PREFACE

HIV epidemic has been alarmingly threatening the life and development in Cambodia. The first HIV positive case was reported to Ministry of Health in Cambodia in 1991. Until 1993, the first AIDS case was reported to Ministry of Health.

Since 1994, National AIDS program, Ministry of Health has started the HIV sentinel surveillance among target groups. By the end of March 2001, National Center for HIV/AIDS, Dermatology and STDs (former National AIDS Program) has finished its seven round of HIV sentinel surveillance.

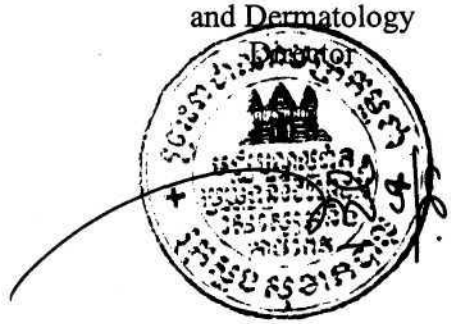
On the basis of available data, The National Center for HIV/AIDS, Dermatology and STDs, Ministry of Health estimated that by the end of 2000 Cambodia has approximately 169, 000 people living with HIV.

Two goals were identified for the sentinel surveillance system. First, was to gather and analyze additional HIV and AIDS epidemiological information. Second, was to elucidate the extent of the HIV epidemic in selected areas and among selected population groups. Surveillance data can make an important contribution to developing and implementing effective public health action, including advocacy, intervention design, and activity evaluation.

This document is developed to meet the need of National Institution and International Organization working on HIV/AIDS and having willingness to have an insight on HIV sentinel surveillance in 2000.

Finally on behalf of the National Center for HIV/AIDS, Dermatology and STDs, I greatly thank all those who contributed to the survey and without their help this study could not have been completed.

National Center for HIV/AIDS, STDs
and Dermatology
Director



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Executive Summary

The Ministry of Health in Cambodia invited external advisers, with the support of FHI/USAID and WHO, to Phnom Penh in April 2001 to work with NCHADS on the analysis and interpretation of the 2000 round of HIV sentinel surveillance (HSS).

The methodology for selection of study sites, members of sentinel groups etc. and the data collection and blood specimen procedures were the same as for the 1999 HIV Sentinel Surveillance (HSS) except that all clusters were numbered so that they could be classified as provincial capital/remaining area for the analysis. The specific subgroups of indirect sex workers were also identified to permit sub-grouping in analysis.

The analyses indicated that the prevalence of HIV infection had declined across all but one of the many groups surveyed, and that methodological biases were unlikely to be responsible. The decline was likely due to a combination of increased deaths in people with HIV infection and a slowing of the rate of newly infected people, probably due, in part, to reductions in risk behavior.

Careful examination of the available HIV and behavioral surveillance data was undertaken to determine a consistent approach for estimating the number of people living with HIV in Cambodia.

- The number of women (15-19 years) living with HIV was calculated by multiplying the national crude prevalence among antenatal clinic women by the number of women in this age range for each year between 1997 and 2000. Population growth was accounted for in these estimates. The result was an estimate of 72,000 adult women living with HIV in 2000.

- The number of men (15-49 years) living with HIV was calculated as the product of the prevalence among men, estimated as the ANC prevalence times a male-to-female ratio of 1.5, and the number of men in the 15-49 year age range. The result was an estimate of 97,000 adult men living with HIV in 2000.

- Using the estimates the number of adults (15-49 years) living with HIV in Cambodia has fallen steadily from 210,000 in 1997 to 169,000 in 2000. This decline most likely results because each year more people are dying of AIDS than are becoming newly infected.

The proportion of Cambodians with HIV infection declined in 2000 compared to the previous two years. The decline was observed in all the sentinel groups except beer promotion girls in whom the prevalence remained steady. The decline was also observed in the general population and appears to have declined most among 15-19 year olds. Nonetheless, the national prevalence of HIV infected individuals remains the highest of any country in Asia. The number of reported AIDS cases also rose sharply indicating an increasing demand for AIDS care and treatment.

Although the data indicates some success in prevention efforts to increase condom use, 25% of men engaging in commercial sex still do not always use condoms. Vigorous efforts, including continued funding assistance and extension of the intervention program nationwide are needed to sustain and further accelerate the decline of HIV infections.

The following recommendations were offered for consideration in the planning of the next round of HSS:

1. After separate analysis, an integrated analysis of both HSS and behavioral surveillance surveys (BSS) data needs to be conducted followed by dissemination.

2. The sentinel groups used in 2000 should be retained for the 2001 survey with the exception of TB cases and hospital in-patients. These two groups should not be included in future HSS.

3. Based on the countries socio-economic development,, the pattern of high risk behavior could be affecting some new groups such as migrant workers and young people. Therefore ad hoc behavioral and serological surveys in female factory workers and construction personnel as well as with younger age groups should be done to assess HIV prevalence in those groups, as well as with young people, to determine if they merit future inclusion as sentinel groups.

4. NCHADS should work with the two laboratories involved in the 2000 HSS to optimize the sensitivity of serological testing in the survey and agree on the appropriate quality control procedures to be followed.

5. Analytical epidemiological studies and modeling should be applied to the HSS and BSS data to provide further insights in the dynamics of HIV transmission in Cambodia including for husband/wife and mother/child transmission. .

6. AIDS case reports should be reported and analyzed by age, sex, transmission mode, and presenting diagnosis.

THE 2000 HIV SENTINEL SURVEILLANCE REPORT

Introduction

Human immunodeficiency virus (HIV) has been spreading steadily in the Kingdom of Cambodia. The first HIV positive case was reported to the National Blood Transfusion Center in Phnom Penh in 1991. At the end of 2000 the number of adults aged 15-49 years infected with HIV in Cambodia was estimated to be about 170,000.

In 1992, the National AIDS Program, with support from the World Health Organization (WHO), conducted an unlinked, anonymous sero-prevalence survey of selected risk groups in Phnom Penh. The proportion of commercial sex workers (DCSW) who tested positive for HIV antibodies was 9.2% and the proportion of sexually transmitted disease (STD) patients who tested positive was 4.2%. In 1994 the Cambodian National AIDS Program decided to initiate an active annual HIV/AIDS surveillance program with the support of WHO. Two goals were identified for the HIV sero-sentinel surveillance program. The first was to gather and analyze additional HIV and AIDS epidemiological information. The second was to elucidate the extent of the HIV epidemic in selected areas and among selected population groups.

The HSS rounds of surveillance over the years have included the following 11 target groups: 1) direct sex workers, 2) beer promotion girls, 3) freelance sex workers, 4) police, 5) women attending antenatal clinics, 6) tuberculosis patients, 7) hospital in-patients, 8) community males and females, 9) deminers, 10) military, and 11) military police. However, different groups have been included in different years and not every group was done in every province, usually because there were not enough individuals in the target population and because of limited resources.

ANC women were not included in 1998 when this group was temporarily replaced by married women of reproductive age. ANC are the main source of data used to construct the national estimated number of infected women of reproductive age, and, therefore, were re-instituted in the 1999 and 2000 HSS. Hospital patients were done in only 3 provinces. The household HIV prevalence survey in 1999 was done on a pilot basis in five provinces only.

Consensus workshops on the HIV/AIDS situation were held in Cambodia in 1999 and 2000. The workshops were held during the visit of several consultants to assess the data to date and to make recommendations for the conduct of the sentinel surveillance program for the coming 3-5 years. The workshop was attended by the staff of the National AIDS Program, provincial health personnel responsible for implementing sentinel surveillance, and representatives of concerned UN agencies, bilateral donors, and non-governmental organizations. At the end of the consensus workshop in 1999 a mid-term plan entitled "Midterm National Strategy for Surveillance of HIV/AIDS and STDs and Related Behavior - Midterm Plan 1999-2001" was finalized and has been used since.

Objectives of the 2000 HIV Sentinel Surveillance

1. To report the current prevalence of HIV infection in selected sentinel population groups by province in 2000.

2. To report the prevalence of HIV infection in selected young populations (female sex workers and police) as a surrogate for incidence.

3. To estimate the number of people living with HIV infection in 2000, and the national prevalence among adults 15-49 years in recent years based on data available in 2000 and taking into consideration newly available information and past experience.

4. To understand the dynamics of the epidemic so as to guide future prevention and care programming.

5. To evaluate the impact of current interventions and to inform future planning of prevention and care efforts.

Methodology of the HIV Sero-Sentinel Surveillance

The 2000 round of the HSS is the seventh in a series of annual surveys that has taken place in Cambodia, beginning in 1994. The surveys have been undertaken by the Cambodian Ministry of Health, through the National Center for HIV/AIDS, Dermatology and STDs (NCHADS) and supported financially and technically in various years by WHO USAID (through Family Health International), UNICEF, French Cooperation and the Cambodian Disease Control and Development Project, Ministry of Health.

Survey design

A cross-sectional design was used to obtain repeat prevalence measures to determine HIV trends. Blood samples were drawn in an anonymous fashion, specifically for the purpose of testing for HIV. Subjects were informed of the content of the survey, and oral consent was obtained from each subject prior to drawing blood. Sentinel surveillance samples were stripped of identifiers so that the result could not be traced back to an individual. Study sites and subjects were randomly selected using probability methods wherever possible.

Sentinel groups:

Six sentinel groups were selected:

1. Female direct commercial sex workers (DCSW)
2. Female Indirect commercial sex workers (IDCSW including beer promotion girls, bar women and women working in karaoke lounges and massage parlors).
3. Male police
4. Pregnant women attending antenatal clinics (ANC women)
5. Tuberculosis patients
6. Hospital in-patients (in three provinces only)

In 1999, beer promotion girls were sampled as a separate surveillance group from freelance sex workers, who were defined as women working in bars and karaoke lounges. These groups were separated in 1999 in order to determine whether there were any differences between the groups in terms of their HIV prevalence. It was also thought that there might be some overlap between beer promotion girls and freelance sex workers. These subclassifications were included in 2000 permitting group and/or subgrouping of the data.

Sentinel provinces and sentinel sites:

For DCSW, IDCSW and Police, twenty-one provinces were included in the surveillance. These were: Banteay Meancheay, Battambang, Kampong Cham, Kampong Chhnang, Kampong Speu, Kampong Thorn, Kampot, Kandal, Koh Kong, Kratie, Pailin, Phnom Penh, Preah Vihear, Prey Veng, Pursat, Rattanakiri, Siem Reap,Sihanouk ville, Steung Treng, Svay Rieng, Takeo. The sampling frames for all three of these groups included both provincial capitals and remaining districts in the whole province, although for DCSW and IDCSW, most of the sites where the women were accessible were in urban areas. For all of those provinces (with the exception of Battambang), the sampling frame for 2000 covered both provincial capitals and remaining districts.

Although inclusion of the whole province was intentional, this change made the data from 1999 inconsistent with previous years. The decision to include the whole province was made in the interest of obtaining more representative surveillance data. However, the fact that cluster numbers were not

recorded in the 1999 data meant that it was not possible to separate the urban data from the data of remaining districts, which would have allowed the urban data to be compared to the previous rounds. This problem was rectified in the 2000 surveillance by keeping track of which clusters were urban, and which were from remaining districts, so that the data could be analyzed separately. One difficulty that presented itself in 1999 was the apparent hardship of reaching some of the sites in more remote areas of the provinces. In 2000 this problem was dealt with by excluding those districts which were inaccessible.

For the group of hospital in-patients, the same three provinces as in the 1999 surveillance were selected to participate in the survey: Battambang, Kampong Cham and Phnom Penh.

In sentinel provinces, DCSW, IDCSW, and police were recruited from randomly selected sites while ANC women, TB patients and hospital in-patients were recruited from purposively selected sentinel sites.

Sampling strategy for HSS

Direct Commercial Sex Workers

In provinces where the total number of direct commercial sex workers did not exceed the required sample size of 150, the provincial teams were asked to sample *all* of the direct sex workers in the province.

In provinces where the estimated number of sex workers was significantly higher than 150 (e.g. 200 or more), cluster sampling was done. All sites were listed prior to conducting the survey. It was not required that a measure of size (number of women working in the brothel) be obtained before the survey. The Provincial Surveillance Team randomly selected a sample of 30 brothels (with equal probability), and then visited each brothel. On the day the brothel was visited by the surveillance team. 5 women were selected and invited to participate in the survey. Another randomly selected woman from the site replaced each woman who refused participation. After obtaining informed consent, the field teams drew blood and completed the specimen information sheet.

Indirect Commercial Sex Workers

Indirect commercial sex workers were defined as women working as beer promotion girls or as bar, karaoke or massage girls. They were sampled from a list of all beer companies that hire beer promotion girls, as well as bars, karaoke lounges and massage houses. Any existing lists were validated and updated during the mapping.

The sample size for this group was planned to be 150 in provinces where the prevalence was greater than 5% last year. In those provinces where it was estimated that the total number of indirect sex workers was less than 150, a "take-all" sampling approach was used. In the provinces where the number of sex workers was larger than 150 (Phnom Penh, Battambang, Siem Reap and Kampong Cham), the national team assisted the provincial team in selecting a random sample. This was achieved by using the list of beer companies, bars, karaoke lounges and massage houses to select a random sample of 20 sites, and then selecting a random sample of 10 women from each site. Although only 150 women were required, extra clusters were chosen in the event that it was not possible to get 10 women from each cluster. Additional randomly selected eligible respondents in the cluster replaced women who refused to participate.

After randomly selecting women and obtaining informed consent, a blood sample was taken and the specimen information sheet was completed at each site. A cluster information sheet was also completed for each beer company included in the sample, detailing the name and geographic location of the company, its cluster number, the total number of women who worked for the company as beer promoters, the number of women who appeared on the day the blood collection was done, the number

of women who were invited to participate in the survey, the number of women who refused and the number of specimens obtained from that beer company.

