalence has leveled off while in other provinces/cities did not. For instance, HIV prevalence among IDUs in Ho Chi Minh City and Thanh Hoa province have the same pattern as national HIV prevalence among IDUs while HIV prevalence among FSWs in Hanoi has remained constant at about 14-15 per cent during the past four years, and HIV prevalence among FSWs in Can Tho province has increased sharply from 8.5 per cent in 2005 to 33.9 per cent in 2006.<sup>28</sup>

There are some issues regarding the surveillance data and complexity of the HIV epidemic in Vietnam. First, there is a great concern over instability in the sampling frame of the surveillance system from time to time; stability in sampling is one of the major ways to ensure tracking of HIV trends longitudinally in an accurate manner. Second, there has been a concerted "Three Reductions Program" in Ho Chi Minh City since 2001, and Ho Chi Minh City has half of all people living with HIV in Vietnam.<sup>29</sup> Third, the increasing number of people living with HIV receiving ART means they can live longer; thus, the HIV prevalence will likely stabilize instead of curving down. In 2003 only 1 per cent of people living with HIV in need of ART received it; this figure increased to 12 per cent in 2005<sup>30</sup> and is estimated to increase when more funds are allocated..

**Figure 5: HIV prevalence among injecting drug users in Ho Chi Minh City and Thanh Hoa province and among sex workers in Can Tho and Hanoi, Vietnam, 1994-2006**



(Source: Vietnam Administration for AIDS Control, Ministry of Health of Vietnam, 2007)

In 2007, using a more effective surveillance system, UNAIDS and National AIDS Control Organization (NACO) of India agreed on a new estimate of around 2.5 million people (range of 2.0-3.6 million) currently living with HIV in India. It ranks India third after South Africa and Nigeria in terms of total number living with HIV.<sup>31</sup> The HIV prevalence in India is 0.36 per cent. India's vast population causes an increase of 0.5 million people living with HIV per 0.1 per cent of HIV prevalence.<sup>32</sup>

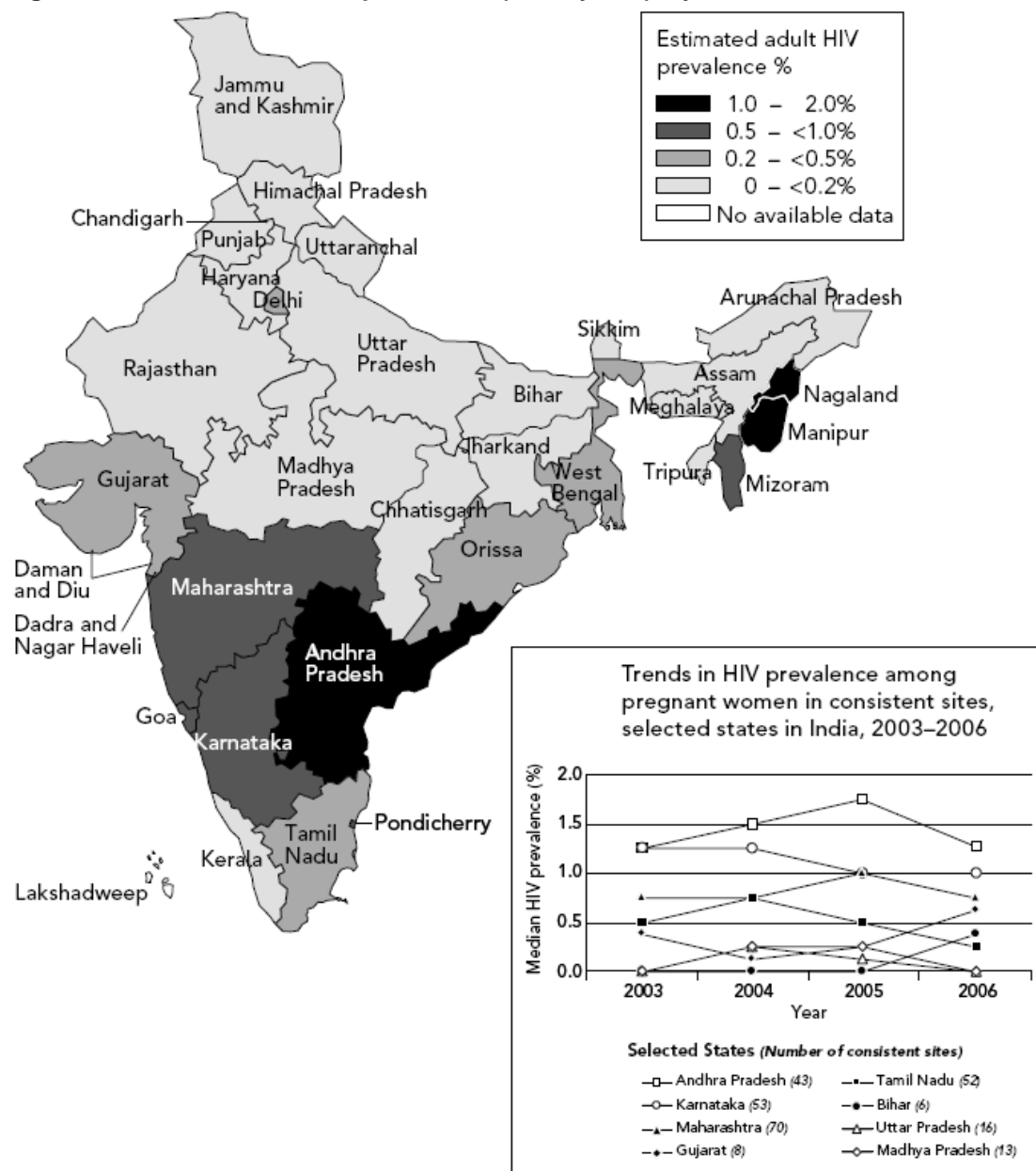
The HIV epidemic in India varies in the country. An earlier analysis of sentinel surveillance data showed that HIV prevalence in the southern states was overall about five times higher than that in the northern states in 2000–2004.<sup>33</sup> The 2006 sentinel surveillance also shows that a number of states have HIV prevalence at the level of more than one per cent, including Andhra Pradesh (2 per cent), Karnataka (1.25 per cent), Maharashtra (1.25 per cent), Manipur (1.25 per cent) and Nagaland (1.63 per cent).<sup>34</sup>

Data from the expanded 2006 sentinel surveillance showed a stable or declining prevalence among pregnant women in Tamil Nadu, Maharashtra, Karnataka and Andhra Pradesh. It was high HIV prevalence among sex workers. The HIV prevalence among injecting drug users and men who have sex with men in a few states was increasing.<sup>35</sup> Sentinel surveillance data in 2006 showed that HIV prevalence among pregnant women in Karnataka and Andhra Pradesh had already passed one per cent.<sup>36</sup> Outside the northeast of the country, where the use of contaminated drug injecting equipment is a key risk factor, HIV appears to be spreading mainly as a result of unprotected sex between sex workers and their clients, and their respective other sex partners.<sup>37</sup> Given the fact that commercial sex workers in India have a high mean number of clients and a low level of consistent condom use<sup>38</sup>, and that 86 per cent of total infections in India 2006 are contributed by sexual transmission, it is recognized that special attention should be paid to monitor the most-at-risk populations and that comprehensive intervention programmes should be carried out in an effective manner.

Figure 6 shows the HIV prevalence among FSWs in India from various sentinel surveillance during the period of 1990-2004 inside and outside major urban areas. While HIV prevalence among FSWs in major urban areas had declined slightly from 64.6 per cent in 1999 to 52.3 per cent in 2001, the prevalence among FSWs outside major urban areas dropped drastically from 54.5 per cent in 2002 to 21.6 per cent in 2004<sup>39</sup>. The HIV prevalence declined among

sex workers in areas that have been the focus of targeted prevention efforts, especially in Tamil Nadu and other southern states. However, prevention efforts are often complicated due to the varied nature of commercial sex.<sup>40</sup>

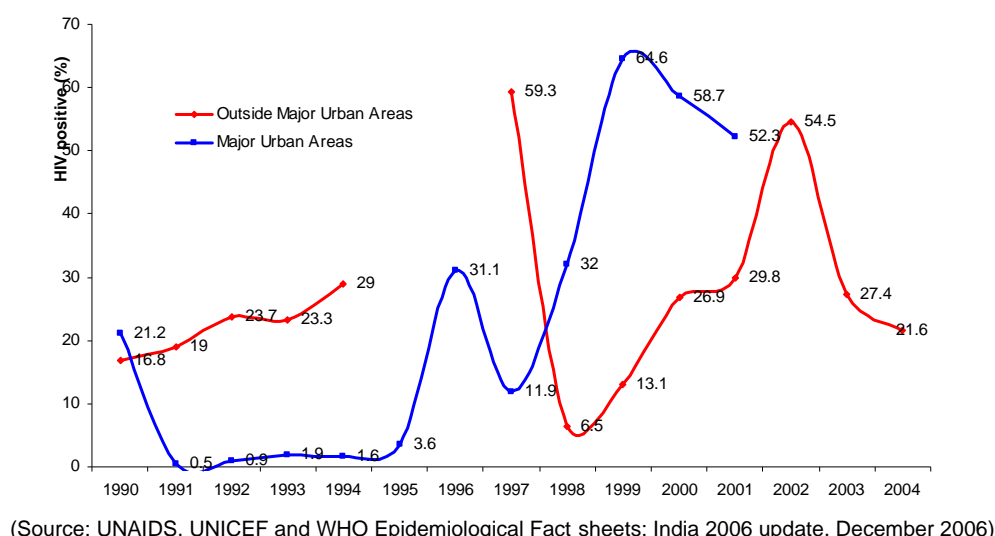
**Figure 6: Estimated adult HIV prevalence (15-49 years), by state, in India 2006**



Source: National AIDS Control Organization, 2007.



**Figure 7: HIV prevalence among female sex workers in India from sentinel surveillance data, 1990-2004**



In **China** even though HIV infections have been reported in most of provinces, most of people living with HIV are believed to live in Henan, Guangdong, Guangxi, Xinjiang and Yunnan provinces where the epidemic is dominated by injecting drug use.<sup>41</sup>

The prevalence amongst drug users in China has been mounting since 1995. The overall prevalence rate from national sentinel sites in 23 provinces is **6-8 per cent**. Both the number of sentinel sites detecting HIV positive cases and number of sites with higher than 5 per cent of HIV prevalence rate are increasing annually. Certain sites in Yunnan, Sichuan, Guangxi and Hunan have found prevalence rates higher than 20 per cent. In Yining city in Xinjiang province, the prevalence rate amongst drug users was even **higher than 70 per cent**.<sup>42</sup>

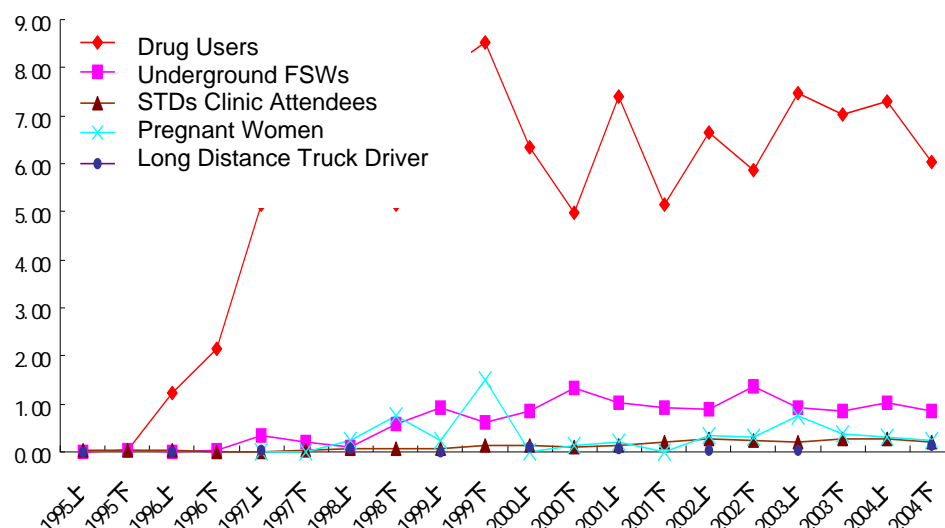
In 2005, a Behavioural Surveillance Survey was carried out among men who have sex with men. Snow-ball sampling was used in this research in six representative cities: Chongqing, Nanjing, Xi'an, Shenyang, Dalian and Qingdao. Reported STIs were about 20 per cent. HIV prevalence varied from place to place. While Chongqing, Dalian and Qingdao did not report HIV cases, HIV prevalence amongst MSM was 1.35 per cent in Nanjing, 1.92 per cent in Xi'an and 2.3 per cent in Shenyang. The overall HIV prevalence rate for this group in this round of BSS was 0.94 per cent.<sup>43</sup> Different ad hoc studies showed consistent evidence that the HIV epidemic among MSM is rising. HIV prevalence in other studies of MSM ranges from 1.5 per cent in Shanghai<sup>44</sup> to 1.7 per cent in the south<sup>45,46</sup> and 3.1-4.6 per cent in Beijing<sup>47,48</sup>.