For karaoke lounges and massage houses, the team visited the selected sites during the day and selected a random sample of ten women, following the same procedure and completing all the same forms as at the beer companies.

For bars, the procedure was slightly different. Since the women working at these sites are not "fixed", but different ones may be working on different days of the week, and in different establishments, for each bar that was selected in the sample, the team randomly chose which night of the week to visit. Each bar was visited only once. On the chosen night, the team arrived at the site for one hour beginning at 8:00 p.m. and ending at 9:00 p.m. and randomly selected 10 women to give blood. The same procedure of obtaining informed consent, completing the specimen information sheets and the cluster information sheets for each bar was followed.

Police

For police, the sampling frame consisted of a list of bureau offices within districts, obtained from Provincial Surveillance Teams, under the supervision of the Provincial AIDS Manager. The bureau offices include all non-military police including immigration, anti-drug trafficking, anti-crime, logistics and justice police. Districts that were inaccessible or accessible only with great difficulty were excluded from the sampling frame. It was the responsibility of the Provincial AIDS Manager to document which districts were excluded from the sampling frame.

For provinces where the sample size was 300 (HIV prevalence < 5%), 30 clusters were selected at random. For each selected cluster (bureau office), the provincial team randomly selected 10 police. The same procedure as for other groups was followed. For provinces where the sample size was 150 (HIV prevalence > 5%), 15 clusters were selected at random.

ANC women

The sites to be used were the same sites as those used in HSS 1999. Only pregnant women who were present at sentinel sites for prenatal visits were eligible for the HSS sample. The women were recruited consecutively meaning that women were recruited into the sample in the order in which they appeared at the sentinel sites. No woman was included in the sample more than once.

For each woman recruited into the sample, clinic staff were responsible for obtaining informed consent before drawing blood, and also for recording the relevant information on age, education, nationality, town of origin, and date when the sample is collected.

TB **Patients**

Staff of the selected TB centers underwent training by the Provincial AIDS Manager. TB patients were recruited among newly diagnosed TB patients from both provincial referral centers and local health centers capable of diagnosing sputum smears. Staff from the sentinel sites were responsible for keeping track of newly diagnosed patients, making sure they were recruited into the sample in consecutive order and that no one was recruited into the sample more than once.

Hospital In-Patients

The same hospitals from Kampang Cham, Phnom Penh and Battambang that were used in the 1999 surveillance were chosen again for the 2000 surveillance. After receiving training, hospital staff were requested to sample 100-150 patients from the medical wards and 250 patients from the surgical wards for HIV testing. Sampling was consecutive, in the order that the patients were admitted to the hospital. Informed consent was obtained from the patients before drawing blood.

Training of Personnel

Training for HSS 2000 was conducted at several levels.

1. There was a pre-surveillance training workshop for three days in Phnom Penh just before the start-up of data collection.
2. In each province, the Provincial AIDS Manager was responsible for establishing a Provincial Surveillance Team, and conducting training for that team. The Provincial Surveillance Team had primary responsibility for conducting the survey among DCSW, IDCSW and Police. Their training covered the topics of mapping, eligibility criteria, sampling, informed consent, specimen collection, processing and transport of specimens, and record keeping, including how to complete the specimen information sheet and the cluster information sheet.
3. Separate training was conducted for sentinel site staff of ANC clinics and TB clinics. This training covered eligibility criteria, the consecutive sampling technique for sentinel sites, informed consent, and the procedures for specimen collection and handling. It also covered completion of the specimen information sheet.
4. A training session was held for hospital staff responsible for surveillance activities in the three provinces where hospital in-patients were included as a sentinel group.

Specimen Collection and Testing:

The WHO recommended protocol for HIV surveillance was adhered to. For sentinel groups with high HIV prevalence (10% or greater) the particle agglutination assay (Serodia HIV 1 / Fujirebio-Japan) was used to screen all samples. Samples that were positive on the first test were considered as HIV-positive. Those that were negative on the first test were considered as HIV-negative. For sentinel groups with lower HIV prevalence (less than 10%), a particle agglutination assay was performed, using the same particle agglutination assay (Serodia HIV 1 / 2). Samples that were positive on the first test were confirmed by enzyme-linked immunosorbent assay (Genelavia mixt HIV 1/2, Sanofi Pasteur-France). The testing was conducted in the central laboratory at the Preah Bat Norodom Sihanouk Hospital in Phnom Penh beginning about one month after the start of the survey. During the process, quality control of the laboratory was strictly maintained in collaboration with National Institute of Public Health, Cambodia.

Storage of Sera and Transport of Specimens to the Laboratory at Sihanouk Hospital

Five milliliters of blood was drawn into a blood tube without anti-coagulated substance from each subject for HIV testing using universal precautions (disposable syringes, gloves, cotton, alcohol, bleach, etc.). After separation of cells, 2 ml of sera was transferred to a cryotube for storage and testing. All the specimens were accumulated, processed, and temporarily stored at the district level until the required sample size was reached - if a cold chain was available. Otherwise, specimens had to be stored in coolers and sent to the provincial laboratory within 24 hours for processing. The specimens were picked up by the supervision team or were sent to the national laboratory to be rechecked and stored for testing. The same code number was marked on the blood tube, cryotube and the data sheet.

Data management and analysis

Data were entered into a computerised database using Epi-Info, a software program with which the NCHADS staff is familiar. They were responsible for assigning unique cluster numbers to each cluster in each province, and also calculating the correct sampling weight for each cluster within each province. Each individual computer record included the appropriate cluster number and sampling weight, so that cluster analysis and weighted analysis could be performed if necessary.

Time frame for HSS 2000

Data collection was completed within the three-month time frame between November, 2000 and January 2001. Data collection for DCSW and IDCSW took approximately 2 weeks in each province. For police, the data collection took approximately one month, due to the need to travel within the province. The recruitment period for ANC, TB and hospital in-patients was three months.

Quality Control Procedures

1. To ensure the quality of the laboratory tests and procedures, a subset of specimens was sent to the National Institute of Public Health laboratory (NIPH) in Cambodia for quality control testing according to the following procedure:

    - For groups where the prevalence of HIV was less than 10% (i.e. TB patients, Police and ANC), all samples that tested positive for HIV at the Sihanouk Hospital laboratory, plus 10% of all negative samples were sent to the NIPH lab. All specimens were returned to NCHADS. The Sihanouk Hospital Laboratory provided the study identification code for the positive samples to NCHADS. NCHADS then generated a random list of study identification codes from among the remaining negative samples, and then sent all the positive specimens, plus the selected negative samples to the reference lab for retesting. The study identification code corresponded to the "assigned" cryotube numbers.

    - For groups where the prevalence of HIV was expected to be greater than 10%, (i.e. DCSW, IDCSW and Hospital In-Patients), NCHADS generated a random list of study identification codes for 10% of all specimens. They then sent the chosen specimens to the reference lab for restesting.

    - The performance of the Sihanouk Hospital laboratory was judged by NCHADS based on the degree to which their results were the same as those of the reference lab. Sihanouk hospital lab also used standard controls to verify the results of their testing

2. Those attending the pre-surveillance workshop in Phnom Penh were requested to conduct training sessions at the provincial level (as outlined in the section above on Training of Personnel) for the ANC and TB center staff, as well as for the Provincial Surveillance Teams. This training included sampling and data collection procedures for HSS, as well as proper completion of forms and proper storing of specimens.
3. When National Supervisory Teams visited the province, they conducted additional training for TB and ANC staff.
4. A schedule of supervisory visits by the national team was prepared ahead of time, and extra attention was focused on those provinces that had been particularly problematic in the past.

Estimation of Number of HIV Infections in Cambodia

Estimating the number of infections requires close examination of the available data sources and careful analysis of the changes in those data that occur from year to year. Each year, a careful analysis of all the data collected is undertaken and attempts are made to improve the estimation procedure. While a large amount of HIV data is collected in the HIV sentinel surveillance system, many of the sentinel groups are at higher risk of contracting HIV than the population in general and thus cannot be used for estimating the number of infections in the overall Cambodian population. Estimates for the population at large must be based on those sentinel populations that are more representative of the population as a whole.

For women, antenatal clinic attendees provide the closest approximation available to the prevalence of HIV among women of reproductive age. They, do however, differ from women at large because not all pregnant Cambodian women receive antenatal care at government clinics, because they are more

likely to be sexually active than the female population at large, and because their age distribution differs from the age distribution in the overall female population. Despite these differences, an examination of the prevalence data in 5 provinces from the 1999 household HIV testing with the corresponding prevalence from antenatal clinic attendees showed no consistent relationship between the ANC prevalence and the household values, which would be more representative of the overall population prevalence and could, therefore, be used to adjust the population estimates. In some provinces ANC was higher; in others the household survey value was higher. This variability results from the statistical imprecision created by the small sample sizes and low prevalence among antenatal clinic women. Therefore, in the absence of convincing evidence to the contrary, the prevalence among ANC women was used to approximate the prevalence in reproductive age women at large. The number of infected women between 15 and 49 years of age can then be calculated as the number of women in the 15 to 49 age range multiplied by the HIV prevalence among antenatal women.

In 1999, the approach involved using the ANC rates and populations at the provincial level. However direct application of this methodology to the data in 2000 produced extreme and unrealistic drops in the number of infections (a decline of almost 40,000 people living with HIV between 1999 and 2000). This number was too extreme to be epidemiologically plausible given the duration of the Cambodian epidemic. Further analysis revealed that the reduction resulted almost entirely from 2 large population provinces that had substantial drops in ANC prevalence among women. A closer examination of the provincial ANC rates and their change over time revealed that the statistical fluctuation in ANC rates at the provincial level is quite large from year to year - making provincial level estimates unstable. Applying the ANC prevalence at the national level produced more stable and plausible estimates over time. Thus, the total number of existing infections among Cambodian women (15-49 years of age) in 1997, 1999 and 2000 was calculated by multiplying the crude national ANC prevalence (3.2, 2.6 and 2.3 percent respectively) by the population of females 15-49 years old for each year. The population was assumed to grow at a constant rate determined from the 1998 adjusted census and the population projections for 2001 produced by the National Institute of Statistics. Because the 1998 surveillance sampled married women instead of ANC women, it could not be used directly for estimation of a comparable value. Instead the number of infections in 1998 was calculated by interpolating the surveillance data from 1997 and 1999.

For men, there are currently no groups in the sentinel system that can be considered representative of the male population at large. As a result, male infections were estimated in a manner similar to last year's approach - by taking the ANC prevalence and multiplying it by a male-to-female ratio to reflect the fact that men are more heavily infected with HIV in Cambodia than women. A fixed ratio of 1.5 was used for the calculation this year. This value was decided upon after close examination of the male and female data from the 1999 household survey and the male-to-female ratios in hospital in-patients, tuberculosis patients, and blood donors. This is a somewhat lower male-to-female ratio than is estimated in neighboring Thailand, and probably reflects differences in the transmission dynamics between the two countries. The number of male infections was then calculated as the male population in a given year multiplied by the ANC prevalence multiplied by the male-to-female ratio.

Methodology of Behavioural Surveillance Surveys

Between 1997 and 2000 NCHADS also conducted behavioral surveillance a series of repeat cross-sectional surveys conducted annually in occupational groups. The goal was to monitor high-risk sexual behaviors on a regular and systematic basis. The measures in the questionnaire focused on the main behaviors that put people at risk for HIV infection. Cambodia's BSS sentinel groups included police, military, mototaxi drivers, brothel-based direct female sex workers (DFSWs) and indirect female sex workers (IDFSWs) in five provincial capitals (Battambang, Sihanoukville, Kompong Cham, Phnom Penh and Siem Reap).

HSS data suggested that the Cambodian HIV epidemic had begun to shift to the general population, suggesting a need to measure the extent of high-risk behavior in the general population compared to the sentinel groups. This was especially an issue for BSS male sentinel groups because the assumption was that military and police were at higher risk than other urban men. Therefore, in 2000

the BSS was a household survey of adult males, rather than selected occupational groups, providing a comprehensive description of sexual behavior among men in Cambodia.

The 2000 household survey was conducted in the 5 provinces where BSS had been done annually. The sample covered urban and rural areas: each of the 5 provinces contained 1 urban district (the provincial capital of the 5 provinces) and 3 rural districts. It employed a multi-stage cluster sample of household men 15-49 years of age. The number of respondents for each group was determined based on the estimated level of key risk behaviors (the percent of always using condoms in commercial sex from the 1997 BSS data on working men/vocational students) and the degree of confidence required to detect a significant change in behavior over time in this population. Sample sizes were also estimated to be large enough to detect cross-sectional differences between sub-populations (i.e. rural men vs. urban men). Therefore, a sample size of 3.166 men was collected across the 5 provinces to produce a sample of 250 rural and 250 urban men per rural and urban areas in each province.

RESULTS

The results of the 2000 HIV sentinel surveillance are reported in Tables 1-30 and Figures 1-12. The national level HIV prevalence was lower than in 1998 and 1999 in all the sentinel groups except beer promotion girls. Cambodia is only one of a few developing countries to have been able to document such a decline.

Table 1 gives the list of sentinel sites and sentinel groups included in the sentinel surveillance since 1992. Surveillance was conducted in 21 of the 24 provinces. Sentinel surveillance was not conducted in Keb ville, Otdar Mean Chey, and Mondul Kiri because of the small populations in these three provinces and the difficult access to the remote, mountainous areas in two of the three provinces. The sentinel groups included in the 2000 HSS were direct commercial sex workers (DCSW), police, pregnant women attending antenatal clinics (ANC), newly diagnosed tuberculosis patients, hospital in-patients in both medical and surgery services (three provinces only) and indirect commercial sex workers (IDCSW). The indirect commercial sex workers included beer promotion girls, bar girls, karoake workers and masseuses and, thus, represented a much broader group than were included in the IDCSW category prior to 1999.

The refusal rates for direct commercial sex workers, indirect commercial sex workers and police in each of the provinces is given in Table 2. The proportion of participants refusing to participate ranged from a low of 0% in several groups to as high as 58% among police in Pailin. Generally higher refusal rates were observed among the police and indirect commercial sex workers.

Figure 1 presents the HIV prevalence among the sentinel groups. The prevalence was highest in the direct commercial sex workers (31.1%) and lowest among the pregnant women attending antenatal clinics (2.3%). The prevalence among indirect commercial sex workers (16.1%) was almost half that in the direct commercial sex workers. Police had a prevalence of 3.1%.

The prevalence of HIV in the sentinel groups in the 21 individual provinces is shown in Table 3. The prevalence of HIV among hospital in-patients was determined only in Battambang, Kampong Cham and Phnom Penh. The sample sizes achieved in the various sentinel groups in the individual provinces varied widely and underscores the unstable prevalence derived from them. Results were not obtained from Pailin for tuberculosis patients. The summary prevalence for each of the sentinel groups was not weighted by the relative size of the population of the province.

Tables 4-8 provide the HIV prevalence in each province by age group and provincial capital versus remaining districts for direct commercial sex workers, indirect commercial sex workers, police, pregnant women attending antenatal clinics and tuberculosis patients from 1994-2000.

Tables 9-29 provide the prevalence of HIV by age group, 95% confidence limit and refusal rate (2000 only) from 1992-2000 among the individual sentinel groups and blood donors. While the high prevalences of HIV among the DCSWs are relatively stable, the prevalence of HIV among the other

groups (in which the HIV prevalences are lower) fluctuate greatly due to the small sample sizes relative to the HIV prevalence level. Thus, it is difficult to evaluate the prevalences in these groups at the provincial level.

Figures 2-7 give the national trends in HIV prevalence for antenatal women, direct commercial sex workers (by age group), police in urban areas (by age group), beer promotion girls, tuberculosis patients and blood donors for the last three to four years. Trends among indirect commercial sex workers were determined only by beer promotion girls because they are the only subgroup for which data was consistently collected from 1998-2000. Only police in provincial capitals are included for the same reason. The data point for 1998 among the pregnant women attending antenatal clinics is interpolated because antenatal women were not included as a sentinel group in 1998. There was a downward trend in each of these groups except for the beer promotion girls who remained at essentially the same level. The lower prevalence of HIV among the tuberculosis patients in 2000 is difficult to explain as the proportion would be expected to increase as more HIV infected individuals progress to clinical AIDS and because tuberculosis is probably the most common opportunistic infection in Cambodia. It should be noted, however, that over the last several years there has been an expansion in the number of rural health centers, which have the capacity to diagnose tuberculosis. Thus, the mix of patients diagnosed at the provincial referral centers and at the rural health centers has changed. An increase in the proportion of milder cases, perhaps more likely to have be diagnosed at the rural health centers, would have decreased the observed prevalence of HIV among TB patients as patients with both HIV and tuberculosis are more likely to have advanced disease.

The results of the calculations to estimate prevalence for men, women and the entire adult population are given in Table 30 and Figure 8. They show a steady decline in the number of people living with HIV, from an estimated 210,000 in 1997 to 169,000 in 2000. This decline is believed to result from more people dying of AIDS than are becoming infected every year. While new infections do continue, prevention efforts have substantially reduced the number of new infections each year, dropping it below the number of people dying annually. Thus, the number of infections in the population at large is decreasing over time.

Although behavioral surveillance (BSS) was conducted separately from HIV sentinel surveillance it is useful to include some behavioral data from the 2000 behavioral surveillance among men in the general population and the earlier behavioral surveillance among the sentinel risk groups from 1997-1999. Figure 9 provides data on the use of condoms for the individual sentinel groups. It is clear that the proportion of men using condoms has risen dramatically from 1997 through 1999. Overall 13% of men have had sex with a direct female sex worker in the past year (19.4% urban vs. 10.9% rural). Figure 10 provides the data on the locale where men encountered the last sex worker they had sex with. It shows that more than 50% of men had sex with a female sex worker in a brothel, illustrating that men still go primarily to brothels for commercial sex. Although there is a wide range of places where men can find sex workers, not one venue predominates after brothels. Figure 11 presents the proportion of single and married men in the urban and rural areas who report having engaged in commercial sex in the past year. The urban proportions are higher for both married and single men, and the proportions are higher among single than married men. Nonetheless it important that 16.3% of married men in urban areas and 10% of married men in the rural areas report having engaged in commercial sex in the past year. Figure 12 provides evidence that reported condom use always with commercial sex workers is high in both the urban and rural areas, but married men report always using condoms less than single men do. Ten percent of rural men and 12.5% urban men report having had sex with both a commercial sex worker and with their sweethearts and/or wives. Thus, a high proportion of men in Cambodia are acting as a bridge between the commercial sex workers (a very high proportion of whom are infected) and their wives and/or sweethearts.

Only 12%of men report having been tested for HIV. Thus, it is clear that there is a need to make available and to promote more widespread testing for HIV.

DISCUSSION

The proportion of Cambodians with HIV infection is declining in all of the sentinel groups except beer promotion girls in which the proportion has remained stable. The estimated number of people with HIV in the general population of Cambodia is also declining, and appears to have declined most among 15-19 year olds. However, the national prevalence of HIV in Cambodia remain the highest of any country in Asia and the number of reported AIDS case is rising sharply.

Consistent use of condoms in commercial sex has risen in all groups including the general population of men. However many men remain at significant risk. Thirty percent of Cambodian men still do not use condoms during commercial sex. Only 12% of Cambodian men have ever been tested for HIV.

As Cambodia's epidemic progresses more people are dying from HIV/AIDS than are becoming infected, thus the overall number living with HIV is declining. This is because an increasing number of people who became infected in the early 1990s are now dying. However, the number of new HIV infections each year has dropped, particularly among young people, as prevention strategies take effect.

CONCLUSIONS

These data indicate a decline in HIV that could be explained by the success of prevention efforts to increase condom use. The number of people developing AIDS and dying continues to rise rapidly creating a rapidly increasing demand for AIDS care and treatment. For this reason, continued vigorous efforts, including continued funding and extension of prevention and care programs nationwide, are needed to accelerate the decline of HIV infections and provide for the needs of those living with HIV and AIDS.

PROGRAMMATIC IMPLICATIONS

There is an urgent need to continue prevention activities targeted to sex workers and their clients. Married men, in particular, need to be targeted for promotion of condom use during commercial sex. There is also a need to increase prevention activities targeted to the general population (e.g. husband/wife and mother/child transmission). Future estimates of the number of HIV infected persons in Cambodia need to account for HIV infected newborns.

The health care system in Cambodia needs to respond to the increasing demands for care and treatment for HIV/AIDS. Access to voluntary testing and counseling (without risk of disclosure) must be increased. Stigmatization of HIV infected people and the major risk groups remains a major barrier to effective HIV prevention and care and needs to be forcefully addressed.

RECOMMENDATIONS ON FUTURE OF SURVEILLANCE BY THE SURVEILLANCE WORKING GROUP (SWG)

The surveillance working group (external surveillance advisors and NCHADS staff) met on May 3, 2001 to discuss future plans for HIV surveillance. As the surveillance system in Cambodia improves over time, new data shed light on current and past trends of the epidemic, allowing for a more refined interpretation each year. However, since every country has it's own unique epidemic patterns, inevitably new questions arise, and new information is needed to improve the understanding of observed patterns. The surveillance system needs to be stable to monitor trends over time, yet it also needs to be adaptable to changing epidemic patterns. Because of this, the SWG looked at potential supportive research activities related to surveillance, that could help answer some of the outstanding questions. They outlined a series of recommendations taking into account information gaps that were identified during the process of making the estimates and preparing to do projections for the year 2000. The most important gaps, which influenced the recommendations, are outlined below:

- HIV prevalence of HIV among young people, both male and female age 15-24, and how this changes over time. (Prevalence among young people can serve as a proxy for HIV incidence, since they represent relatively new infections).

- The ratio of HIV infected males to females and how it has changed over time. (This information is critical for making national estimates, and there is not much data available to help make the determination)

- The changing nature of sex work. Is there a shift in the women who are selling sex or in the locations where sex is sold? (This information is needed to gauge whether there is more indirect sex work than before).

- The way men and women define sweethearts, and how it has changed since the last qualitative research was done in 1995. (This information is also needed to gauge possible changes in indirect sex works).

- The risk behaviors of other indirect sex workers (besides beer promoters) and their clients. (This information is needed to guide prevention programs and evaluate changes over time, if there are in fact more indirect sex workers, or new groups of indirect sex workers)

- Given the very short reported duration of sex work (approximately one year), what happens to sex workers after they stop selling sex? Do they marry and start families or continue to sell sex in other venues? (This information is needed to help determine why the male/female ratio appears to be so low. It is possible that many of the ANC women who are currently HIV positive were infected through selling sex). A corollary to this is the question of where female sex workers come from.

- Given rapidly changing social and socio-economic patterns, and patterns of mobility, are there new groups at risk of HIV? (An assessment of this is needed to so that the surveillance system does not overlook potential pockets of new infection).

The recommendations for future surveillance and related research are described below, taking into account the noted information gaps:

1. Recommended Sentinel Groups for HSS 2001

Timeframe

Planning to begin in August 2001
Data Collection: October-December, 2001

The consensus was that for HSS 2001, most of the same groups included in the 2000 surveillance should be kept, to allow for the continued monitoring of trends. However, it was thought that some new groups should be added to account for potential shifts in patterns of related high risk behavior and sex service (from direct to indirect) as well as new patterns of migration and mobility, related to socio-economic patterns. It was also suggested that some of the sentinel surveillance groups be dropped, since they were no longer providing useful information. The recommended groups for 2001 are:

HSS Sentinel Groups	Inclusion Criteria	Sample Size	Special considerations
ANC	Pregnant women age 15-49 in Provincial Capitals (PC) and remaining districts (RD) for all provinces	▪ 300 PC per province ▪ 300 RD per province *plus* over-sample of young age groups: ▪ 15-19: 50 PC per province ▪ 15-19: 50 RD per province ▪ 20-24: 50 PC per province ▪ 20-24: 50 RD per province	The survey should not exceed three months (Oct-Nov, 2001) even if the oversample targets are not achieved
Police	Keep as is	▪ 300 for provinces where most recent estimate of prevalence was 5% or less ▪ 100-150 for provinces where most recent estimate of prevalence was > 5%	
DSW	Keep as is	100-150 per province	Measure duration of sex work to help determine whether the prevalence data can be used as a proxy for incidence
Indirect sex workers	Keep combined sample of beer and karaoke girls only (drop massage and bar girls since they represented a small portion of the sample in 2000)	▪ 300 for provinces where most recent estimate of prevalence was 5% or less ▪ 100-150 for provinces where most recent estimate of prevalence was > 5%	Measure duration of sex work (do pretesting among sex workers to find out how to ask about this
Hospital In-patients	Drop		
TB Patients	Drop		

Note on TB patients. The percentage of TB cases that are co-infected with HIV is important to know. NCHADS and the National Tuberculosis Program, along with advisors, should meet to discuss the methodology for assessing HIV prevalence in people with tuberculosis. But the information is not currently useful for surveillance purposes, and should therefore not be part of the surveillance system.

2. Recommended sentinel groups for BSS V - 2001

Timeframe

Planning to begin in October 2001
Data Collection: November-December, 2001

The consensus was to skip the groups who were included in the 2000 STD prevalence survey (DCSW, Police, Military), because there is behavioral data for them in 2000. Therefore a suggestion is to repeat only mototaxi drivers and and beer promotion girls in BSS V and consider adding some new groups, potentially to include karaoke as a new indirect sex work group, and other groups potentially at risk because of shifting socio-economic factors and mobility. An assessment should be conducted to determine who these new groups should be (details are below).

BSS Sentinel Groups	Inclusion Criteria	Sample size needed to detect change of 10% plus design effect (x2)*	Special considerations
Mototaxi Drivers		- 292 x 2 = 584	117 per provincial capital (584/5)
Beer Girls		- 338 x 2 = 676	135 per provincal capital (676/5)
NEW GROUP Karaoke Girls	This group has been proposed so that other forms of indirect sex work are examined more closely	- 338 x 2 = 676	135 per provincal capital (676/5)

*A11 sample sizes were calculated to detect change of 10% from 1999 assuming two-sided test, alpha 0.05, power 80% with a design effect (x2).

**Sample sizes for Karaoke workers (assumed to be IDFSW) were calculated to be large enough to detect a difference in condom use during commercial sex from beer promoters (other EDFSWs) in 1999.

3 New HSS/BSS Sentinel Groups

There is concern that regional epicenters (such as Poipet and Koh Kong) as well other high risk groups, such as mobile/migrant populations are not being adequately addressed in the surveillance system. It is therefore proposed that exploratory qualitative research be undertaken to assess potential new groups for surveillance. This research should identify demographic, behavioral and biomedical factors, which are associated with, increased potential for exposure to HIV. The research should first examine secondary sources of migration information (census, DHS, etc.) and any other related research to help determine the extent and characteristics of mobile populations as well as geographic and time trends. Once a comprehensive list of potential populations has been compiled, a rough assessment of the risk situation in several potential communities should be conducted. This assessment should be drawn from a combination of key informant interviews, in-depth interviews with members of the community in question, focus group discussions, and observations. The purpose of the assessment will be to provide enough information to determine which groups should be added to the HSS/BSS system. Ideally this research should be conducted during the summer of 2001, so new groups can be included in the 2001 round of HSS and BSS. Some potential migrant/mobile populations that have been suggested already are male construction workers, and female factory workers. These are potential internal migrant groups. There may be other internal migrants, as well as external migrants that could be part of the assessment.