Multiple risk factors play an important role in the HIV epidemic in China. There is an increasing number of FSWs in China who also are injecting drug users. Many IDUs also buy sex often without using a condom.<sup>49</sup> A study<sup>50</sup> in Guangzhou in 1998 found that 6.9 per cent of FSW respondents were drug injectors, a level that seems to have remained persistent over time. Another study<sup>51</sup> among FSWs in Shandon revealed that 5.2 per cent of them were injecting drug users. In the same year, one study in Guangxi<sup>52</sup> found a level of 7 per cent. A worrying sign from the study in Guangxi was that most of the drug-injecting FSWs tended to share needles and syringes with their injecting fellows; in Guangxi, for instance, this rate was 97 per cent.<sup>53</sup>

Recent surveillance in eight provinces and autonomous regions found a high proportion of IDUs in some places having sex with FSWs. Almost 50 per cent of IDUs in Xingyi and 23 per cent in Donguan had sex with FSWs. Overall, 11.2 per cent of IDUs in the surveillance round had sex with FSWs.<sup>54</sup> While a high proportion of IDUs had sex with FSWs, the level of condom use with their regular sexual partners was extremely low. In 1996, a study of IDUs in Yunnan and Guangxi province found that 68 per cent of them never used condoms when they had sex. This level of unprotected sex was significantly high in Hunan province where a study

team found that 80 per cent of IDUs had never used condoms, and a similar recent study in Anhui province showed 71 per cent of IDUs practiced unprotected sex with their sexual partners.<sup>55</sup>

**Figure 8: HIV prevalence among surveillance groups in China, 1995-2004**



(Source: Ning W. HIV/AIDS Surveillance System in China. National Center for AIDS/STDs Control and Prevention Chinese Center for Disease Control and Prevention. Presentation at XVI International Conference on AIDS, Toronto-Canada, August 12-18, 2006)

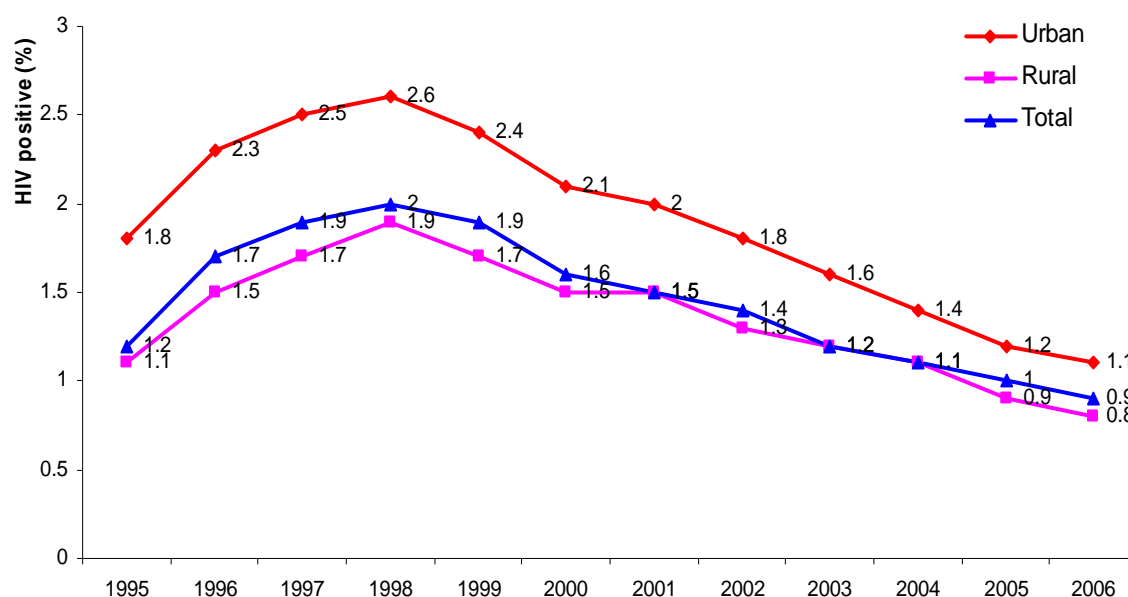
In **Cambodia** after peaking at approximately 3.3 per cent in 1997-98, HIV prevalence amongst the national adult population declined to 1.9% in 2003. Cambodia's 2003 HIV Sentinel Surveillance (HSS) found that there was a larger decline among young female sex workers than those who were older than 20. The reasons for this are twofold: increasing mortality and a decline in HIV incidence. According to recent estimations, The HIV incidence fell steeply between 1994 and 1998 before stabilizing.<sup>56</sup>

On 28 June 2007, the Cambodian Ministry of Health announced an official HIV prevalence estimate which was 0.9 per cent among adults aged 15-49.<sup>57</sup> This is the first time in 10 years of evolution, development and decline that the HIV prevalence rate in Cambodia is less than one per cent. The official HIV prevalence estimate of 0.9 per cent is higher than the findings from the Cambodia Demographic and Health Survey (CDHS 2005). The main reason for the difference was that the CDHS, a household survey, is likely to exclude people from various population groups at higher risk of HIV infection.

Although HIV prevalence in Cambodia has declined considerably, HIV infections and deaths continue occurring. Almost half of new infections are among married women. One third of new infections are passed from mother to child through vertical transmission. As long as the epidemic is generalized, there remains a risk for rapid resurgence with the increase of risk behaviours. It is noted that, although prevalence stabilized amongst pregnant women, the highest prevalence is amongst the youngest women.<sup>58</sup>

It is also noted that while surveillance data continues to demonstrate a declining trend of HIV prevalence, it is also apparent that the nature of the epidemic is changing. Of particular concern is the fact that the highest incidence of HIV is now observed in married women and their children.<sup>59</sup> The new incidence study shows that 75 per cent of new adult infections occur in women.

**Figure 9: HIV prevalence among general population aged 15-49, by residence in Cambodia**



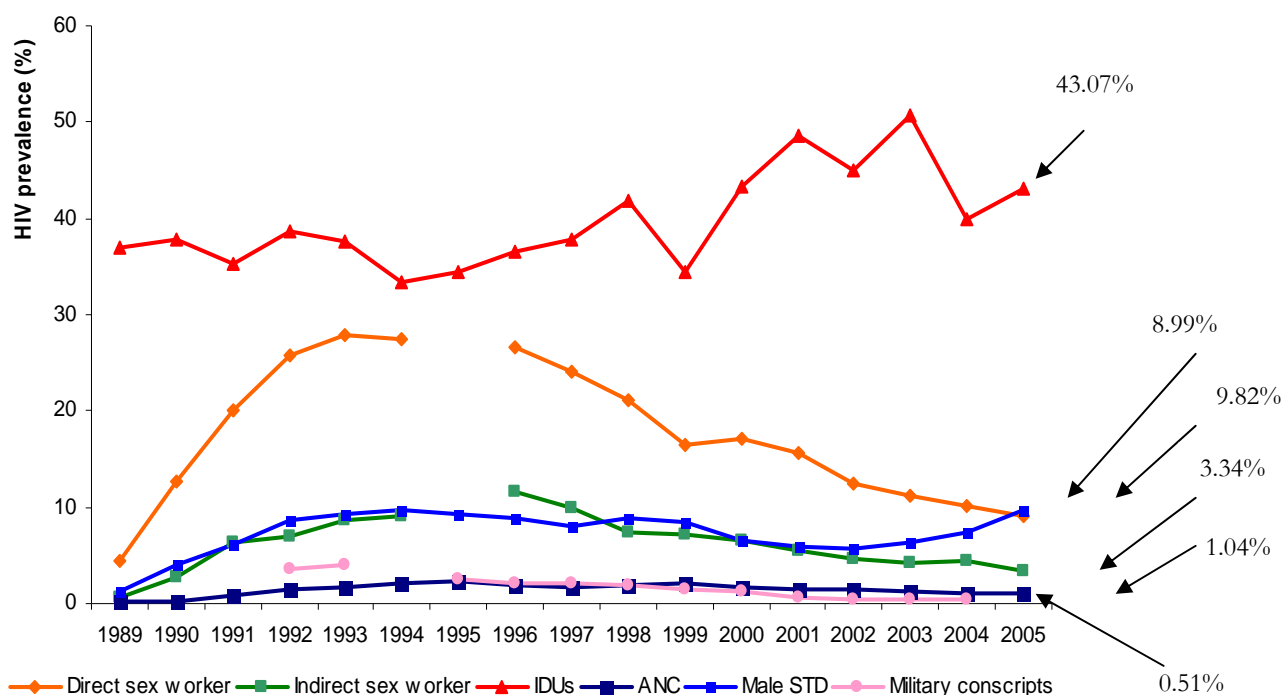
(Source: National Center for HIV/AIDS, Dermatology and Sexually Transmitted Infection (NCHADS), National Institute of Public Health, FHI/USAID, CDC, WHO, UNAIDS, East-West Center. Consensus workshop on HIV estimation for Cambodia, June 28, 2006)

In **Thailand**, with a strong national response from the mid 1990s, particularly through the 100 per cent condom programme, HIV prevalence started to decline amongst sentinel surveillance groups. HIV prevalence has reduced drastically among commercial sex workers since 1994. The patterns of HIV transmission in Thailand have changed over time since the virus spread into the general population. This pattern was also evident in military conscripts and women attending prenatal clinics in the same period. Recent data from WHO<sup>60</sup> showed that 43 per cent of new infections in 2005 were among women, probably infected by their husbands or sexual partners who had in turn been infected either during unsafe paid sex or through injecting drugs.

Despite the fact that HIV heterosexual transmission has declined – owing to the Thai Government's strong national response – HIV prevalence remains persistently high. The HIV prevalence rate amongst IDUs is approximately 50 per cent and has not declined since late 1990s.