4. Research to support surveillance and address information gaps

In addition to HSS and BSS, the following research activities are proposed to supplement existing information and provide further insights into the dynamics of the epidemic.

- Conduct secondary analysis of past and present AIDS case reporting by age and sex to help determine the sex ratio, and ensure that the system provides this information in the future
- Assess the mode of transmission among people currently infected with HIV, identified through several sources including hospital patients, people tested at VCT and mother to child transmission sites, and through home-based care programs. Among other things, this research will help address the question of what happens to sex workers after they stop selling sex. Conduct secondary analysis of the BSS to look further into the question of where sex workers come from.
- Study discordant couples (presumably identified through MTCT studies) to explain more about the source of infection for women (i.e. were they former sex workers, or did they become infected from their husbands or regular partners), and also to determine the proportion of female positive/male negative couples.
- As maternal to child transmission programs come online, and testing for HIV among pregnant women becomes routine, set up reporting so the results are fed into sentinel surveillance. This will greatly reduce the difficulties due to statistical fluctuations resulting from low prevalence and small sample sizes in the current ANC samples, which will in turn help with producing more stable national estimates.
- Addition of questions to the BSS for both males and females, to look at occupation of sexual partners. This will help with understanding potential shifts in sex work, and give insight into whether there are new groups of females (such as factory workers) engaging in indirect sex work. Such research would also provide additional information on occupations of men who are most likely to visit sex workers.
- Undertake qualitative study to look at changes in sex work, including different types of women who work in sex and updated information about the definition of sweethearts, sex workers and regular clients.

Update research inventory on all HIV/AIDS related behavioral and biomedical research done by government institutions, local and international NGOs and other national and international research partners so that all available data can be drawn upon for helping with interpret of surveillance data, and planning for future surveillance needs.

5 Asian Epidemic Model

The Cambodian epidemic has evolved quickly - HIV prevalence rose rapidly in the early and mid-1990s but is now showing evidence of falling slowly in most populations. This is not often seen in developing countries. In most countries, prevalence rises to a high level and then settles into a fairly high and stable level. However, the Cambodian pattern is not unprecedented. Neighboring Thailand has followed a similar pattern of rapid epidemic growth, followed by slow prevalence decline in surveillance populations.

The trends in HIV prevalence observed in Thailand and Cambodia are NOT those of an HIV epidemic evolving naturally - they are instead the patterns of epidemics in which behavioral changes have significantly altered the epidemics' natural histories. Epidemics in which sex work dominates in the early phases, as in many places in Asia, where female sexual contacts outside of marriage tend to be very limited, are particularly sensitive to increases in condom use between sex workers and clients. In both Cambodia and Thailand, condom use in sex work rose rapidly in response to prevention efforts. This can be expected to produce rapid declines in the number of new infections over time.

Accordingly, these epidemics follow a very difference pattern of incidence than that provided in the model most commonly applied, EPIMODEL. The Surveillance Working Group examined various EPIMODEL fits to the Cambodian epidemic. However, all of them showed incidence peaking too early to match the HSS and BSS surveillance data, because the curves used in EPIMODEL do not account for the rapid decline in new infections produced by the increases in condom use in sex work.

To address this, a model will be applied which has been able to fit 10 years of epidemiological and behavioral data in Thailand: the Asian Epidemic Model (AEM). This model has been developed by East-West Center, Mahidol University and the University of the Philippines with support from USAID, and uses behavioral inputs to model HIV prevalence trends over time. The AEM will be applied to the time series of epidemiological and behavioral data in Cambodia resulting from careful analysis of the HSS and BSS data. The model contains 6 major population sub-groups: general population males and females, male clients of sex workers, direct and indirect sex workers, and injecting drug users (which will not be used in Cambodia). The size of each population and behavioral time trends (condom use, frequency of intercourse, etc.) will be set from analysis of existing behavioral studies in the country. The transmission parameters (e.g., HIV transmission probabilities, STD cofactors, circumcision cofactors) will then be adjusted to obtain a fit to time trends in epidemiological HIV data in the country.

This model will then produce estimates of new infections and current prevalence that should be more consistent with observed behavioral trends than those given by EPIMODEL. This will increase understanding of the underlying dynamics of the Cambodian epidemic and the primary factors that have driven the prevalence changes observed. It will also allow the exploration of various alternative prevention and care scenarios to assess their future impact on the course of the epidemic, as well as to quantify the benefits of past prevention efforts.

Appendix:

Table 1. Changes of the sentinel sites and groups of the HIV Surveillance System in Cambodia, 1992 - 2000

	YEAR								
	1992	1993	1994	1995	1996	1997	1998	1999	2000
Provinces	PNP	No survey	PNP BMC BTB SHV SRP	PNP BMC BTB SHV SRP KDL KHK PST RTK	PNP BMC BTB SHV SRP KDL KHK PST RTK KCM KCN KPT KRT KSP PV G STG SVG TKO	PNP BMC BTB SHV SRP KDL KHK PST RTK KCM KCN KPT KRT KSP PV G STG SVG TKO KEP KTH MDK PVH	PNP BMC BTB SHV SRP KDL KHK PST RTK KCM KCN KPT KRT KSP PV G STG SVG TKO KTH	PNP BMC BTB SHV SRP KDL KHK PST RTK KCM KCN KPT KRT KSP PV G STG SVG TKO KTH PAL	PNP BMC BTB SHV SRP KDL KHK PST RTK KCM KCN KPT KRT KSP PV G STG SVG TKO KTH PAL PVH
Sentinel groups	-DCSW -TB -POL -MIL -ANC -STD		-DCSW -TB -POL -MIL -ANC	-DCSW -TB -POL -MIL -ANC -IDCSW	-DCSW -TB -POL -MIL -ANC	-DCSW -TB -POL -MIL -ANC - -HIPN	-DCSW - -POL - -MWRA -IDCSW -HIPN	-DCSW -TB -POL - -ANC -BEG -FRL -HIPN -HH	-DCSW -TB -POL - -ANC -IDCSW - -HINP

NOTE:

- **DCSW**: *Direct Commercial Sex Workers*
- **TB**: *Tuberculosis patients*
- **POL**: *Police personnel*
- **MIL**: *Military personnel*
- **ANC**: *Antenatal Clinic Attendees*
- **STD**: *Sexually Transmitted Diseases patient*
- **IDCSW**: *Indirect Commercial Sex Workers*
- **MWRA**: *Married Women of Reproductive Age*
- **HIPN**: *Hospital In-Patients*
- **FRL**: *Freelance*
- **HH**: *Household*

BMC: Banteay Mean Chey
BTB: Battambang
KCM: Kampong Cham
KCN: Kampong Chhnang
KSP: kampong Speu
KTH: Kampong Thom
KPT: Kampot
KDL: Kandal
KHK: Koh Kong
KRT: Kratie
PAL: Paylin
PNP: Phnom Penh
PVG: Prey Veng
PST: Pursat
RTK: Rattanakiri
SRP: Siem Reap
SHV: Sihanouk Ville
STG: Stung Treng
SVG: Svay Rieng
TKO: Takeo
PVH: Preah Vihear

Table 2. Refusal rate among target populations
Cambodia HSS 2000

No	Province/Ville	DCSW	IDCSWs	Police
1	Banteay Meanchey	2.0%	9.1%	0.7%
2	Battambang	9.7%	16.8%	8.2%
3	Kampong Cham	5.7%	32.3%	7.1%
4	Kampong Chhnang	0.0%	4.8%	0.0%
5	Kampong Speu	5.6%	9.0%	1.6%
6	Kampong Thom	13.7%	32.0%	19.6%
7	Kampot	13.6%	16.9%	15.3%
8	Kandal	18.0%	25.0%	23.0%
9	Koh kong	6.0%	19.0%	0.0%
10	Kratie	0.0%	7.5%	7.1%
11	Pailin	6.0%	14.0%	58.0%
12	Phnom Penh	0.0%	0.0%	0.0%
13	Prey Veng	0.7%	0.0%	0.0%
14	Pursat	0.0%	20.3%	0.0%
15	Rattanakiri	0.0%	0.0%	1.0%
16	Siem Riep	4.5%	2.6%	4.1%
17	Sihanouk Ville	0.7%	3.3%	1.7%
18	Stung Treng	4.0%	13.0%	18.0%
19	Svay Rieng	12.5%	4.9%	3.8%
20	Takeo	1.0%	4.6%	4.8%
21	Preah Vihear	0.0%	15.2%	6.7%
	Total	4.9%	11.9%	8.6%

Table 3. HIV Seroprevalence rates among target populations in Cambodia, 2000

No.	Province/Ville	DCSWs			IDCSWs			Police			TB patients			ANC									HIPN		
														PC			RD			PC + RD					
		Test	Posi	Prev.	Test	Posi	Prev.	Test	Posi	Prev.	Test	Posi	Prev.	Test	Posi	Prev.	Test	Posi	Prev.	Test	Posi	Prev.	Test	Posi	Prev.
1	Banteay Meanchey	150	56	37.3%	150	20	13.3%	150	11	7.3%	150	20	13.3%	150	7	4.7%				150	7	4.7%			
2	Battambang	147	44	29.9%	150	37	24.7%	298	13	4.4%	149	29	19.5%	200	4	2.0%	201	3	1.5%	401	7	1.7%	380	46	12.1%
3	Kampong Cham	150	44	29.3%	152	23	15.1%	299	6	2.0%	151	7	4.6%	300	3	1.0%	187	2	1.1%	487	5	1.0%	236	19	8.1%
4	Kampong Chhnang	112	48	42.9%	38	5	13.2%	300	5	1.7%	299	3	1.0%	150	6	4.0%	150	4	2.7%	300	10	3.3%			
5	Kampong Speu	117	43	36.8%	22	7	31.8%	300	7	2.3%	116	6	5.2%	150	5	3.3%	150	7	4.7%	300	12	4.0%			
6	Kampong Thom	82	23	28.0%	52	8	15.4%	300	4	1.3%	120	1	0.8%	150	2	1.3%	150	0	0.0%	300	2	0.7%			
7	Kampot	57	24	42.1%	64	21	32.8%	302	11	3.6%	150	7	4.7%	156	1	0.6%	150	2	1.3%	306	3	1.0%			
8	Kandal	78	20	25.6%	65	18	27.7%	150	6	4.0%	149	9	6.0%	150	6	4.0%	150	2	1.3%	300	8	2.7%			
9	Koh Kong	140	75	53.6%	83	13	15.7%	149	16	10.7%	6	1	16.7%	151	7	4.6%	8	1	12.5%	159	8	5.0%			
10	Kratie	81	26	32.1%	57	10	17.5%	300	5	1.7%	52	2	3.8%	150	2	1.3%	104	0	0.0%	254	2	0.8%			
11	Paylin	124	47	37.9%	70	6	8.6%	61	4	6.6%				90	0	0.0%	92	1	1.1%	182	1	0.5%			
12	Phnom Penh	152	40	26.3%	153	16	10.5%	166	9	5.4%	150	25	16.7%	600	16	2.7%				600	16	2.7%	400	37	9.3%
13	Prey Veng	149	26	17.4%	149	17	11.4%	150	5	3.3%	302	2	0.7%	150	0	0.0%	150	5	3.3%	300	5	1.7%			
14	Pursat	70	41	58.6%	75	8	10.7%	303	14	4.6%	95	12	12.6%	200	7	3.5%	200	4	2.0%	400	11	2.8%			
15	Rattanak kiri	23	5	21.7%	40	12	30.0%	96	2	2.1%	18	0	0.0%	200	2	1.0%	110	2	1.8%	310	4	1.3%			
16	Siem Reap	150	43	28.7%	150	30	20.0%	140	4	2.9%	150	4	2.7%	150	13	8.7%	150	4	2.7%	300	17	5.7%			
17	Sihanouk Ville	150	33	22.0%	150	15	10.0%	155	11	7.1%	76	8	10.5%	150	7	4.7%	107	3	2.8%	257	10	3.9%			
18	Stung Treng	50	19	38.0%	20	6	30.0%	216	2	0.9%	22	0	0.0%	99	0	0.0%	172	3	1.7%	271	3	1.1%			
19	Svay Reing	56	4	7.1%	58	3	5.2%	300	2	0.7%	244	12	4.9%	200	2	1.0%	199	3	1.5%	399	5	1.3%			
20	Takeo	96	11	11.5%	62	12	19.4%	299	8	2.7%	300	15	5.0%	140	11	7.9%	150	1	0.7%	290	12	4.1%			
21	Preah Vihear	46	6	13.0%	39	3	7.7%	277	3	1.1%	40	2	5.0%	167	4	2.4%	129	0	0.0%	296	4	1.4%			
	Total	2180	678	31.1%	1799	290	16.1%	4711	148	3.1%	2739	165	6.0%	3853	105	2.7%	2709	47	1.7%	6562	152	2.3%	1016	102	10.0%

Table 4. HIV Seroprevalence rates among DCSW by age groups in Cambodia, 2000

No.	Province/Ville	Age Groups											
		Total			< 20			20 -29			30+		
		Test	Posi	Prev.	Test	Posi	Prev.	Test	Posi	Prev.	Test	Posi	Prev.
1	Banteay Meanchey	150	56	37.3%	32	8	25.0%	111	45	40.5%	7	3	42.9%
2	Battambang	147	44	29.9%	41	10	24.4%	99	34	34.3%	7	0	0.0%
3	Kampong Cham	150	44	29.3%	29	5	17.2%	109	35	32.1%	12	4	33.3%
4	Kampong Chhnang	112	48	42.9%	16	3	18.8%	75	36	48.0%	21	9	42.9%
5	Kampong Speu	117	43	36.8%	17	8	47.1%	69	28	40.6%	31	7	22.6%
6	Kampong Thom	82	23	28.0%	15	5	33.3%	59	17	28.8%	8	1	12.5%
7	Kampot	57	24	42.1%	13	4	30.8%	39	17	43.6%	5	3	60.0%
8	Kandal	78	20	25.6%	21	1	4.8%	49	17	34.7%	8	2	25.0%
9	Koh Kong	140	75	53.6%	22	7	31.8%	116	66	56.9%	2	2	100.0%
10	Kratie	81	26	32.1%	21	8	38.1%	52	16	30.8%	8	2	25.0%
11	Paylin	124	47	37.9%	24	7	29.2%	94	37	39.4%	6	3	50.0%
12	Phnom Penh	152	40	26.3%	57	16	28.1%	91	23	25.3%	4	1	25.0%
13	Prey Veng	149	26	17.4%	18	0	0.0%	120	22	18.3%	11	4	36.4%
14	Pursat	70	41	58.6%	10	3	30.0%	51	31	60.8%	9	7	77.8%
15	Rattanak kiri	23	5	21.7%	6	1	16.7%	16	3	18.8%	1	1	100.0%
16	Siem Reap	150	43	28.7%	43	9	20.9%	101	31	30.7%	6	3	50.0%
17	Sihanouk Ville	150	33	22.0%	19	2	10.5%	127	29	22.8%	4	2	50.0%
18	Stung Treng	50	19	38.0%	14	5	35.7%	32	13	40.6%	4	1	25.0%
19	Svay Reing	56	4	7.1%	13	1	7.7%	40	3	7.5%	3	0	0.0%
20	Takeo	96	11	11.5%	37	5	13.5%	59	6	10.2%	0		
21	Preah Vihear	46	6	13.0%	12	1	8.3%	34	5	14.7%	0		
	Total	2180	678	31.1%	480	109	22.7%	1543	514	33.3%	157	55	35.0%

Table 5. HIV Seroprevalence rates among IDCSW by age groups in Cambodia, 2000

No.	Province/Ville	Age Groups											
		Total			< 20			20 -29			30+		
		Test	Posi	Prev.	Test	Posi	Prev.	Test	Posi	Prev.	Test	Posi	Prev.
1	Banteay Meanchey	150	20	13.3%	53	2	3.8%	89	15	16.9%	8	3	37.5%
2	Battambang	150	37	24.7%	48	6	12.5%	96	30	31.3%	6	1	16.7%
3	Kampong Cham	152	23	15.1%	36	2	5.6%	112	20	17.9%	4	1	25.0%
4	Kampong Chhnang	38	5	13.2%	7	0	0.0%	24	5	20.8%	7	0	0.0%
5	Kampong Speu	22	7	31.8%	1	0	0.0%	17	7	41.2%	4	0	0.0%
6	Kampong Thom	52	8	15.4%	6	0	0.0%	44	7	15.9%	2	1	50.0%
7	Kampot	64	21	32.8%	5	1	20.0%	51	17	33.3%	8	3	37.5%
8	Kandal	65	18	27.7%	20	2	10.0%	40	14	35.0%	5	2	40.0%
9	Koh Kong	83	13	15.7%	29	2	6.9%	51	11	21.6%	3	0	0.0%
10	Kratie	57	10	17.5%	15	1	6.7%	39	9	23.1%	3	0	0.0%
11	Paylin	70	6	8.6%	23	2	8.7%	42	4	9.5%	5	0	0.0%
12	Phnom Penh	153	16	10.5%	37	5	13.5%	99	10	10.1%	17	1	5.9%
13	Prey Veng	149	17	11.4%	32	3	9.4%	117	14	12.0%	0		
14	Pursat	75	8	10.7%	25	3	12.0%	40	3	7.5%	10	2	20.0%
15	Rattanak kiri	40	12	30.0%	6	2	33.3%	33	10	30.3%	1	0	0.0%
16	Siem Reap	150	30	20.0%	23	3	13.0%	116	25	21.6%	11	2	18.2%
17	Sihanouk Ville	150	15	10.0%	39	4	10.3%	105	9	8.6%	6	2	33.3%
18	Stung Treng	20	6	30.0%	1	0	0.0%	19	6	31.6%	0		
19	Svay Reing	58	3	5.2%	12	1	8.3%	43	2	4.7%	3	0	0.0%
20	Takeo	62	12	19.4%	18	5	27.8%	42	7	16.7%	2	0	
21	Preah Vihear	39	3	7.7%	3	0	0.0%	36	3	8.3%	0		
	Total	1799	290	16.1%	439	44	10.0%	1255	228	18.2%	105	18	17.1%

Table 6. HIV Seroprevalence rates among Police by age groups in Cambodia, 2000

No.	Province/Ville	Age Groups											
		Total			< 30			30 -49			50+		
		Test	Posi	Prev.	Test	Posi	Prev.	Test	Posi	Prev.	Test	Posi	Prev.
1	Banteay Meanchey	150	11	7.3%	36	3	8.3%	107	8	7.5%	7	0	0.0%
2	Battambang	298	13	4.4%	83	6	7.2%	212	7	3.3%	3	0	0.0%
3	Kampong Cham	299	6	2.0%	34	1	2.9%	252	5	2.0%	13	0	0.0%
4	Kampong Chhnang	300	5	1.7%	25	0	0.0%	255	4	1.6%	20	1	5.0%
5	Kampong Speu	300	7	2.3%	48	2	4.2%	233	5	2.1%	19	0	0.0%
6	Kampong Thom	300	4	1.3%	53	2	3.8%	229	2	0.9%	18	0	0.0%
7	Kampot	302	11	3.6%	53	1	1.9%	232	10	4.3%	17	0	0.0%
8	Kandal	150	6	4.0%	13	0	0.0%	124	6	4.8%	13	0	0.0%
9	Koh Kong	149	16	10.7%	22	2	9.1%	125	12	9.6%	2	2	100.0%
10	Kratie	300	5	1.7%	83	2	2.4%	197	3	1.5%	20	0	0.0%
11	Paylin	61	4	6.6%	19	1	5.3%	41	3	7.3%	1	1	100.0%
12	Phnom Penh	166	9	5.4%	48	1	2.1%	114	7	6.1%	4	0	0.0%
13	Prey Veng	150	5	3.3%	56	2	3.6%	94	3	3.2%	0		
14	Pursat	303	14	4.6%	33	0	0.0%	259	14	5.4%	11	0	0.0%
15	Rattanak kiri	96	2	2.1%	15	0	0.0%	77	2	2.6%	4	0	0.0%
16	Siem Reap	140	4	2.9%	31	1	3.2%	103	3	2.9%	6	0	0.0%
17	Sihanouk Ville	155	11	7.1%	8	1	12.5%	140	10	7.1%	7	0	0.0%
18	Stung Treng	216	2	0.9%	46	0	0.0%	154	2	1.3%	16	0	0.0%
19	Svay Reing	300	2	0.7%	54	0	0.0%	239	2	0.8%	7	0	0.0%
20	Takeo	299	8	2.7%	35	1	2.9%	249	7	2.8%	15	0	0.0%
21	Preah Vihear	277	3	1.1%	82	1	1.2%	185	2	1.1%	10	0	0.0%
	Total	4711	148	3.1%	877	27	3.1%	3621	117	3.2%	213	4	1.9%

Table 7. HIV Seroprevalence rates among ANC by age groups and site in Cambodia, 2000

No.	Province/Ville	PC + RD									PC									RD								
		Total			15 - 29			30 -49			Total			15 - 29			30 -49			Total			15 - 29			30 -49		
		Test	Posi	Prev.	Test	Posi	Prev.	Test	Posi	Prev.	Test	Posi	Prev.	Test	Posi	Prev.	Test	Posi	Prev.	Test	Posi	Prev.	Test	Posi	Prev.	Test	Posi	Prev.
1	Banteay Meanchey	150	7	4.7%	111	4	3.6%	39	3	7.7%	150	7	4.7%	111	4	3.6%	39	3	7.7%	0			0			0		
2	Battambang	401	7	1.7%	261	6	2.3%	140	1	0.7%	200	4	2.0%	136	4	2.9%	64	0	0.0%	201	3	1.5%	125	2	1.6%	76	1	1.3%
3	Kampong Cham	487	5	1.0%	343	5	1.5%	144	0	0.0%	300	3	1.0%	214	3	1.4%	86	0	0.0%	187	2	1.1%	129	2	1.6%	58	0	0.0%
4	Kampong Chhnang	300	10	3.3%	147	4	2.7%	153	6	3.9%	150	6	4.0%	76	3	3.9%	74	3	4.1%	150	4	2.7%	71	1	1.4%	79	3	3.8%
5	Kampong Speu	300	12	4.0%	190	7	3.7%	110	5	4.5%	150	5	3.3%	112	2	1.8%	38	3	7.9%	150	7	4.7%	78	5	6.4%	72	2	2.8%
6	Kampong Thom	300	2	0.7%	199	2	1.0%	101	0	0.0%	150	2	1.3%	106	2	1.9%	44	0	0.0%	150	0	0.0%	93	0	0.0%	57	0	0.0%
7	Kampot	306	3	1.0%	192	2	1.0%	114	1	0.9%	156	1	0.6%	105	0	0.0%	51	1	2.0%	150	2	1.3%	87	2	2.3%	63	0	0.0%
8	Kandal	300	8	2.7%	225	5	2.2%	75	3	4.0%	150	6	4.0%	114	3	2.6%	36	3	8.3%	150	2	1.3%	111	2	1.8%	39	0	0.0%
9	Koh Kong	159	8	5.0%	87	5	5.7%	72	3	4.2%	151	7	4.6%	84	5	6.0%	67	2	3.0%	8	1	12.5%	3	0	0.0%	5	1	20.0%
10	Kratie	254	2	0.8%	182	2	1.1%	72	0	0.0%	150	2	1.3%	111	2	1.8%	39	0	0.0%	104	0	0.0%	71	0	0.0%	33	0	0.0%
11	Paylin	182	1	0.5%	66	1	1.5%	116	0	0.0%	90	0	0.0%	28	0	0.0%	62	0	0.0%	92	1	1.1%	38	1	2.6%	54	0	0.0%
12	Phnom Penh	600	16	2.7%	422	14	3.3%	178	2	1.1%	600	16	2.7%	422	14	3.3%	178	2	1.1%	0			0			0		
13	Prey Veng	300	5	1.7%	241	3	1.2%	59	2	3.4%	150	0	0.0%	115	0	0.0%	35	0	0.0%	150	5	3.3%	126	3	2.4%	24	2	8.3%
14	Pursat	400	11	2.8%	256	9	3.5%	144	2	1.4%	200	7	3.5%	123	5	4.1%	77	2	2.6%	200	4	2.0%	133	4	3.0%	67	0	0.0%
15	Rattanak kiri	310	4	1.3%	185	3	1.6%	125	1	0.8%	200	2	1.0%	121	2	1.7%	79	0	0.0%	110	2	1.8%	64	1	1.6%	46	1	2.2%
16	Siem Reap	300	17	5.7%	184	10	5.4%	116	7	6.0%	150	13	8.7%	101	9	8.9%	49	4	8.2%	150	4	2.7%	83	1	1.2%	67	3	4.5%
17	Sihanouk Ville	257	10	3.9%	157	7	4.5%	100	3	3.0%	150	7	4.7%	102	6	5.9%	48	1	2.1%	107	3	2.8%	55	1	1.8%	52	2	3.8%
18	Stung Treng	271	3	1.1%	181	3	1.7%	90	0	0.0%	99	0	0.0%	61	0	0.0%	38	0	0.0%	172	3	1.7%	120	3	2.5%	52	0	0.0%
19	Svay Reing	399	5	1.3%	224	4	1.8%	175	1	0.6%	200	2	1.0%	95	2	2.1%	105	0	0.0%	199	3	1.5%	129	2	1.6%	70	1	1.4%
20	Takeo	290	12	4.1%	217	10	4.6%	73	2	2.7%	140	11	7.9%	112	9	8.0%	28	2	7.1%	150	1	0.7%	105	1	1.0%	45	0	0.0%
21	Preah Vihear	296	4	1.4%	180	3	1.7%	116	1	0.9%	167	4	2.4%	99	3	3.0%	68	1	1.5%	129	0	0.0%	81	0	0.0%	48	0	0.0%
	Total	6562	152	2.3%	4250	109	2.6%	2312	43	1.9%	3853	105	2.7%	2548	78	3.1%	1305	27	2.1%	2709	47	1.7%	1702	31	1.8%	1007	16	1.6%

Table 8. HIV Seroprevalence rates among sentinel groups in Cambodia, 1992 - 2000

Target groups	Year															
	1992		1994		1995		1996		1997		1998		1999		2000	
	N. tested	%	N. tested	%	N. tested	%	N. tested	%	N. tested	%	N. tested	%	N. tested	%	N. tested	%
DCSWs	207	9	213	39	1007	38	1859	40.9	1132	39.3	2284	42.6	2259	33.2	2180	31.1
Tuberculosis patients	N/A		N/A		602	2.5	1826	3.9	1035	5	N/A		2166	7.9	2739	6.0
Police personnel	240	0	N/A		954	8	1775	5.5	1325	6	2650	6.2	4141	4.7	4711	3.1
Military personel	200	0	N/A		1013	5.9	1429	5.9	1249	7.1	N/A		N/A		N/A	
ANC Attendees	195	0	N/A		870	2.6	3429	1.7	5003	3.2	N/A		5397	2.6	6562	2.3
STDs patients	805	4	1072	9	N/A		N/A		N/A		N/A		N/A		N/A	
IDCSWs	N/A		N/A		549	25.3	N/A		N/A		1358	19.1	1488	18.6	1799	16.1
Hospital in patients	N/A		N/A		N/A		N/A		1155	6	1173	12.2	1061	11	1016	10.0
MWRA	N/A		N/A		N/A		N/A		N/A		8879	2.4	N/A		N/A	
Household Male	N/A		N/A		N/A		N/A		N/A		N/A		3069	1.8	N/A	
Househols female	N/A		N/A		N/A		N/A		N/A		N/A		3066	1.2	N/A	