FSWs are still one of main risk groups of HIV infections. By the end of 2005<sup>61</sup>, HIV prevalence amongst direct sex workers was approximately 9 per cent, and 3.34 per cent amongst indirect female sex workers. Other groups with high HIV prevalence comprise male sex workers (6.67 per cent), men who have sex with men (MSM) (7.33 per cent), male clients of Sexually Transmitted Infection (STI) clinics (9.82 per cent) and fishermen (2.05 per cent). The picture of the HIV epidemic in Thailand is diverse in terms of both affected sub-populations and spatial distribution. For instance, even though national HIV prevalence among FSWs has declined over the last decade, this trend masks disparities among regions. Amongst indirect sex workers, HIV prevalence is still high in the Central and South regions (including southern conflict zones). Those who work in the North and Central regions are more likely to be infected with HIV than those working in other parts of the country.<sup>62</sup>

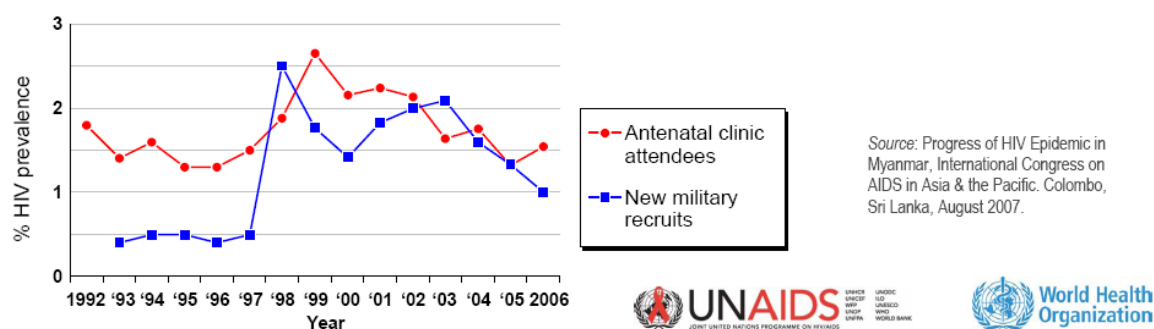
**Figure 10: Injecting drug use has been a leading HIV prevalence among sentinel surveillance groups**



(Source: Bureau of Epidemiology, Ministry of Public Health, Thailand, 2007)

The epidemic in **Myanmar** is also showing signs of a decline, with HIV prevalence among pregnant women at antenatal clinics having dropped from 2.2 per cent in 2000 to 1.5 per cent in 2006.<sup>63</sup> Despite the overall decline in prevalence, the elevated prevalence of HIV among key populations at higher risk is of concern. For instance, during the past three years HIV prevalence among IDUs has been at the level of 40 per cent, and HIV prevalence among FSWs has increased from about 34 per cent in 2004 to more than 36 per cent in 2006.<sup>64</sup>

**Figure 11: HIV prevalence among various groups in Myanmar, 1992–2006**



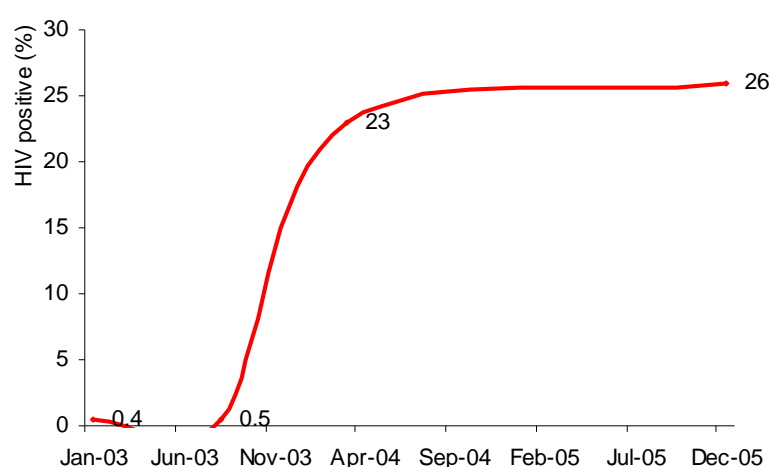
(Source: National AIDS Program Myanmar. Progress of HIV Epidemic in Myanmar. International Congress on AIDS in Asia & the Pacific. Colombo, Sri Lanka, August 2007)

In **Pakistan**, even though the national HIV prevalence among the adult population is currently 0.1 per cent, the country is witnessing an increasing epidemic among injecting drug users. In July 2003 an outbreak of HIV infection was identified amongst IDUs in Larkana, Sindh province. Within the ten months period from August 2003 to June 2004 the number of reported HIV cases among IDUs in jail increased from 19 to 69.<sup>65</sup>

During the same time period, similar trend was observed in Karachi, where 7 per cent (57) of IDUs was reported as HIV positive against the total number screened (n=800). This indicated a rise in the proportion of HIV infections amongst IDUs in Karachi, which was further validated through several studies, indicating that the epidemic among IDUs in Karachi has shifted from low level to “concentrated”.<sup>66</sup>

The HIV prevalence amongst IDUs in various cities of the country has reportedly increased to 26 per cent in Karachi, 2.5 per cent in Lahore, 12 per cent in Sargodha, 0.5 per cent in Rawalpindi, 1 per cent in Sialkot and 9.5 per cent in Faisalabad.<sup>67,68</sup> Other studies found out that the HIV prevalence among this risk group has reached up to 24 per cent in Quetta<sup>69</sup>, and 8 per cent in Larkana.<sup>70</sup>

**Figure 12: HIV shifted from low level to “concentrated epidemic” among IDUs in Karachi - Trend in HIV prevalence among IDUs in Karachi, Pakistan**



(Source: Altaf A., et al. Harm reduction among drug users in Karachi, Pakistan. Presentation at the XV International HIV/AIDS Conference, Bangkok, 2004 and National Study of Reproductive Tract and Sexually Transmitted Infections)

A recent survey on STIs and risk behaviours<sup>71</sup> conducted in 2005 by Family Health International (FHI) and the United Kingdom Department for International Development (DfID) in Lahore and Karachi found that IDUs practised high risk behaviours. Although the HIV prevalence amongst IDUs in Karachi was much higher than that of IDUs in Lahore, it must be noted that reported unsafe injecting behaviours were significantly higher in Lahore where 82 per cent of IDUs reported using a shared needle at some time in the previous week and 35 per cent reported using a shared needle at all injections in the previous week. The respective figures in Karachi were 48 per cent and 6 per cent.

### **Single or multiple risk factors – which “engine” drives the HIV epidemic in Asia-Pacific?**

Unlike in Africa, where the HIV epidemic is driven mostly by heterosexual transmission, the epidemic in Asia is characterized by a complex different transmission routes. The most dangerous and overwhelming route is the use of unclean injecting equipment among injecting drug users. This is followed by transmission of the virus via unprotected sex. The more unprotected sex acts and/or partners, the more likely that person exposes himself/herself to the virus. In Asia-Pacific the turnover or frequency of sexual partners of sex workers (both male and female) and transvestites is as high as the likelihood of their infection to their sexual partners, their wives and/or regular partners. Asia-Pacific recently witnessed an increasing

proportion of men who have sex with men who reported high numbers of sex partners. Since the possibility of acquiring the virus via unprotected anal sex is higher than unprotected vaginal sex, there is a likelihood of another wave of HIV among MSM.

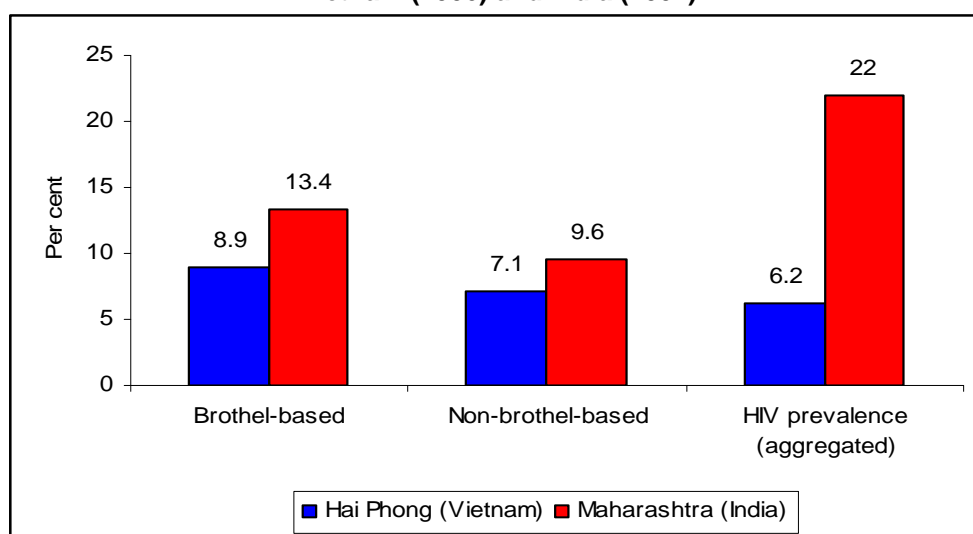
These risk factors in Asia-Pacific are, however, not mutually exclusive. They interact with each other providing a “booster effect” to promote transmission of the epidemic. A number of countries, such as Vietnam, Indonesia, China and Bangladesh, have witnessed the combination between sex and drug use where more and more sex workers are also injecting drug users and/or having unprotected sex with injecting drug users.

### **The business of sex: sex workers and their clients**

In Asia, commercial sex has been one of the most common risks to HIV infection. Reliable data on the proportion of men who buy sex is unavailable or tend to be biased due to the sensitivity of question itself. Behavioural Surveillance Surveys (BSS) in some countries (Vietnam, Lao PDR, Cambodia, Indonesia and Pakistan) have tried to get this information by including certain groups of men who are potentially clients of sex workers due to their mobility or occupation characteristics. Obviously, information from this population cannot represent the general male population. Other efforts (for instance in Vietnam) have used household-based surveys to get this information in the general male population. However, the result is more likely to be underestimated as those included in this sample are consider “clean” since those who are in the most-at-risk populations tend to exclude themselves from participating in such surveys. Generally, efforts so far to obtain such information tend to overestimate or underestimate the reality leaving us with little hard usable data, though in one report<sup>72</sup> from household survey results the authors concluded that between 5 and 10 per cent of men reported had bought sex in the preceding year.

There are a number of factors determining the magnitude of sexual transmission from sex workers to their clients. It can be **client turnover** (or frequency of concurrent clients per time unit, generally per night or per week) since, if that sex worker has more clients, the probability of her/him being exposed to the virus (or transmitting if she already infected) is more likely than he/she has less clients. For instance, the results from the 2006 Integrated Biological and Behavioural Surveillance (IBBS)<sup>73</sup> in **Vietnam** revealed that number of clients per week among street-based sex workers in Hai Phong was 8.9 and among karaoke-based sex workers was slightly lower at 7.1 clients per week. The aggregated HIV prevalence among female sex in Hai Phong in the same survey was 6.15 per cent (7.2 per cent among street-based sex workers and 5.1 per cent among karaoke-based sex workers).<sup>74</sup> The BSS in **India** five years ago revealed the same situation when they found out that brothel-based sex workers in Maharashtra had 13.4 clients per week (or 2.4 clients per night) and non-brothel-based sex workers had 9.8 clients per week (or 1.8 clients per night).<sup>75</sup> A report of the 2004 sentinel surveillance found that in the States of Andhra Pradesh, Karnataka, Maharashtra and Tamil Nadu the overall prevalence among female sex workers was 22 per cent.<sup>76</sup>

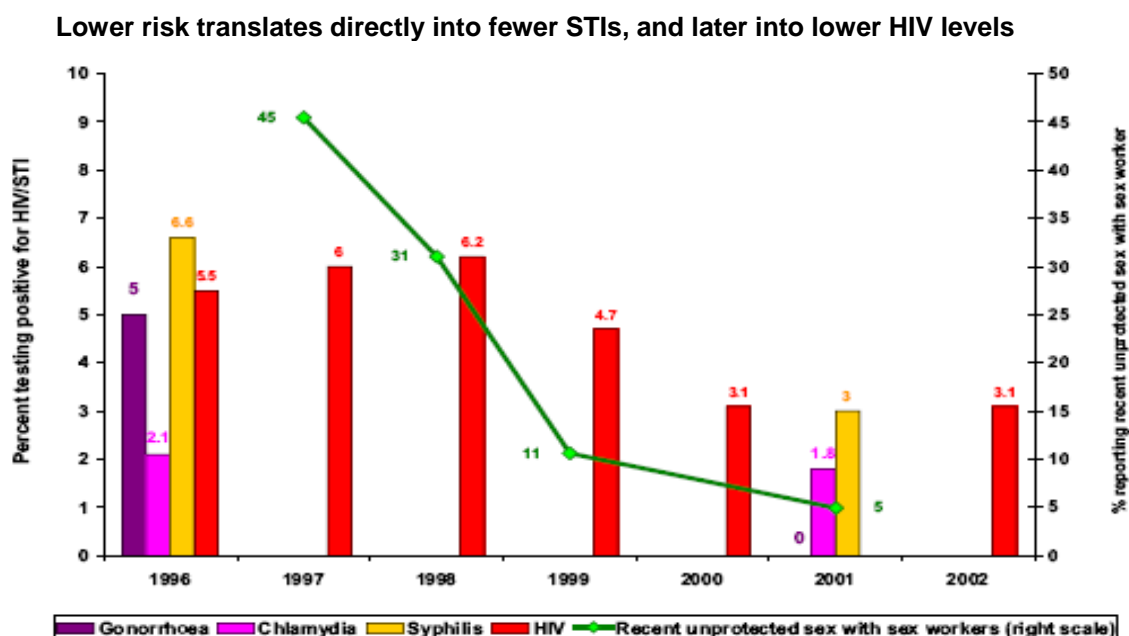
**Figure 13: Number of clients per week and HIV prevalence in selected areas of Vietnam (2006) and India (2001)**



(Source: - Ministry of Health, Vietnam. Results from the HIV/STI Integrated Biological and Behavioural Surveillance (IBBS) in Vietnam, 2006; ORG Center for Health Research and FHI/IMPACT, USAID. Behavioural Surveillance Survey in Maharashtra, 2001)

Another factor is the situation of **screening and treatment of sexually transmitted diseases/infections (STDs/STIs)** since those diseases act as co-factors to promoting transmission of the virus. One example from Cambodia is the decline of both STIs and HIV prevalence among police reporting who reported unprotected sex. Figure 14 shows a drop in the frequency of visiting commercial sex workers and of having unprotected sex with sex workers (from 45 per cent in 1997 to 5 per cent in 2001)<sup>77</sup> is accompanied by a decline in both STI and HIV prevalence.

**Figure 14: Per cent of police reporting recent unprotected commercial sex (right scale), and per cent infected with HIV and other STIs (all left scale) in Cambodia, 1996- 2002**

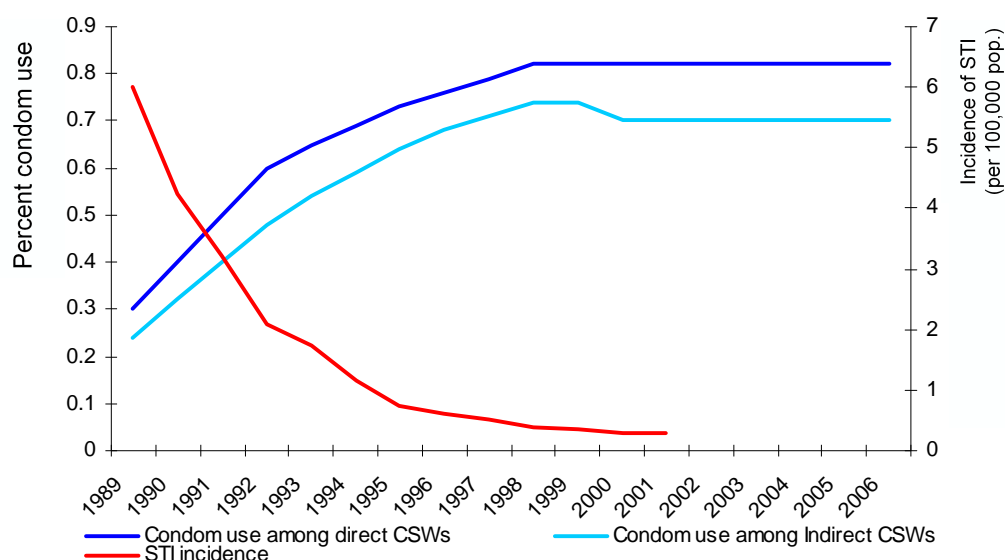


(Source: Monitoring the AIDS Pandemic (MAP). AIDS in Asia: Face the facts. UNAIDS, WHO, UNICEF, the Japanese Foundation for AIDS Prevention, USAID, FHI and CDC, 2004)

But the major factor is the **condom use level**. Condom use is considered as a protective factor if done properly and consistently. BSS data shows that the condom use level is different from country to country and even within countries.

One example of success of implementation of a condom programme is that of **Thailand**. The “100 per cent Condom Program” was promoted and implemented nationwide during 1991-1996. Different indicators showed successes, such as a lowering of HIV prevalence among female sex workers and their clients, a high rate of consistent condom use level among FSWs (from 14 per cent to more than 90 per cent among direct FSWs), and lowering sex visits of clients.<sup>78,79</sup>

**Figure 15: Condom use level among sex workers and the incidence of sexually transmitted infections**

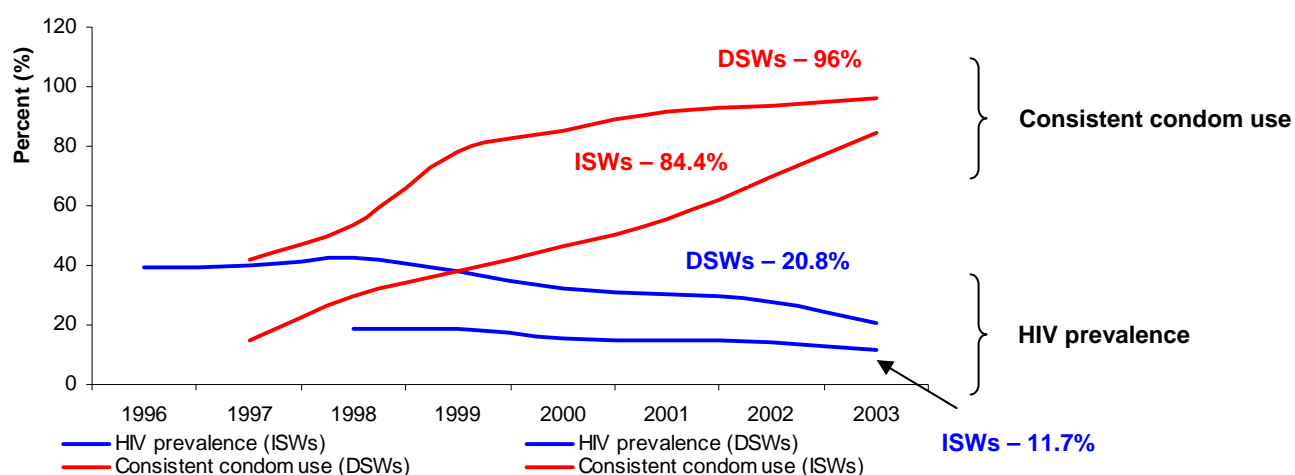


(Sources: Bureau of Epidemiology, Ministry of Public Health; Brown T and Thailand A2 Team. Preliminary results of HIV/AIDS projection 2005-2025. Presentation at the Integrated Analysis and Advocacy-HIV/AIDS Projection Meeting, Ministry of Public Health. December 9, 2006)

Another example is the replication of the **Cambodian** hundred per cent Condom Use Program (CUP) which was based on the successful experience in Thailand. It was piloted in Cambodia in 1998. Since then, this programme has been expanded nationwide. It promotes consistent condom use for all types of female sex workers and their clients. Figure 16 illustrates the success of CUP in Cambodia in curbing the trend of HIV prevalence among FSWs. By the end of 2003, consistent condom use among direct sex workers in Cambodia reached to 96 per cent. Even the lower level amongst indirect sex workers of 84 per cent was still higher than the 80 per cent target recommended by UNAIDS and WHO.<sup>80</sup>



**Figure 16: Consistent condom use increases, HIV prevalence decreases, Cambodia, 1996-2003**



(Source: National Center for HIV/AIDS, Dermatology and STIs. BSS 2003: Sexual behaviour among sentinel groups, Cambodia – BSS Trends 1997-2003. Presentation on March 24, 2004)

Figure 17 shows the change over time in the condom use level among commercial sex workers in **China** over the past 10 years (1995-2005). Even though there is an increasing trend towards condom use from the early stages of the HIV epidemic, it is still very low. The 2006 national HIV sentinel surveillance revealed that the consistent condom use rate among FSWs one month before the survey was 40 per cent.<sup>81</sup>

**Figure 17: Condom use in commercial sex during last month among female sex workers, China, 1995-2005**

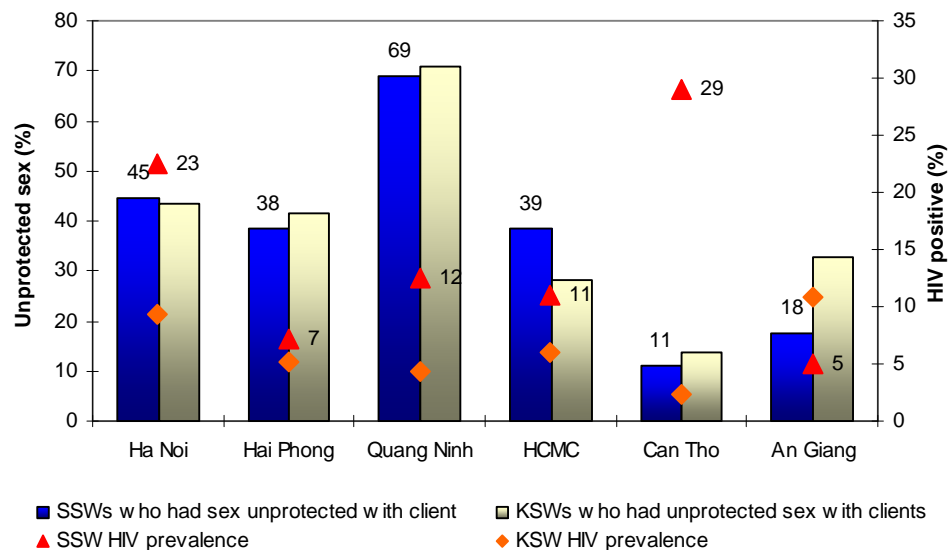


(Source: National HIV Sentinel Surveillance, 2006)

One exceptional case is **Vietnam** where condom use level was exceptionally high (more than 90 per cent) during the last two rounds<sup>82,83</sup> of the Behavioural Surveillance Survey, though HIV prevalence, particularly among sex workers, kept on rising. However, if we look further into the surveys we see that the reported consistent condom use is only during the last sexual act. In fact, the consistent condom use level in 2006 IBBS was low (from 36 to 62 per cent).<sup>84</sup> There was a high proportion of sex workers engaging in unprotected sex, in spite of easy access to condoms and high knowledge levels HIV infection. This raises questions on the adequacy of programme coverage and/or their implications.<sup>85, 86</sup> Another reason is that sex workers in Vietnam, particularly in big cities (Hanoi, Ho Chi Minh City, Hai Phong, Can Tho)

are injecting drug users with a high level of sharing injection equipment.<sup>87</sup> This is the booster effect that promotes transmission of the virus more quickly and effectively. We will come back to this combination in the section on multiple risk factors.

**Figure 18: Levels of unprotected sex and HIV prevalence, Vietnam**



(Source: Ministry of Health, Vietnam. Results from the HIV/STI Integrated Biological and Behavioural Surveillance (IBBS) in Vietnam, 2006)

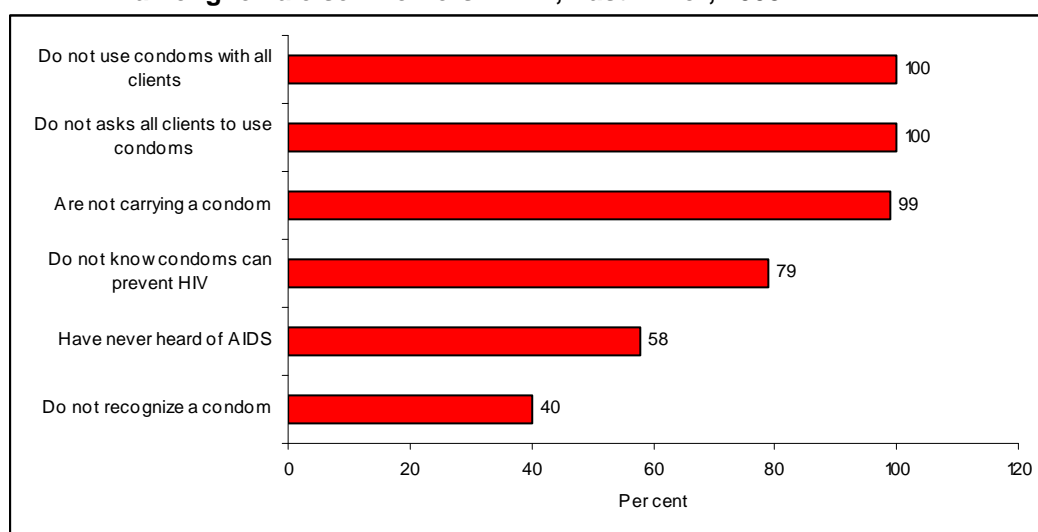
**Note:** SSWs = Street based sex workers  
KSWs = Karaoke based sex workers

Why then, with the exception of some successful countries, condom use levels remain so low, despite the fact that many efforts have been made across the region? Programme strength and coverage play an important role in promoting and increasing condom use levels. The other important part is knowledge and behaviour of people themselves in the loop of the sex industry. Examining further knowledge and behaviour regarding condom within the **supplier-demander-mediator** triad would help us to understand this situation.