* N/A: not available

Table : 9

Province Specific Surveillance Data

Province:Banteay Meanchey	HIV Prevalence in 2000					HIV Prevalence (%) (sample size)						
Target Group	*Sample Size*	*Number Positive*	*HIV Prevalence*	*95% CI*	*Percent Refusal*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
Direct Sex workers	150	56	**37.3%**	29.5 - 45.2	2.0%		**45.8%**	**54.5%**	**58.1%**	**54.0%**	**50.7%**	37.3%
Age <20	32	8	**25.0%**									
Age 20-29	111	45	**40.5%**									
Age>=30	7	3	**0.0%**									
Indirect sex worker	150	20	**13.3%**	7.8 - 18.8	9.1%		**31.3%**			**22.3%**	**10.0%**	13.3%
Police												
Age <30	36	3	**8.3%**									
Age30-49	107	8	**7.5%**									
Total(including 50-69)	150	11	**7.3%**	3.1 - 11.5	0.7%		**4.4%**	**11.8%**		**10.0%**	**6.0%**	7.3%
ANC PC= 1 sites	150	7	**4.7%**	1.2 - 8.0								
ANC RD= sites												
ANC (PC+RD)			**#DIV/0!**				**1.5%**	**1.7%**	**3.8%**	**0.2%**	**2.8%**	
Age 15-29	111	4	**3.6%**									
Age 30-49	39	3	**7.7%**									
TB Patients Male	83	13	**15.7%**	7.6 - 23.6								
TB Patients Female	67	7	**10.4%**	2.9 - 17.9								
TB Patient Male + Female	150	20	**13.3%**	7.8 - 18.8			**0.0%**	**298.0%**	**7.4%**		**12.1%**	13.3%
Blood donor	542	10	**1.8%**	0.9 - 3.5								1.8%

* PC: Provincial Capital
* RD: Remaining District
* Confidencial interval only on total for each group no age specific

Table: 10

Province Specific Surveillance Data

Province:Battambang	HIV Prevalence in 2000					HIV Prevalence (%) (sample size)						
Target Group	*Sample Size*	*Number Positive*	*HIV Prevalence*	*95% CI*	*Percent Refusal*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
Direct Sex workers	147	44	**29.9%**	22.4 - 37.4	9.7%		48.0%	58.3%	47.1%	53.3%	35.4%	29.9%
Age <20	41	10	**24.4%**									
Age 20-29	99	34	**34.3%**									
Age>=30	7	0	**0.0%**									
Indirect sex worker	150	37	**24.7%**	17.6 -31.6	16.8%		29.2%			20.4%	20.8%	24.7%
Police												
Age <30	83	6	**7.2%**									
Age30-49	212	7	**3.3%**									
Total(including 50-69)	298	13	**4.4%**	2.0 - 6.6	8.2%		9.7%	11.6%	8.7%	5.3%	4.4%	4.4%
TB Patients Male	76	17	**22.4%**	12.7 - 31.9								
TB Patients Female	73	12	**16.4%**	7.7 - 25.1								
TB Patient Male + Female	149	29	**19.5%**	13.0 - 25.8			3.5%	5.1%	16.0%		11.7%	19.5%
Hospital Patients:	380	46	**12.1%**	8.8 - 15.3					11.5%	18.4%	14.5%	12.1%
Medical Male	77	16	**20.8%**	11.5 - 30.0								
Female	70	8	**11.4%**	3.7 - 19.0								
Surgical Male	161	13	**8.1%**	3.8 - 12.3								
Female	72	9	**12.5%**	4.6 - 20.3								
ANC PC= 2 sites	200	4	**2.0%**	0.0 - 3.9								
ANC RD= 4 sites	201	3	**1.5%**	0 - 3.1								
ANC (PC+RD)	401	7	**1.7%**	0.4 - 3.0			2.0%	4.4%	4.0%	3.3%	1.6%	1.7%
Age 15-29	261	6	**2.3%**									
Age 30-49	140	1	**0.7%**									
Blood donor	2083	99	**4.8%**	3.9 - 5.8								4.8%

* PC: Provincial Capital
* RD: Remaining District
* Confidencial interval only on total for each group no age specific

Table: 11 **Province Specific Surveillance Data**

Province: Kampong Cham	HIV Prevalence in 2000					HIV Prevalence (%) (sample size)						
Target Group	*Sample Size*	*Number Positive*	*HIV Prevalence*	*95% CI*	*Percent Refusal*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
Direct Sex workers	150	44	**29.3%**	22.0 - 37.4	5.7%			27.3%		28.0%	28.0%	29.3%
Age <20	29	5	**17.2%**									
Age 20-29	109	35	**32.1%**									
Age>=30	12	4	**33.3%**									
Indirect sex worker	152	23	**15.1%**	9.3 - 20.8	32.3%					8.0%	29.0%	15.1%
Police												
Age <30	34	1	**2.9%**									
Age30-49	252	5	**2.0%**									
Total(including 50-69)	299	6	**2.0%**	0.4 - 3.6	7.1%			3.1%	1.8%	3.3%	3.0%	2.0%
TB Patients Male	89	6	**6.7%**	1.4 - 12.0								
TB Patients Female	62	1	**1.6%**	0 - 4.8								
TB Patient Male + Female	151	7	**4.6%**	1.2 - 8.0				3.4%	2.0%		7.3%	4.6%
Hospital Patients:	236	19	**8.1%**	4.5 - 11.5					5.8%	6.5%	7.6%	8.1%
Medical Male	56	8	**14.3%**	4.8 - 23.7								
Female	57	7	**12.3%**	1.0 - 21.0								
Surgical Male	78	2	**2.6%**	0 - 6.1								
Female	45	2	**4.4%**	0 - 10.7								
ANC PC= 1 sites	300	3	**1.0%**	0 - 2.1	3.3%							
ANC RD= 2 sites	187	2	**1.1%**	0 - 2.5	0.0%							
ANC (PC+RD)	487	5	**1.0%**	0 -1.9				0.9%	1.5%	3.3%	3.5%	1.0%
Age 15-29	343	5	**1.5%**									
Age 30-49	144	0	**0.0%**									
Blood donor	1052	20	**1.9%**	1.2 - 3.0								1.9%

* PC: Provincial Capital
* RD: Remaining District
* Confidencial interval only on total for each group no age specific

Table : 12 **Province Specific Surveillance Data**

Province: Kampong Chhnang	HIV Prevalence in 2000					HIV Prevalence (%) (sample size)						
Target Group	*Sample Size*	*Number Positive*	*HIV Prevalence*	*95% CI*	*Percent Refusal*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
Direct Sex workers	112	48	42.9%	33.5 - 52.1	0.0%			38.8%	43.9%	39.3%	42.3%	42.9%
Age <20	16	3	18.8%									
Age 20-29	75	36	48.0%									
Age>=30	21	9	42.9%									
Indirect sex worker	38	5	13.2%	1.8 - 24.4	4.8%					13.6%	25.5%	13.2%
Police												
Age <30	25	0	0.0%									
Age30-49	255	4	1.6%									
Total(including 50-69)	300	5	1.7%	0.2 - 3.1	0.0%			351.0%		2.0%	3.7%	1.7%
ANC PC= 1 sites	150	6	4.0%	0.8 - 7.1								
ANC RD= 4 sites	150	4	2.7%	0.0 - 5.2								
ANC (PC+RD)	300	10	3.3%	1.2 - 5.3				1.2%	0.9%	1.5%	2.7%	3.3%
Age 15-29	147	4	2.7%									
Age 30-49	153	6	3.9%									
TB Patients Male	156	1	0.6%	0 - 1.9								
TB Patients Female	143	2	1.4%	0 - 3.3								
TB Patient Male + Female	299	3	1.0%	0 - 2.1				172.0%	2.0%		4.0%	1.0%
Blood donor	819	30	3.7%	2.5 - 5.2								3.7%

* PC: Provincial Capital
* RD: Remaining District
* Confidencial interval only on total for each group no age specific

Table: 13

Province Specific Surveillance Data

Province: Kampong Speu	HIV Prevalence in 2000					HIV Prevalence (%) (sample size)						
Target Group	*Sample Size*	*Number Positive*	*HIV Prevalence*	*95% CI*	*Percent Refusal*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
Direct Sex workers	117	43	**36.8%**	27.8 - 45.6	**5.6%**			50.4%		47.1%	30.2%	36.8%
Age <20	17	8	**47.1%**									
Age 20-29	69	28	**40.6%**									
Age>=30	31	7	**22.6%**									
Indirect sex worker	22	7	**31.8%**	10.6 - 52.9	**9.0%**					8.0%	10.0%	31.8%
Police												
Age <30	48	2	**4.2%**									
Age30-49	233	5	**2.1%**									
Total(including 50-69)	300	7	**2.3%**	0.6 - 4.0	**1.6%**			1.1%		3.3%	2.0%	2.3%
ANC PC= 2 sites	150	5	**3.3%**	0.4 - 6.2								
ANC RD= 2 sites	150	7	**4.7%**	1.2 - 8.0								
ANC (PC+RD)	300	12	**4.0%**	1.7 - 6.2				143.0%	2.0%	0.5%	1.5%	4.0%
Age 15-29	190	7	**3.7%**									
Age 30-49	110	5	**4.5%**									
TB Patients Male	52	2	**3.8%**	0 - 9.2								
TB Patients Female	64	4	**6.3%**	0.1 - 12.3								
TB Patient Male + Female	116	6	**5.2%**	1.0 - 9.2				2.9%	3.9%		2.2%	5.2%
Blood donor	323	11	**3.4%**	1.8 - 6.2								3.4%

* PC: Provincial Capital
* RD: Remaining District
* Confidencial interval only on total for each group no age specific

Table: 14 Province Specific Surveillance Data

Province: Kampong Thom	HIV Prevalence in 2000					HIV Prevalence (%) (sample size)						
Target Group	*Sample Size*	*Number Positive*	*HIV Prevalence*	*95% CI*	*Percent Refusal*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
Direct Sex workers	82	23	28.0%	18.1 - 37.1	13.7%			20.6%		32.6%	29.5%	28.0%
Age <20	15	5	33.3%									
Age 20-29	59	17	28.8%									
Age>=30	8	1	12.5%									
Indirect sex worker	52	8	15.4%	5.2 - 25.5	32.0%					34.2%	25.0%	15.4%
Police												
Age <30	53	2	3.8%									
Age30-49	229	2	0.9%									
Total(including 50-69)	300	4	1.3%	0.0 - 2.6	19.6%				2.9%	4.1%	2.7%	1.3%
ANC PC= 2 sites	150	2	1.3%	0 - 3.1								
ANC RD= 3 sites	150	0	0.0%	-								
ANC (PC+RD)	300	2	0.7%	0 - 1.5					3.2%	4.1%	2.0%	0.7%
Age 15-29	199	2	1.0%									
Age 30-49	101	0	0.0%									
TB Patients Male	52	0	0.0%	-								
TB Patients Female	68	1	1.5%	0 - 4.4								
TB Patient Male + Female	120	1	0.8%	0 - 2.4				1.3%	2.6%		9.0%	0.8%
Blood donor	1048	15	1.4%	0.8 - 2.4								

* PC: Provincial Capital
* RD: Remaining District
* Confidencial interval only on total for each group no age specific

T15

Province Specific Surveillance Data

Province: Kampot	HIV Prevalence in 2000					HIV Prevalence (%) (sample size)						
Target Group	*Sample Size*	*Number Positive*	*HIV Prevalence*	*95% CI*	*Percent Refusal*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
Direct Sex workers	57	24	**42.1%**	28.8 - 55.3	13.6%			41.6%		61.2%	51.8%	42.1%
Age <20	13	4	**30.8%**									
Age 20-29	39	17	**43.6%**									
Age>=30	5	3	**60.0%**									
Indirect sex worker	64	21	**32.8%**	20.9 - 44.6	16.9%					24.2%	10.6%	32.8%
Police												
Age <30	53	1	**1.9%**									
Age30-49	232	10	**4.3%**									
Total(including 50-69)	302	11	**3.6%**	1.5 - 5.7	15.3%			8.6%	2.5%	5.4%	1.3%	3.6%
TB Patients Male	84	4	**4.8%**	0.1 - 9.4								
TB Patients Female	66	3	**4.5%**	0 - 9.7								
TB Patient Male + Female	150	7	**4.7%**	1.2 - 8.0				6.0%	0.0%		13.9%	4.7%
ANC PC= 1 sites	156	1	**0.6%**	0 - 1.9	NA							
ANC RD= 3 sites	150	2	**1.3%**	0 - 3.1	NA							
ANC (PC+RD)	306	3	**1.0%**	0 - 2.0				1.9%	2.2%	1.2%	1.6%	1.0%
Age 15-29	192	2	**1.0%**									
Age 30-49	114	1	**0.9%**									
Blood donor	539	15	**2.8%**	1.6 - 4.6								2.8%

* PC: Provincial Capital
* RD: Remaining District
* Confidencial interval only on total for each group no age specific

Table: 16 Province Specific Surveillance Data

Province: Kandal	HIV Prevalence in 2000					HIV Prevalence (%) (sample size)						
Target Group	*Sample Size*	*Number Positive*	*HIV Prevalence*	*95% CI*	*Percent Refusal*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
Direct Sex workers	78	20	25.6%	15.7 - 35.5	18.0%		13.6%	13.3%	19.1%	21.4%	31.7%	25.6%
Age <20	21	1	4.8%									
Age 20-29	49	17	34.7%									
Age>=30	8	2	25.0%									
Indirect sex worker	65	18	27.7%	16.5 - 38.8	25.0%					9.0%	17.3%	27.7%
Police												
Age <30	13	0	0.0%									
Age30-49	124	6	4.8%									
Total(including 50-69)	150	6	4.0%	0.8 - 7.1	23.0%			6.2%	7.4%	8.0%	7.3%	4.0%
ANC PC= 1 sites	150	6	4.0%	0.8 - 7.1								
ANC RD= sites	150	2	1.3%	0 - 3.1								
ANC (PC+RD)	300	8	2.7%	0 - 4.5				3.0%	2.9%	4.0%	3.0%	2.7%
Age 15-29	225	5	2.2%									
Age 30-49	75	3	4.0%									
TB Patients Male	59	4	6.8%	0.1 - 13.3								
TB Patients Female	90	5	5.6%	0.7 - 10.3								
TB Patient Male + Female	149	9	6.0%	2.1 - 9.9				2.8%	1.6%		8.6%	6.0%

* PC: Provincial Capital
* RD: Remaining District
* Confidencial interval only on total for each group no age specific

Table: 17

Province Specific Surveillance Data

Province: Koh Kong	HIV Prevalence in 2000					HIV Prevalence (%) (sample size)						
Target Group	*Sample Size*	*Number Positive*	*HIV Prevalence*	*95% CI*	*Percent Refusal*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
Direct Sex workers	140	75	**53.6%**	45.2 - 62.0	**6.0%**		**39.2%**	**52.1%**	**52.0%**	**41.0%**	**41.7%**	**53.6%**
Age <20	22	7	**31.8%**									
Age 20-29	116	66	**56.9%**									
Age>=30	2	2	**100.0%**									
Indirect sex worker	83	13	**15.7%**	7.6 - 23.6	**19.0%**		**23.8%**			**17.6%**		**15.7%**
Police												
Age <30	22	2	**9.1%**									
Age30-49	125	12	**9.6%**									
Total(including 50-69)	149	16	**10.7%**	5.7 - 15.7	**0.0%**		**10.7%**	**14.3%**	**21.0%**	**25.8%**	**24.0%**	**10.7%**
ANC PC= 1 sites	151	7	**4.6%**	1.2 - 8.0								
ANC RD= sites	8	1	**12.5%**	0 - 42								
ANC (PC+RD)	159	8	**5.0%**	1.5 - 8.4				**5.3%**	**19.5%**	**6.0%**	**8.0%**	**5.0%**
Age 15-29	87	5	**5.7%**									
Age 30-49	72	3	**4.2%**									
TB Patients Male	4	1	**25.0%**	0 - 104.5								
TB Patients Female	2	0	**0.0%**	-								
TB Patient Male + Female	6	1	**16.7%**	0 - 59.5								
Blood donor	5	0	**0.0%**	-								**0.0%**

* PC: Provincial Capital
* RD: Remaining District
* Confidencial interval only on total for each group no age specific

Table: 18 **Province Specific Surveillance Data**

Province: Kratie	HIV Prevalence in 2000					HIV Prevalence (%) (sample size)						
Target Group	*Sample Size*	*Number Positive*	*HIV Prevalence*	*95% CI*	*Percent Refusal*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
Direct Sex workers	81	26	32.1%	21.7 - 42.4	0.0%			28.6%		25.0%	22.5%	32.1%
Age <20	21	8	38.1%									
Age 20-29	52	16	30.8%									
Age>=30	8	2	25.0%									
Indirect sex worker	57	10	17.5%	7.3 - 27.7	7.5%					8.9%	22.9%	17.5%
Police												
Age <30	83	2	2.4%									
Age30-49	197	3	1.5%									
Total(including 50-69)	300	5	1.7%	0.2 - 3.1	7.1%			3.7%		1.5%	1.7%	1.7%
TB Patients Male	25	1	4.0%	0 - 12.5								
TB Patients Female	27	1	3.7%	0 - 11.3								
TB Patient Male + Female	52	1	1.9%	0 - 9.2				28.0%	8.3%		12.5%	1.9%
ANC PC= 1 sites	150	2	1.3%	0 - 3.1	0.0%							
ANC RD= 1 sites	104	0	0.0%	-	0.0%							
ANC (PC+RD)	254	2	0.8%	0 - 1.8				0.3%	10.0%	0.9%	0.0%	
Age 15-29	182	2	1.1%									
Age 30-49	72	0	0.0%									
Blood donor	470	12	2.6%	1.4 - 4.5								2.6%

* PC: Provincial Capital
* RD: Remaining District
* Confidencial interval only on total for each group no age specific

Table: 19

Province Specific Surveillance Data

Province: Pailin	HIV Prevalence in 2000					HIV Prevalence (%) (sample size)						
Target Group	*Sample Size*	*Number Positive*	*HIV Prevalence*	*95% CI*	*Percent Refusal*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
Direct Sex workers	124	47	**37.9%**	29.2 - 46.5	6.0%		**13.6%**	**13.3%**	**19.1%**	**21.4%**	**31.7%**	37.9%
Age <20	24	7	**29.2%**									
Age 20-29	94	37	**39.4%**									
Age>=30	6	3	**50.0%**									
Indirect sex worker	70	6	**8.6%**	1.8 - 15.2	14.0%					**9.0%**	**17.3%**	8.6%
Police												
Age <30	19	1	**5.3%**									
Age30-49	41	3	**7.3%**									
Total(including 50-69)	61	4	**6.6%**	0.1 - 12.9	58.0%			**6.2%**	**7.4%**	**8.0%**	**7.3%**	6.6%
ANC PC= 1 sites	90	0	**0.0%**	-								
ANC RD= 1 sites	92	1	**1.1%**	0 - 3.2								
ANC (PC+RD)	182	1	**0.5%**	0 - 1.6				**3.0%**	**2.9%**	**4.0%**	**3.0%**	0.5%
Age 15-29	65	1	**1.5%**									
Age 30-49	116	0	**0.0%**									

* PC: Provincial Capital
* RD: Remaining District
* Confidencial interval only on total for each group no age specific

Table: 20 Province Specific Surveillance Data

Province: Phnom Penh	HIV Prevalence in 2000					HIV Prevalence (%) (sample size)						
Target Group	*Sample Size*	*Number Positive*	*HIV Prevalence*	*95% CI*	*Percent Refusal*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
Direct Sex workers	152	40	**26.3%**	19.2 - 33.4	**0.0%**		**30.5%**	**41.6%**	**44.4%**	**61.3%**	**47.4%**	**26.3%**
Age <20	57	16	**28.1%**									
Age 20-29	91	23	**25.3%**									
Age>=30	4	1	**25.0%**									
Indirect sex worker	153	16	**10.5%**	5.5 -15.3	**0.0%**		**20.2%**			**7.0%**	**6.4%**	**10.5%**
Police												
Age <30	48	1	**2.1%**									
Age30-49	114	7	**6.1%**									
Total(including 50-69)	166	9	**5.4%**	1.9 - 8.9	**0.0%**		**6.6%**	**5.2%**		**8.7%**	**8.5%**	**5.4%**
ANC PC= 3 sites	600	16	**2.7%**	1.3 - 3.9								
ANC RD= sites												
ANC (PC+RD)	600	16	**2.7%**	1.3 - 3.9			**3.0%**	**3.2%**	**0.8%**	**3.8%**	**4.5%**	**2.7%**
Age 15-29	408	14	**3.4%**									
Age 30-49	176	2	**1.1%**									
TB Patients Male	94	17	**18.1%**	10.1 - 26.0								
TB Patients Female	56	8	**14.3%**	4.8 - 23.7								
TB Patient Male + Female	150	25	**16.7%**	10.6 - 22.6			**11.3%**	**11.5%**	**15.4%**		**14.0%**	**16.7%**
Hospital Patients:	400	37	**9.3%**	6.3 - 12.1					**7.7%**	**11.3%**	**10.5%**	**9.3%**
Medical Male	86	5	**5.8%**	0.7 - 10.8								
Female	64	5	**7.8%**	1.0 - 14.5								
Surgical Male	134	17	**12.7%**	6.9 - 18.3								
Female	116	10	**8.6%**	3.4 - 13.8								
Blood donor	6307	186	**2.9%**	2.5 - 3.4								**2.9%**

* PC: Provincial Capital
* RD: Remaining District
* Confidencial interval only on total for each group no age specific

Table: 21 **Province Specific Surveillance Data**

Province: Prey Veng	HIV Prevalence in 2000					HIV Prevalence (%) (sample size)						
Target Group	*Sample Size*	*Number Positive*	*HIV Prevalence*	*95% CI*	*Percent Refusal*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
Direct Sex workers	149	26	17.4%	11.2 - 23.6	0.7%			29.7%		29.3%	7.3%	17.4%
Age <20	18	0	0.0%									
Age 20-29	120	22	18.3%									
Age>=30	11	4	0.0%									
Indirect sex worker	149	17	11.4%	6.2 - 16.5	0.0%					34.0%	31.0%	11.4%
Police												
Age <30	56	2	3.6%									
Age30-49	94	3	3.2%									
Total(including 50-69)	150	5	3.3%	0.4 - 6.2	0.0%			3.8%		6.0%	4.0%	3.3%
ANC PC= 2 sites	150	0	0.0%	-								
ANC RD= 2 sites	150	5	3.3%	0.4 - 6.2								
ANC (PC+RD)	300	5	1.7%	0.2 - 3.1				1.3%	4.8%	2.1%	2.1%	1.7%
Age 15-29	238	3	1.3%									
Age 30-49	57	2	3.5%									
TB Patients Male	166	1	0.6%	0 - 1.7								
TB Patients Female	136	1	0.7%	0 - 2.1								
TB Patient Male + Female	302	2	0.7%	0 - 1.5				0.0%	5.1%		8.0%	0.7%
Blood donor	161	1	0.6%	0.0 - 3.9								0.6%

* PC: Provincial Capital
* RD: Remaining District
* Confidencial interval only on total for each group no age specific

Province Specific Surveillance Data

Table: 22

Province: Pursat	HIV Prevalence in 2000					HIV Prevalence (%) (sample size)						
Target Group	*Sample Size*	*Number Positive*	*HIV Prevalence*	*95% CI*	*Percent Refusal*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
Direct Sex workers	70	41	58.6%	46.7 - 70.4	0.0%		44.2%	49.5%		64.1%	52.0%	58.6%
Age <20	10	3	30.0%									
Age 20-29	51	31	60.8%									
Age>=30	9	7	77.8%									
Indirect sex worker	75	8	10.7%	3.5 -17.8	20.3%		27.0%			28.0%	23.5%	10.7%
Police												
Age <30	33	0	0.0%									
Age30-49	259	14	5.4%									
Total(including 50-69)	303	14	4.6%	2.2 - 6.9	0.0%		8.2%	1.7%	13.9%	3.9%	4.0%	4.6%
ANC PC= 1 sites	200	7	3.5%	0.9 - 6.0								
ANC RD= 6 sites	200	4	2.0%	0.0 - 3.9								
ANC (PC+RD)	400	11	2.8%	1.1 - 4.3			2.2%	2.3%	4.3%	2.0%	2.0%	2.8%
Age 15-29	247	9	3.6%									
Age 30-49	142	2	1.4%									
TB Patients Male	45	8	17.8%	6.1 - 29.3								
TB Patients Female	50	4	8.0%	0.2 - 15.7								
TB Patient Male + Female	95	12	12.6%	5.8 - 19.4			10.0%		14.0%		14.1%	12.6%
Blood donor	606	2	0.3%	0.0 - 1.3								0.3%

* PC: Provincial Capital
* RD: Remaining District
* Confidencial interval only on total for each group no age specific

Table: 23

Province Specific Surveillance Data

Province: Rattanakiri	HIV Prevalence in 2000					HIV Prevalence (%) (sample size)						
Target Group	*Sample Size*	*Number Positive*	*HIV Prevalence*	*95% CI*	*Percent Refusal*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
Direct Sex workers	23	5	21.7%	3.5 - 39.1	0.0%		21.4%	35.0%	34.2%	21.2%	46.9%	21.7%
Age <20	6	1	16.7%									
Age 20-29	16	3	18.8%									
Age>=30	1	1	100.0%									
Indirect sex worker	40	12	30.0%	15.1 - 44.8	0.0%					23.3%	15.6%	30.0%
Police												
Age <30	15	0	0.0%									
Age30-49	77	2	2.6%									
Total(including 50-69)	96	2	2.1%	0 - 4.9	1.0%		3.9%	14.9%	0.9%		1.0%	2.1%
ANC PC= 1 sites	200	2	1.0%	0 - 2.3								
ANC RD= 3 sites	110	2	1.8%	0 - 4.3								
ANC (PC+RD)	310	4	1.3%	0.0 - 2.5				6.2%	2.5%	2.1%	1.1%	1.3%
Age 15-29	182	3	1.6%									
Age 30-49	124	1	0.8%									
TB Patients Male	11	0	0.0%	-								
TB Patients Female	7	0	0.0%	-								
TB Patient Male + Female	18	0	0.0%	-					0.0%			0.0%

* PC: Provincial Capital
* RD: Remaining District
* Confidencial interval only on total for each group no age specific