In an example of a study<sup>88</sup> from Dili, Timor-Leste, it was found that nearly six out of ten sex workers had never heard of AIDS and four out of ten did not recognize a condom. It is thus logical that almost 100 per cent did not carry a condom and that 100 per cent of them did not ask their clients to use a condom.

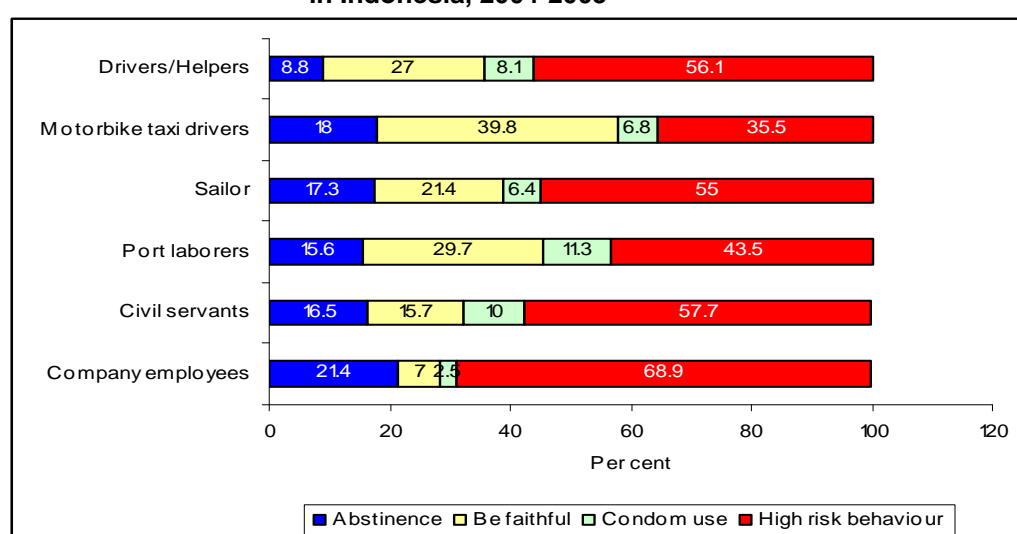
Regarding clients of sex workers, a 2004-2005 study in Indonesia<sup>89</sup> found that less than 12 per cent of male respondents reported using condoms to prevent HIV.<sup>90</sup>

**Figure 19: Knowledge and behaviours related to HIV and condoms use among female sex workers in Dili, East Timor, 2003**



(Source: Pisani E., and Dili survey team. HIV, STIs and risk behaviour in East Timor: an historic opportunity for effective action. Family Health International, 2004)

**Figure 20: Percentage of male respondents by “ABC” Behaviour in Indonesia, 2004-2005**



(Source: Ministry of Health, Indonesia. Results from the Behavioural Surveillance Survey (BSS) in Indonesia 2004-2005. 2005)

Implementing condom programmes is still challenging since they do not receive support much from mediators (or the owner of brothels). One study in Thailand<sup>91</sup> found that 44 per cent of owners or managers denied sex workers check-ups and treatment, while 50 per cent did not introduce any measures of condom promotion.

### **Riskier behaviour: high level of sharing drug injecting equipment among injecting drug users**

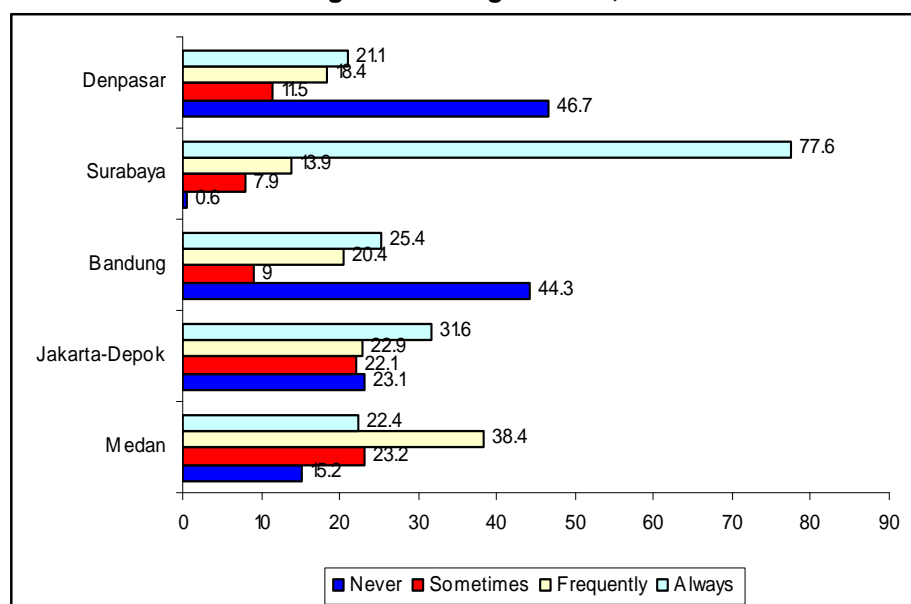
Sharing injecting equipment is a very efficient way to pass the virus within an injecting drug user network and from one network to others. The report<sup>92</sup> of the Monitoring the AIDS Pandemic (MAP) has well documented and captured the risk behaviour of injecting drug users in Asia-Pacific. Providing an accurate size estimation of the number of injecting drug

users in each country is a challenge requiring reliable sources of data from well organized system. Even though some of the available data in Appendix A is out-of-date, it provides us a good picture of number of injecting drug users and the estimated HIV prevalence among IDUs in each country.

In some countries (for example, **Vietnam**) HIV prevalence among IDUs seems to have leveled off. In others, such as **Indonesia, China or Thailand** we have witnessed a stabilization of HIV prevalence among this group at a high level.<sup>93</sup> Some other countries (for example, **Pakistan**) observed a sharp rise of HIV prevalence among IDU cohorts within a short period of time. Data from the sentinel surveillance in major urban areas also draws a clear picture of an increasing trend among IDUs in **Nepal**. While it was almost zero per cent during period 1991-1994, it jumped up to 10 per cent within one year and skyrocketed up to 70 per cent in 2002.<sup>94</sup>

In **Indonesia**, for example, recent IBBS in 2004-2005 showed that the proportion of drug users who practised “wet sharing” (or “*Berbagi Basah*”) was very high. While Denpasar recorded 51 per cent of drug users who had ever experienced this practice ever, in Surabaya the figure was almost 100 per cent.

**Figure 21: Percentage of injecting drug users in Indonesia practicing “wet sharing” or “*Berbagi Basah*”, 2004-2005**

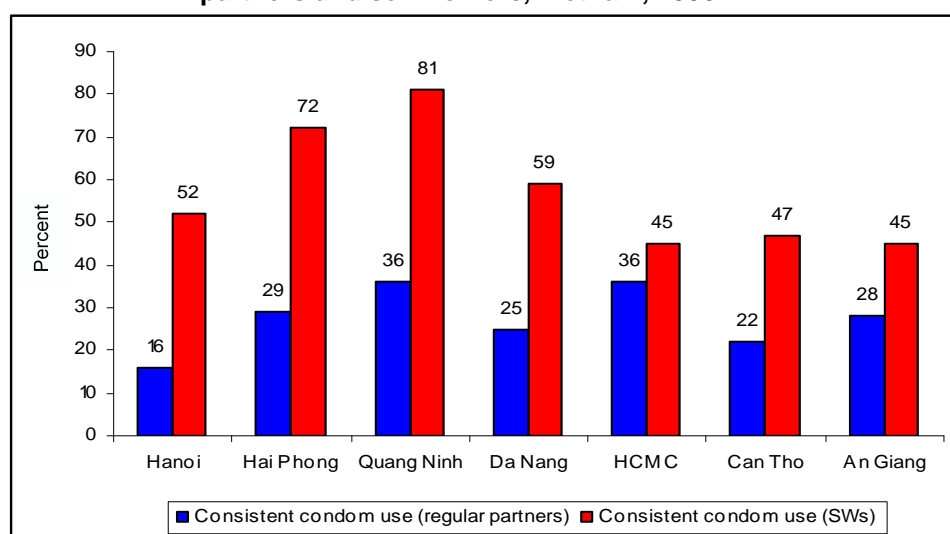


(Source: Ministry of Health, Indonesia. Results from the Behavioural Surveillance Survey (BSS) in Indonesia 2004-2005. 2005)

A similar picture on sharing injecting equipment was observed in **Bangladesh**. The fifth round of BSS showed that needle and syringe sharing continued to be routine among IDUs in Bangladesh, particularly among those living in Central-A. On average, 74 per cent of IDUs in Bangladesh had shared injecting equipment with other IDUs over the past week.<sup>95</sup> The level of syringe and needle sharing in **China** has been stable at 40 per cent. Different ad hoc studies found an even higher level of sharing in places where there is a concentration of IDUs amongst the population. For example, a study<sup>96</sup> in Guangxi and Yunnan province in 2002 in detoxification centres showed that almost 80 per cent of IDUs in the survey practised sharing of syringes and needles. Another study<sup>97</sup> in a county of Sichuan province in 2002 showed that the level of sharing syringes and needles amongst surveyed IDUs was as high as 60 per cent. In **Pakistan**, recent IBBS<sup>98</sup> found that reported unsafe injecting behaviours were significantly higher in Lahore, where 82 per cent reported using a shared needle at some time in the previous week and 35 per cent reported using a shared needle at all injections in the previous week, than in Karachi, where the respective figures were 48 per cent and 6 per cent.

IDUs do not contain a HIV epidemic within their drug injecting communities but tend to spread the virus to other populations (both high risk and “lower risk”). Evidence across the region recorded that IDUs have sex with both their regular sex partner and sex workers. The likelihood of transmitting HIV from infected IDUs to their regular and irregular sex partners, and from them to other groups (such as clients of sex workers), is very high. Recent IBBS in **Vietnam**<sup>99</sup> revealed that 28-53 per cent of IDUs in seven surveyed sites were having sex with regular partners one year before the survey and 14-35 per cent of them also had sex with sex workers. Unfortunately, the condom use level between those IDUs and their sex partners (both regular partners and commercial sex workers) was low (see Figure 22). In the southern provinces of Vietnam IDUs in the survey tended to have sex with commercial sex workers and use condoms less than those of in northern provinces. Less than 50 per cent of IDUs in these provinces reported using condoms consistently when having sex with sex workers.

**Figure 22: Condom use level between injecting drug users and their regular sex partners and sex workers, Vietnam, 2006**

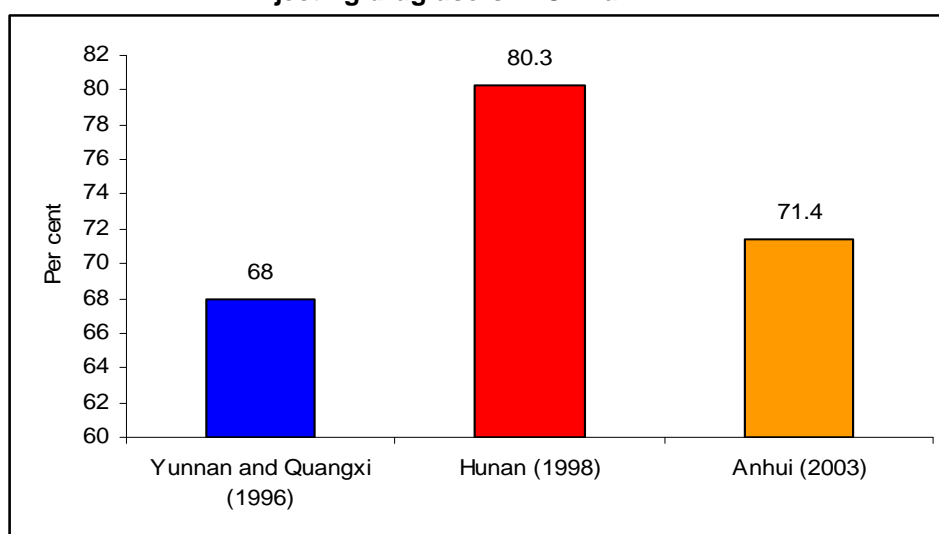


(Source: Ministry of Health, Vietnam. Results from the HIV/STI Integrated Biological and Behavioural Surveillance (IBBS) in Vietnam, 2006)

**Note:** HCMC = Ho Chi Minh City

The pattern of unprotected sex between IDUs and commercial sex workers in **China** is similar to that in Vietnam. Recent surveillance in eight provinces and autonomous regions found a high proportion of IDUs in some places having sex with FSWs. Almost 50 per cent of IDUs in Xingyi and 23 per cent in Donguan had sex with FSWs. Overall, 11.2 per cent of IDUs in the surveillance round had sex with FSWs.<sup>100</sup> While a high proportion of IDUs had sex with FSWs, the level of condom use with their sexual partners was extremely low. In 1996, a study of IDUs in Yunnan and Guangxi province found that 68 per cent of them never used condoms while having sex. This level of unprotected sex was very high in Hunan province when a study team found that 80 per cent of IDUs never used condoms. Recently, a study in Anhui province revealed that 71 per cent of IDUs practised unprotected sex with their sexual partners.<sup>101</sup>

**Figure 23: High prevalence of unprotected sex among injecting drug users in China**



(Source:- Li X, Stanton B, Zhou Y. Injection drug use and unprotected sex among institutionalized drug users in China. *Journal of Drug Issues*, 2000:663– 674.

- Chen X, He J, Wu Y. Survey for HIV prevalence and risk factors among drug users in Hunan. *Chin J STD/AIDS Prev Cont* 2000; 6:141–142.

- Liu H., Grusky O., Li X. and Ma E. Drug users: a potentially important bridge population in the transmission of sexually transmitted diseases, including AIDS, in China. *Sexually Transmitted Diseases*, February 2006;33(2):111-117)

In **Pakistan**, recent Integrated Biological and Behavioural Surveillance<sup>102</sup> in 2005 conducted by FHI and DfID revealed that 28 per cent IDUs in Karachi and 33 per cent of IDUs in Lahore visited female sex workers one month before the survey. Similar to the China and Vietnam situations, the level of unprotected sex between these IDUs and female sex workers was extremely high. Only 25 per cent IDUs reported using condoms consistently with female sex workers during their sexual acts one month before the survey.

Obviously, comprehensive harm reduction programmes including syringe and needle exchange, and the provision of substance alternatives, should be carried out properly targeting IDUs. It is noted that in some countries and/or settings injecting drugs is illegal, and thus IDUs are forced underground and being ignored by society or detained in rehabilitation centres and prisons. Addressing injecting drug use as a driver of HIV in such settings is a considerable challenge, as maintenance of a punitive approach is not conducive to conduct effective strategies to reduce the risks among IDUs and their partners.

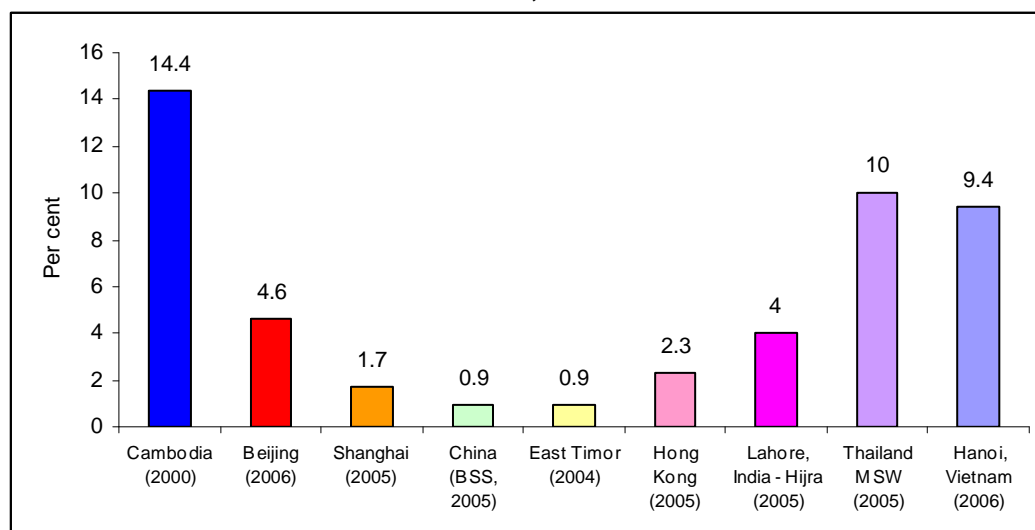
### **The growing HIV epidemic among men who have sex with men in Asia-Pacific**

As mentioned in the overview, few documents recorded how HIV came to the community of men who have sex with men returning from the United States, Europe or Australia, or were recipients of contaminated factor VIII from the United States.<sup>103</sup> As the HIV epidemic matured and spread all over the region via two main transmission routes: injecting drug use and heterosexual sex, the transmission of HIV via homosexual sex (between men) has been neglected, particularly in intervention programmes. There are two main reasons for this. First, sex between men is difficult to define in many Asian settings as it includes homosexual relationships between men who identify themselves as gay as well as anal sex between heterosexual men and transgender sex workers. Second, due to Asian social norms, many MSM have to hide their identities, and their exposure to intervention programmes is limited. Many of them choose a life as a married man with a woman but meet their male sex partners clandestinely. Some countries have culturally sanctioned transgender (such as *hijra* in Bangladesh, *waria* in Indonesia or *katoey* in Thailand and Lao PDR).<sup>104</sup>

A recent report<sup>105</sup> has well documented information about men who have sex with men and their risk behaviour, showing that a HIV epidemic among men who have sex with men is emerging. In 2000, a STI survey in **Cambodia** found that 10 per cent of MSM in their sample had tested positive for HIV.<sup>106</sup> In **Hong Kong**, a local NGO has been offering voluntary counseling and testing (VCT) services specifically for MSM since 2001. They found that the HIV prevalence had been climbing from less than 1 per cent in 2000-2003 to almost 2.3 per cent in 2005-2006.<sup>107</sup> The two rounds of surveys among MSM in Ho Chi Minh City, **Vietnam** during 2004-2006<sup>108</sup> found that HIV prevalence among MSM was around the level of 6 per cent. Figure 24 shows HIV prevalence in selected areas around Asia-Pacific during the last five years. It is noteworthy that, due to difficulties in accessing the MSM community, most of sampling techniques (time-location sampling, snow ball sampling or respondent driven sampling) used in those surveys/studies aimed at collecting information in the gathering places of homosexual men. The HIV prevalence presented in Figure 24, of course, can not be represented as that of the MSM community as a whole.<sup>109</sup> Data recording to what extent the general male population engages in homosexual relationships are very scarce, and data from a few household-based studies provided inconsistent figures.<sup>110</sup>

Anal sex between men who have sex with men is considered to be riskier than both vaginal sex and oral sex. The likelihood to be infected or transmitting the HIV virus from one man to another is higher since the anus is not naturally lubricated and thus a small tear or lesion from one partner could easily pass HIV to their male sex partners during unprotected anal sex.

**Figure 24: HIV prevalence among men who have sex with men in selected areas in Asia-Pacific, 2000- 2006**



(Sources: - Family Health International. Sexual behaviour, STIs and HIV among men who have sex with men in Phnom Penh 2000. October 2002.

- Pisani E., and Dili survey team. HIV, STIs and risk behaviour in East Timor: an historic opportunity for effective action. Family Health International, 2004.

- Xu H., Zhang B., Zeng Y. and Li X. HIV Epidemic Status and Behavioural Surveillance among MSM in China. Presentation at XVI International AIDS Conference, Toronto, Canada, August 12-18, 2006.

- Zhu TF *et al.* High risk populations and HIV-1 infection in China. *Cell Research*, 2005;**15**(11-12):852-857.

- Ma X *et al.* Possible rise in HIV prevalence among men who have sex with men (MSM) in Beijing. Abstract MOPE0526. XVI International AIDS Conference. August 13-18, 2006. Toronto.

- Working Group on Men who have sex with Men in Hong Kong, Community forum on AIDS, Hong Kong Advisory Council on AIDS. Report of community assessment and evaluation of HIV prevention effort on men who have sex with men in Hong Kong 2005. September 2006.

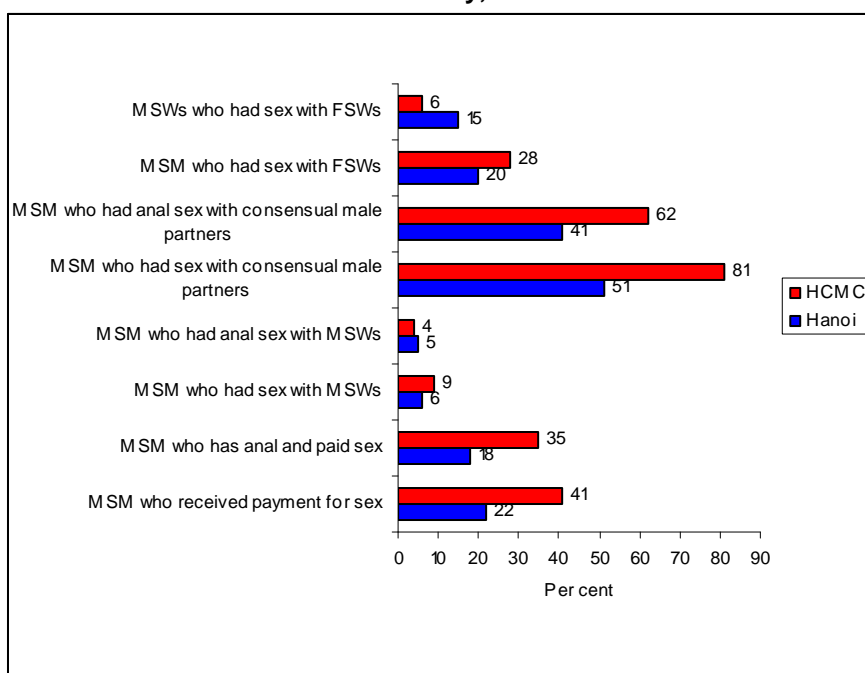
- National AIDS Control Program, Ministry of Health, Government of Pakistan, FHI, DFID. National study of reproductive tract and sexually transmitted infections: Survey of high risk groups in Lahore and Karachi, 2005. 2006.

- Griensven F. V., Thanprasertsuk S., Jommaroeng R., Mansergh G., Naorat S., Jenkins R. A., Ungchusak K., Phanuphak P., Tappero J. W., and the Bangkok MSM Study Group. Evidence of a Previously Undocumented Epidemic of HIV Infection among Men who have sex with Men in Bangkok, Thailand. *JAIDS*. 2005;**19**:521-526.

- Ministry of Health, Vietnam. Results from the HIV/STI Integrated Biological and Behavioural Surveillance (IBBS) in Vietnam, 2006)

Multiple sex partners and condom use level are two important factors determining the possibility of transmitting HIV from one man to another during anal sex. Recent IBBS in **Vietnam**<sup>111</sup> revealed that MSM reported sexual relations with multiple types of partners, such as other MSM and female sex partners (including female sex workers). According to this study, 99.5 per cent of MSM in Ho Chi Minh City and 64.1 per cent MSM in Hanoi reported sex with partners in the past month prior to the survey. Many MSM also reported two partners or more per month, particularly those who sold sex. Accordingly, 43.7 per cent of MSM in Hanoi and 70.2 per cent of MSM in Ho Chi Minh City reported having sex with more than 2 partners one month prior to the survey. In **Timor-Leste** half of MSM had multiple sex partners in the same period.<sup>112</sup> In **India**, surveillance among MSM in 5 cities found that the mean number of non-commercial partners in the preceding month ranged from four in Delhi and Mumbai to six in Chennai.<sup>113</sup>

**Figure 25: Sexual partners of men who have sex with men in Hanoi and Ho Chi Minh City, Vietnam 2006**



(Source: Ministry of Health, Vietnam. Results from the HIV/STI Integrated Biological and Behavioural Surveillance (IBBS) in Vietnam, 2006)

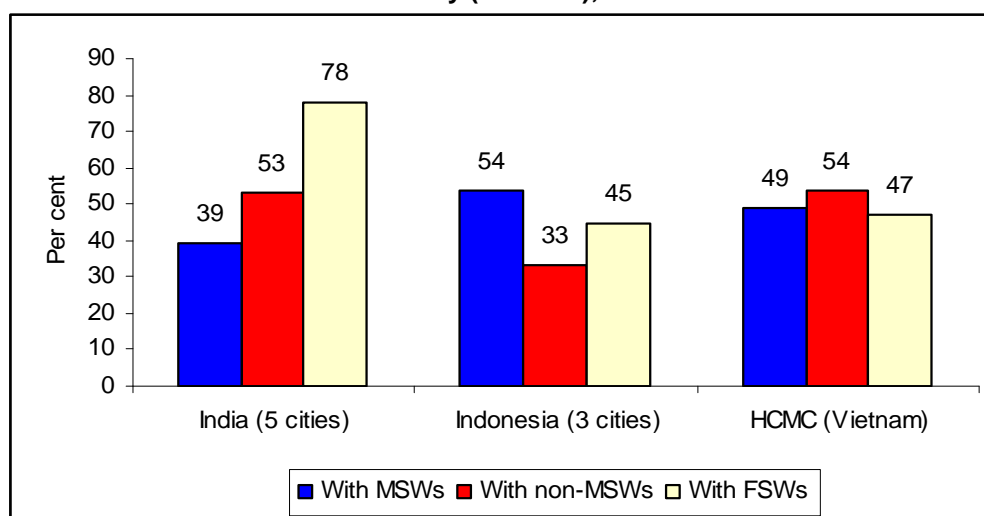
**Note:** HCMC = Ho Chi Minh City.

Condom use levels during the last sex act between MSM and non-MSWs were low, ranging from 33 per cent in Indonesia in 2002 to 54 per cent in Ho Chi Minh City (Vietnam) in 2006. Condom use levels during the last sex act between MSM and MSWs was slightly higher but did not exceed 50 per cent, which is far from the 80 per cent target set by UNAIDS and WHO.

During 2002, results of BSS in **India** and **Indonesia** showed that condom use levels in commercial sex between men and women were higher than that in commercial sex between men. In a preceding study this situation seemed to be the same in Ho Chi Minh City, **Vietnam**.<sup>114</sup> However, in the 2006 IBBS<sup>115</sup> the condom use level between MSM and their commercial sex partners appeared to be the same or lower than that of prior study. While 49 per cent of MSM used a condom during the last sexual act with a male sex worker, only 47 per cent did so in their last sexual act with female sex workers.



**Figure 26: Condom use level during the last sexual act between men who have sex with men and different sex partners in India (2002), Indonesia (2002-2003) and Ho Chi Minh City (Vietnam), 2006**



(Sources: - India National AIDS Control Organization (NACO) – Ministry of Health and Family Welfare. National Baseline High Risk and Bridge Population Behavioural Surveillance Survey, 2002.  
 - Indonesia Ministry of Health and Central Bureau of Statistics. Behavioural Surveillance in 13 provinces, 2002-2003. 2004.  
 - Ministry of Health, Vietnam. Results from the HIV/STI Integrated Biological and Behavioural Surveillance (IBBS) in Vietnam, 2006)

**Note:** - MSWs = Male sex workers  
 - FSWs = Female sex workers

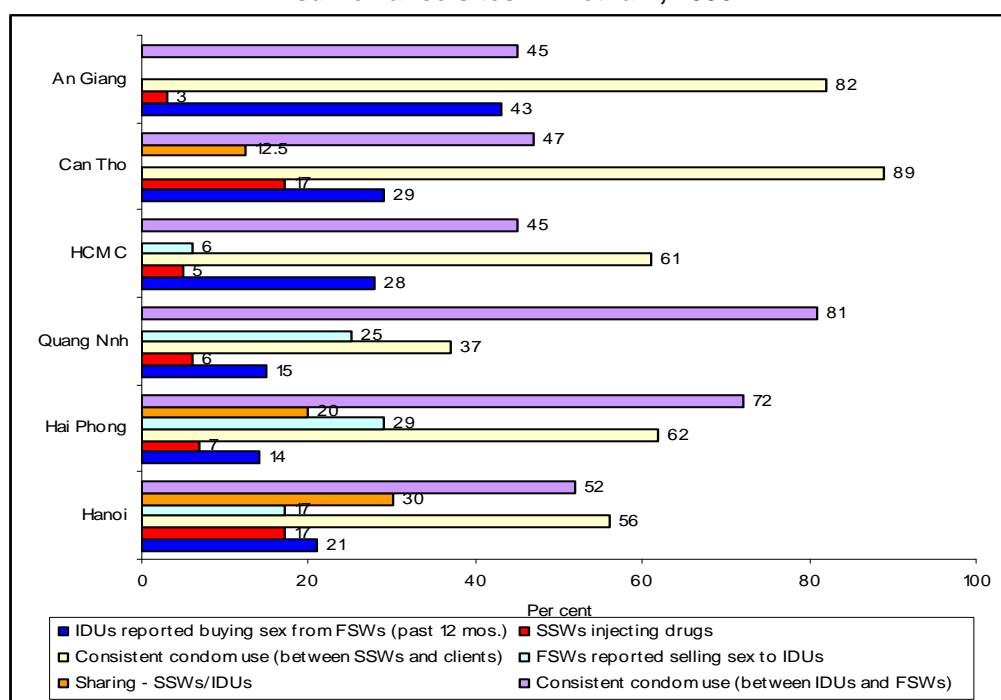
### **The combination of risk behaviours**

It would be easier to deal with an epidemic with separate risk factors, but in Asia-Pacific the three risk behaviours cited above do not act separately and are intertwined with each other. Unlike the simple mathematical equation in which one risk factor added to another produces a cumulative “product”, the progression in this case is exponential.

Data from both sentinel (or biological) and behavioural surveillance from country level in Asia showed that women who sell sex are also injecting drug users, injecting drug users buy and sell sex from both men and women.<sup>116</sup>

In some countries such as China, Vietnam and Lao PDR, the practice of injecting drugs among female sex workers is common. In **China**, 14.8 per cent of female sex workers in the 2002 survey<sup>117</sup> in Beijing reported injecting drugs. In **Lao PDR**, recent Second Generation Surveillance (SGS)<sup>118</sup> in 2004 revealed that 11 per cent of female sex workers inject drugs. **Vietnam**, as aforementioned, is a special case and very complex in terms of multiple risk behaviours among most-at-risk populations. Figure 27 provides a snapshot of this risk combination in different surveillance sites during 2006 IBBS.<sup>119</sup> Drug injection among female sex workers is well established in the surveyed provinces/cities. Hanoi and Can Tho have the highest proportions of female sex workers who are also drug injectors. This is one of the reasons explaining for the complexity of HIV epidemic in Vietnam in general and in Hanoi in particular. Also injecting drug users buy sex from female sex workers frequently. This value ranges from 14 per cent in Hai Phong up to 43 per cent in Can Tho. Unfortunately, consistent condom use levels between female sex workers and IDUs (reported from both sides of respondents) were low (see **Figure 27**); for instance only 37 per cent of street-based sex workers in Quang Ninh used a condom consistently with their clients 12 months prior to the survey, and 45 per cent of IDUs in Ho Chi Minh City and Can Tho reported consistent condom use when had sex with female sex workers.

**Figure 27: Risk behaviours of injecting drug users, sex workers and their clients in surveillance sites in Vietnam, 2006**



(Source: Ministry of Health, Vietnam. Results from the HIV/STI Integrated Biological and Behavioural Surveillance (IBBS) in Vietnam, 2006)

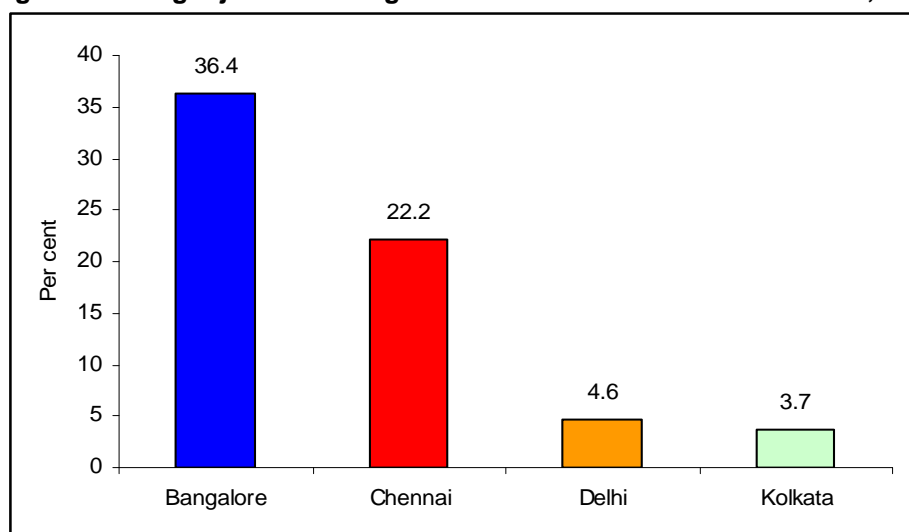
**Note:**

- MSWs = Male sex workers
- FSWs = Female sex workers
- SSWs = Street-based sex workers

Another example in Asia that has same pattern of a well-established HIV epidemic among female sex workers who also are drug injectors is Manipur State in northeastern India. In a place where the HIV epidemic is driven by injecting drug use, it is not surprising to learn that around 20 per cent of female sex workers reported injecting drugs, according to surveillance in five Indian states in 2001.<sup>120</sup>

Beside the combination between heterosexual sex and injecting drug use, in some other parts of region we also observe the phenomenon of drug injecting among men who have sex with men. In 2002, the National AIDS Control Organization of India initiated a BSS study among MSM in five cities (Bangalore, Chennai, Delhi, Kolkata and Mumbai) and found that a high proportion of MSM inject drugs. In Bangalore, 36.4 per cent of MSM reported drug injection. This figure was 22 per cent in Chennai. The overall prevalence of drug injection among MSM in India was around 12 per cent.<sup>121</sup> Obviously, MSM have sex with other men and women, and they themselves are injecting drugs. The threat from these multiple risk behaviours ("3 in 1") becomes more and more dangerous as the population susceptible to HIV transmission becomes larger.

**Figure 28: Drug injection among men who have sex with men in India, 2002**



(Source: National AIDS Control Organization (NACO) – Ministry of Health and Family Welfare. National Baseline High Risk and Bridge Population Behavioural Surveillance Survey, 2002)

## Summary

This report provided an overview of the HIV epidemic in the Asia-Pacific region, including its diversity and complexity, as well as the key risk behaviours that currently drive it. Numerous efforts have been made since the first time the epidemic hit the region. The region has witnessed successes in Thailand, Cambodia and now part of Myanmar in curbing HIV prevalence. Three major lessons could be drawn as follows:

1. To address the specific behaviours which cause more infections and provide specific services to reduce the risks of these behaviours;
2. To enlarge the scale of access to information and services on HIV prevention; and
3. To ensure that social, political and security environment support the provision of appropriate HIV prevention services to most-at-risk populations.<sup>122</sup>

Overall, intervention programmes should be appropriately addressed to the target populations and with sufficient strength and coverage. More and more countries are now moving forward in providing care and treatment to those who are living with HIV and in need of antiretroviral therapy. However, care and treatment should go hand in hand with prevention. Understanding more about risk behaviours would help in developing, maintaining and expanding comprehensive intervention programmes in more efficient and effective manner.

**APPENDIX A**  
**Size estimation and HIV prevalence of Injecting Drug Users in Asia and the Pacific region**

Country	Estimate of population size			HIV prevalence among IDU (per cent)		
	Low	High	Mid	Low	High	Mid
Afghanistan <sup>1</sup>	23,000	45,000	34,000			0.24
Bangladesh <sup>2</sup>	20,000	40,000				4.9
Bhutan	NA					NA
Brunei <sup>3</sup>	3,000	4,000	3,000			1.42
Cambodia <sup>4</sup>			1,750			0.026
China <sup>5</sup>			3,500,000	6	8	
Fiji <sup>6</sup>	100	200	100			0.02
Hong Kong SAR <sup>7</sup>			13,000	0.2	0.6	
India <sup>8</sup>			96,463			24.0
Indonesia <sup>9</sup>			200,000			41.09
Korea DRP						NA
Lao PDR <sup>10</sup>	5,000	11,000	8,000			0.28
Malaysia <sup>11</sup>	133,000	255,000		13.3	25.6	
Maldives <sup>12</sup>			8,000			
Mongolia <sup>13</sup>	10	100	100			0.004
Myanmar <sup>14</sup>	90,000	300,000	195,000			34.4
Nepal <sup>15</sup>	16,500	23,200				70
Pakistan <sup>16</sup>	54,000	870,000	462,000	0.5	26	
Philippines <sup>17</sup>	16,000	30,500		0.10	2.90	
Papua New Guinea <sup>18</sup>	5,000	10,000	8,000			0.26
Singapore <sup>19</sup>	10,000	20,000	15,000			0.48
Sri Lanka <sup>20</sup>	18,000	38,000	28,000			0.22
Thailand <sup>21</sup>			38,380			43.07
Timore Leste <sup>22</sup>	90	120	110			0.02
Vietnam <sup>23</sup>	112,000	215,000	126,000	19.1	54.5	23.13

<sup>1</sup>. As of 2004. (Source: Aceijas C., Stimson G. V., Hickman M. and Rhodes T., on behalf of the United Nations Reference Group on HIV/AIDS Prevention and Care among IDU in Developing and Transitional Countries. Global overview of injecting drug use and HIV infection among injecting drug users. JAIDS 2004;18:2295–2303)

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<sup>4</sup>. Source: \_Consensus estimates of the number of problem drug users in Cambodia, 2004.

<sup>5</sup>. Source: National Center for AIDS/STDs Control and Prevention Chinese Center for Disease Control and Prevention, 2006.

<sup>6</sup>. As of 2004. (Source: Aceijas C., Stimson G. V., Hickman M. and Rhodes T., on behalf of the United Nations Reference Group on HIV/AIDS Prevention and Care among IDU in Developing and Transitional Countries. Global overview of injecting drug use and HIV infection among injecting drug users. JAIDS 2004;18:2295–2303)

<sup>7</sup>. Source: Working Group on HIV Prevention among Injecting Drug Users in Hong Kong, Community Forum on AIDS, Hong Kong Advisory Council on AIDS. Report of community assessment and evaluation on HIV prevention among injecting drug users in Hong Kong 2005. September 2006.

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<sup>13</sup>. As of 2004. Source: Aceijas C., Stimson G. V., Hickman M. and Rhodes T., on behalf of the United Nations Reference Group on HIV/AIDS Prevention and Care among IDU in Developing and Transitional Countries. Global overview of injecting drug use and HIV infection among injecting drug users. JAIDS 2004;18:2295–2303.

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- HIV prevalence as of 2005. Source: Ministry of Health, Union of Myanmar, 2006)
- <sup>15</sup>. Source: National Center for AIDS and STD Control – Family Health International, 2005.
- <sup>16</sup>. Size estimation as of 2004. (Source: Aceijas C., Stimson G. V., Hickman M. and Rhodes T., on behalf of the United Nations Reference Group on HIV/AIDS Prevention and Care among IDU in Developing and Transitional Countries. Global overview of injecting drug use and HIV infection among injecting drug users. JAIDS 2004;**18**:2295–2303)
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- (Source: + Zindagi N., et al. Baseline study on HIV and STIs risk among IDUs in Lahore, Sargodha, Faisalabad and Sialkot, June-July 2005.
- + Pilot study conducted by the HIV/AIDS surveillance project, March 2005)
- <sup>17</sup>. Source: Department of Health, Philippines – WHO. Consensus report on HIV and AIDS epidemiology 2005.
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- <sup>19</sup>. Ibid.
- <sup>20</sup>. Ibid.
- <sup>21</sup>. Size estimation as of 2005. (Source: Brown T and Thailand A2 Team. Preliminary results of HIV/AIDS projection 2005-2025. Presentation at the Integrated Analysis and Advocacy-HIV/AIDS Projection Meeting, Ministry of Public Health. December 9, 2006.
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- <sup>23</sup>. Size estimation as of 2004. (Source: Family Health International. Population size estimates. FHI Country Office, Vietnam. 2004)
- HIV prevalence as of 2006. (Source: Vietnam Administration for AIDS Control (VAAC), Ministry of Health of Vietnam. 2007)

## APPENDIX B

### Size estimation and HIV prevalence of Female Sex Workers of in Asia and the Pacific region

Country	Estimate of population size			HIV prevalence among FSW (per cent)		
	Low	High	Mid	Low	High	Mid
Bangladesh <sup>1</sup>	54,600	90,000		1.0	2.0	
Cambodia <sup>2</sup>			19,700	11.7	20.8	
China <sup>3</sup>			10,000,000			3.4
Hong Kong SAR <sup>4</sup>	20,000	100,000				0.1
India <sup>5</sup>			229,058	21.6	52.3	
Indonesia <sup>6</sup>			224,000			4.01
Lao PDR <sup>7</sup>				0.9	1.1	
Malaysia <sup>8</sup>	40,000	60,000		5.1	7.6	
Mongolia <sup>9</sup>			18,900			
Myanmar <sup>10</sup>						30
Nepal <sup>11</sup>	25,400	34,100				20
Pakistan <sup>12</sup>				0.72	0.77	
Philippines <sup>13</sup>	112,354	175,553		0.06	0.34	
Papua New Guinea <sup>14</sup>				3.5	18	
Singapore <sup>15</sup>				0.3	1.8	
Sri Lanka <sup>16</sup>			30,000			
Thailand <sup>17</sup>			70,000	3.34	9.0	
Timore Leste <sup>18</sup>						2.0
Vietnam <sup>19</sup>	29,000	87,000	68,000	8.4	33.9	4.2

<sup>1</sup>. Source: National AIDS/STD Program, Ministry of Health and Family Welfare, 2005.

<sup>2</sup>. Source: \_Consensus estimates of the number of problem drug users in Cambodia, 2004.

<sup>3</sup>. HIV prevalence as of 2003. (Source: National Center for AIDS/STDs Control and Prevention Chinese Center for Disease Control and Prevention, 2006)

- <sup>4</sup>. Source: Working Group on HIV Prevention for Commercial Sex Workers and their Clients, Community Forum on AIDS, Hong Kong Advisory Council on AIDS. Report of community assessment and evaluation of HIV prevention for commercial sex workers and their clients in Hong Kong 2005. September 2006)
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  - Pandu Riono-Family Health International. Pemodelan Matematik Tren Epidemi HIV-AIDS Indonesia Sampai 2020. 2006.
  - <sup>7</sup>. No data on size estimation. HIV prevalence as of 2001. (Source: FHI. HIV Surveillance Survey and Sexually Transmitted Infection Periodic Prevalence Survey, Lao People's Democratic Republic, 2001)
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  - <sup>11</sup>. As of 2005. (Source: National Center for AIDS and STD Control – Family Health International, 2005)
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  - HIV prevalence: Sentinel surveillance data. HIV prevalence among Indirect sex worker is of 3.34% and among direct sex workers is of 9.00% by end of 2005. (Source: Thai Ministry of Public Health. Results from Sentinel surveillance 1989-2005)
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  - <sup>19</sup>. Size estimation as of 2004. (Source: Family Health International. Population size estimates. FHI Country Office, Vietnam. 2004)
- HIV prevalence as of 2006. Mid HIV prevalence is the national prevalence (4.2%) where as the lowest prevalence 8.4% in Hai Phong and the highest prevalence 33.9% in Can Tho. (Source: Ministry of Health, Vietnam. National Sentinel Surveillance Report. 2007)

**APPENDIX C**  
**Size estimation and HIV prevalence of Men who have sex with Men in Asia and the Pacific region**

Country	Estimate of population size			HIV prevalence among IDU (per cent)		
	Low	High	Mid	Low	High	Mid
Bangladesh <sup>1</sup>	50,000	165,000				
Cambodia <sup>2</sup>						14.4
China <sup>3</sup>	5,000,000	10,000,000		1.0	2.0	
Hong Kong SAR <sup>4</sup>			34,000			2.3
India <sup>5</sup>			89,967	17	68	
Indonesia <sup>6</sup>			795,000	1.2	22	
Malaysia <sup>7</sup>	61,000	184,000		0.8	2.4	
Nepal <sup>8</sup>	64,000	193,000				
Pakistan <sup>9</sup>				2.0	4.0	
Philippines <sup>10</sup>	379,799	804,280	0.00	0.39		
Thailand <sup>11</sup>			104,500	6.67	7.33	
Vietnam <sup>12</sup>				5.3	9.4	

<sup>1</sup>. As of 2005. This includes male sex workers and Hijra. (Source: National AIDS/STD Program, Ministry of Health and Family Welfare, 2005)

<sup>2</sup>. Data from Phnom Penh only, as of 2000. (Source: Family Health International. Sexual behaviour, STIs and HIV among men who have sex with men in Phnom Penh 2000. October 2002)

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<sup>5</sup>. Size estimation as of 2005. (Source: - NACO-Ministry of Health and Family Welfare. UNGASS India Report, 2005.

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<sup>6</sup>. Size estimation as of 2006 among whom 28,000 were transgender (Source: - Komisi Penanggulangan AIDS. Laporan Nasional: Kegiatan Estimasi Populasi Dewasa Rawan Terinfeksi HIV Tahun 2006. 2006

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HIV prevalence as of 2005 of which HIV prevalence among MSM was 1.2% and among transgender was 22%. The HIV prevalence among MSW was 6%. (Source: Ministry of Health, Indonesia. Results from the Behavioural Surveillance Survey (BSS) in Indonesia 2004-2005. 2005)

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<sup>8</sup>. Source: National Center for AIDS and STD Control – Family Health International, 2005.

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<sup>11</sup>. Size estimation includes 10,000 MSWs.

- HIV prevalence: 6.67% among MSWs and 7.33% among MSM.

(Source: Estimated size in A2 project. Assumption from the AEM modeling in 2006)

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## End notes

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- <sup>29</sup> The three “social evils” being addressed are drug use, sex work and crime. In order to reduce drug use and sex work, additional rehabilitation centres were built in and around the City. As of April 2005, there were 22 centres: 20 for IDUs and two for FSWs<sup>29</sup>. This presents a major difficulty in interpreting surveillance trends. A surveillance system is designed to measure trends or characteristics of behaviour or infection and disease prevalence in populations over time. For Ho Chi Minh City we wish to follow IDUs and FSWs and other groups to whom government staff have been given unlimited access. However, by the mere fact that the people are now housed in centres where their behaviour has been altered, and the likelihood of being selected for entrance to the centres was non-random, interpretation of the results from such centres over time becomes fraught with misleading trends. In the absence of hard, reliable community-based data, much of the discussion below contains conjecture. However, that conjecture is informed by evidence from other locations and the inclusion and exclusion of options is based on scientific probability and plausibility. In Ho Chi Minh City, most of surveillance data comes from rehabilitation centres. Because concurrent studies of the estimated 20 per cent of IDUs and 85 per cent of FSWs remaining in the community have not been conducted, it is difficult to evaluate current risk in the community with any precision. It should also be recognized that there may be external effects of the Three Reductions policy in the sentinel surveillance measurements in groups other than FSWs and IDUs. Membership in these groups does not preclude membership in other groups for the individual or for their regular sexual partners. For example, if the ANC sentinel site serves an area where many high-risk groups live, then it might be expected that removal of many of the high-risk young women, or their male partners, would have an impact on the number of HIV infected women attending that clinic for maternity services in subsequent years. The same is true for STI patients, blood donors and military recruits. One of the primary goals of HIV surveillance should be to provide a true picture of the epidemic in the group under study in the area for which the activity aims to be representative in the period of study. In the case of Ho Chi Minh City, however, it is unclear what constitutes a representative sample of IDUs when 80 per cent of that population is believed to be resident in rehabilitation centres. At the time of entry into the centre, were they at equal risk as those 20 per cent who remain in the community? This is important, as the vast majority of the data to date comes from the rehabilitation centres, and without this information interpretation of ongoing risk in the community may contain errors.
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