Table: 24 **Province Specific Surveillance Data**

Province: Siem Reap	HIV Prevalence in 2000					HIV Prevalence (%) (sample size)						
Target Group	*Sample Size*	*Number Positive*	*HIV Prevalence*	*95% CI*	*Percent Refusal*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
Direct Sex workers	150	43	28.7%	21.3 - 35.1	4.5%		35.1%	49.0%		38.0%	18.0%	28.7%
Age <20	43	9	20.9%									
Age 20-29	101	31	30.7%									
Age>=30	6	3	50.0%									
Indirect sex worker	150	30	20.0%	13.5 - 26.4	2.6%		19.6%			33.0%	23.3%	20.0%
Police												
Age <30	31	1	3.2%									
Age30-49	103	3	2.9%									
Total(including 50-69)	140	4	2.9%	0.0 - 5.6	4.1%		9.8%	10.0%		6.0%	9.3%	2.9%
ANC PC= 1 sites	150	13	8.7%	4.1 - 13.2								
ANC RD= 3 sites	150	4	2.7%	0.0 - 5.2								
ANC (PC+RD)	300	17	5.7%	3.0 - 8.2			4.0%	1.1%	4.4%	1.8%	4.7%	5.7%
Age 15-29	174	10	5.7%									
Age 30-49	109	7	6.4%									
TB Patients Male	64	4	6.3%	0.1 - 12.3								
TB Patients Female	86	0	0.0%	-								
TB Patient Male + Female	150	4	2.7%	0.0 - 5.2			0.5%	1.5%	5.0%		9.0%	2.7%
Blood donor	542	10	1.8%	0.9 - 3.4								1.8%

* PC: Provincial Capital
* RD: Remaining District
* Confidencial interval only on total for each group no age specific

Table: 25

Province Specific Surveillance Data

Province: Sihanouk Ville	HIV Prevalence in 2000					HIV Prevalence (%) (sample size)						
Target Group	*Sample Size*	*Number Positive*	*HIV Prevalence*	*95% CI*	*Percent Refusal*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
Direct Sex workers	150	33	**22.0%**	15.3 - 28.7	0.7%		**37.7%**	**51.5%**		**57.3%**	**42.0%**	22.0%
Age <20	19	2	**10.5%**									
Age 20-29	127	29	**22.8%**									
Age>=30	4	2	**50.0%**									
Indirect sex worker	150	15	**10.0%**	5.1 - 14.8	3.3%		**22.7%**			**24.0%**	**18.3%**	10.0%
Police												
Age <30	8	1	**12.5%**									
Age30-49	140	10	**7.1%**									
Total(including 50-69)	155	11	**7.1%**	3.0 - 11.1	1.7%		**21.2%**	**13.7%**		**11.8%**	**15.3%**	7.1%
ANC PC= 1 sites	150	7	**4.7%**	1.2 - 8.0								
ANC RD= 2 sites	107	3	**2.8%**	0 - 5.9								
ANC (PC+RD)	257	10	**3.9%**	1.5 - 6.2			**4.4%**	**2.1%**	**2.9%**	**3.8%**	**3.0%**	3.9%
Age 15-29	150	7	**4.7%**									
Age 30-49	97	3	**3.1%**									
TB Patients Male	36	7	**19.4%**	5.8 - 33.0								
TB Patients Female	40	1	**2.5%**	0 - 7.5								
TB Patient Male + Female	76	8	**10.5%**	3.4 - 17.5			**3.6%**				**18.8%**	10.5%
Blood donor	76	8	**10.5%**	4.6 - 19.7								10.5

* PC: Provincial Capital
* RD: Remaining District
* Confidencial interval only on total for each group no age specific

Table: 26 Province Specific Surveillance Data

Province: Stung Treng	HIV Prevalence in 1999				HIV Prevalence (%) (sample size)							
Target Group	*Sample Size*	*Number Positive*	*HIV Prevalence*	*95% CI*	*Percent Refusal*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
Direct Sex workers	50	19	38.0%	24.0 - 52.0	4.0%				22.6%	33.3%	29.1%	38.0%
Age <20	14	5	35.7%									
Age 20-29	32	13	40.6%									
Age>=30	4	1	25.0%									
Indirect sex worker	20	6	30.0%	7.9 - 52.0	13.0%					10.0%	0.0%	30.0%
Police												
Age <30	46	0	0.0%									
Age30-49	154	2	1.3%									
Total(including 50-69)	216	2	0.9%	0 - 2.2	18.0%			2.6%	0.0%	0.8%	0.0%	0.9%
ANC PC= 1 sites	99	0	0.0%	-								
ANC RD= 5 sites	172	3	1.7%	0 - 3.7								
ANC (PC+RD)	271	3	1.1%	0 - 2.3				0.8%	3.5%	0.3%	1.2%	1.1%
Age 15-29	178	3	1.7%									
Age 30-49	90	0	0.0%									
TB Patients Male	10	0	0.0%	-								
TB Patients Female	12	0	0.0%	-								
TB Patient Male + Female	22	0	0.0%	-					8.3%		2.9%	0.0%

* PC: Provincial Capital
* RD: Remaining District
* Confidencial interval only on total for each group no age specific

Table: 27

Province Specific Surveillance Data

Province: Svay Rieng	HIV Prevalence in 2000					HIV Prevalence (%) (sample size)						
Target Group	*Sample Size*	*Number Positive*	*HIV Prevalence*	*95% CI*	*Percent Refusal*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
Direct Sex workers	56	4	**7.1%**	0.2 - 14.1	**12.5%**			**36.2%**	**23.9%**	**25.0%**	**26.1%**	**7.1%**
Age <20	13	1	**7.7%**									
Age 20-29	40	43	**107.5%**									
Age>=30	3	0	**0.0%**									
Indirect sex worker	58	3	**5.2%**	0 - 11	**4.9%**					**17.5%**	**14.3%**	**5.2%**
Police												
Age <30	54	0	**0.0%**									
Age30-49	239	2	**0.8%**									
Total(including 50-69)	300	2	**0.7%**	0 - 1.5	**3.8%**			**0.0%**	**5.0%**	**0.7%**	**3.0%**	**0.7%**
ANC PC= 1 sites	200	2	**1.0%**	0 - 2.3								
ANC RD= 8 sites	199	3	**1.5%**	0 - 3.2								
ANC (PC+RD)	399	5	**1.3%**	0.1 - 2.3				**92.0%**	**0.9%**	**2.5%**	**2.6%**	**1.3%**
Age 15-29	220	4	**1.8%**									
Age 30-49	174	1	**0.6%**									
TB Patients Male	114	4	**3.5%**	0.0 - 6.9								
TB Patients Female	130	8	**6.2%**	1.9 - 10.3								
TB Patient Male + Female	244	12	**4.9%**	2.1 - 7.6				**0.0%**	**2.6%**		**3.5%**	**4.9%**
Blood donor	422	0	**0.0%**	0 - 1.1								**0.0%**

* PC: Provincial Capital
* RD: Remaining District
* Confidencial interval only on total for each group no age specific

Table: 28 Province Specific Surveillance Data

Province: Takeo	HIV Prevalence in 2000					HIV Prevalence (%) (sample size)						
Target Group	*Sample Size*	*Number Positive*	*HIV Prevalence*	*95% CI*	*Percent Refusal*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
Direct Sex workers	96	11	**11.5%**	4.9 - 17.1	**1.0%**			**24.6%**	**24.1%**	**41.4%**	**32.5%**	**11.5%**
Age <20	37	5	**13.5%**									
Age 20-29	59	6	**10.2%**									
Age>=30	0	-	-									
Indirect sex worker	62	12	**19.4%**	9.2 - 29.4	**4.6%**					**6.7%**	**26.4%**	**19.4%**
Police												
Age <30	35	1	**2.9%**									
Age30-49	249	7	**2.8%**									
Total(including 50-69)	299	8	**2.7%**	0.8 - 4.5	**4.8%**			**2.3%**		**3.3%**	**1.3%**	**2.7%**
TB Patients Male	122	8	**6.6%**	2.1 - 11.0								
TB Patients Female	178	7	**3.9%**	1.0 - 6.8								
TB Patient Male + Female	300	15	**5.0%**	2.5 - 7.4				**3.0%**	**2.5%**		**4.3%**	**5.0%**
Blood donor	668	4	**0.6%**	0.2 - 1.6								**0.6%**

* PC: Provincial Capital
* RD: Remaining District
* Confidencial interval only on total for each group no age specific

Table: 29

Province Specific Surveillance Data

Province: Preah Vihear	HIV Prevalence in 2000					HIV Prevalence (%) (sample size)						
Target Group	*Sample Size*	*Number Positive*	*HIV Prevalence*	*95% CI*	*Percent Refusal*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
Direct Sex workers	46	6	13.0%	2.1 - 23.2	0.0%							13.0%
Age <20	12	1	8.3%									
Age 20-29	34	5	14.7%									
Age>=30	0	-	-									
Indirect sex worker	39	3	7.7%	0 - 16.4	15.2%							7.7%
Police												
Age <30	82	1	1.2%									
Age30-49	185	2	1.1%									
Total(including 50-69)	277	3	1.1%	0 - 2.3	6.7%							1.1%
ANC PC= sites	167	4	2.4%	0.0 - 4.7								
ANC RD= sites	129	0	0.0%	-								1.4%
ANC (PC+RD)	296	4	1.4%	0.0 - 2.6								
Age 15-29	177	3	1.7%									
Age 30-49	115	1	0.9%									
TB Patients Male	23	2	8.7%	0 - 21.1								8.7%
TB Patients Female	17	0	0.0%	-								
TB Patient Male + Female	40	2	5.0%	0 - 12.0								

* PC: Provincial Capital
* RD: Remaining District
* Confidencial interval only on total for each group no age specific

Figure1. HIV seroprevalence among Sentinel Sub-populations in Cambodia, 2000

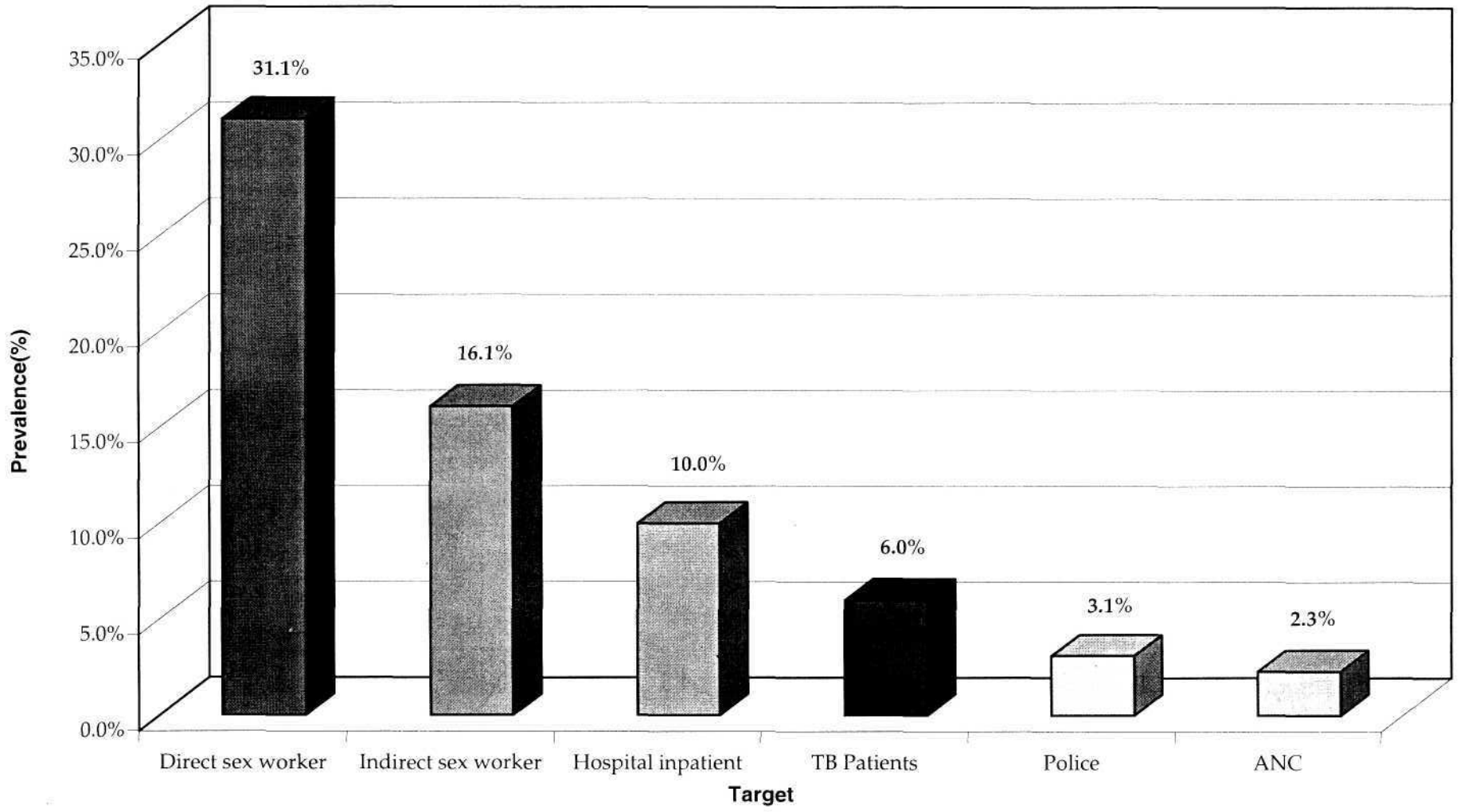


Figure2 Trend HIV seroprevalece among antenatal women in Cambodia

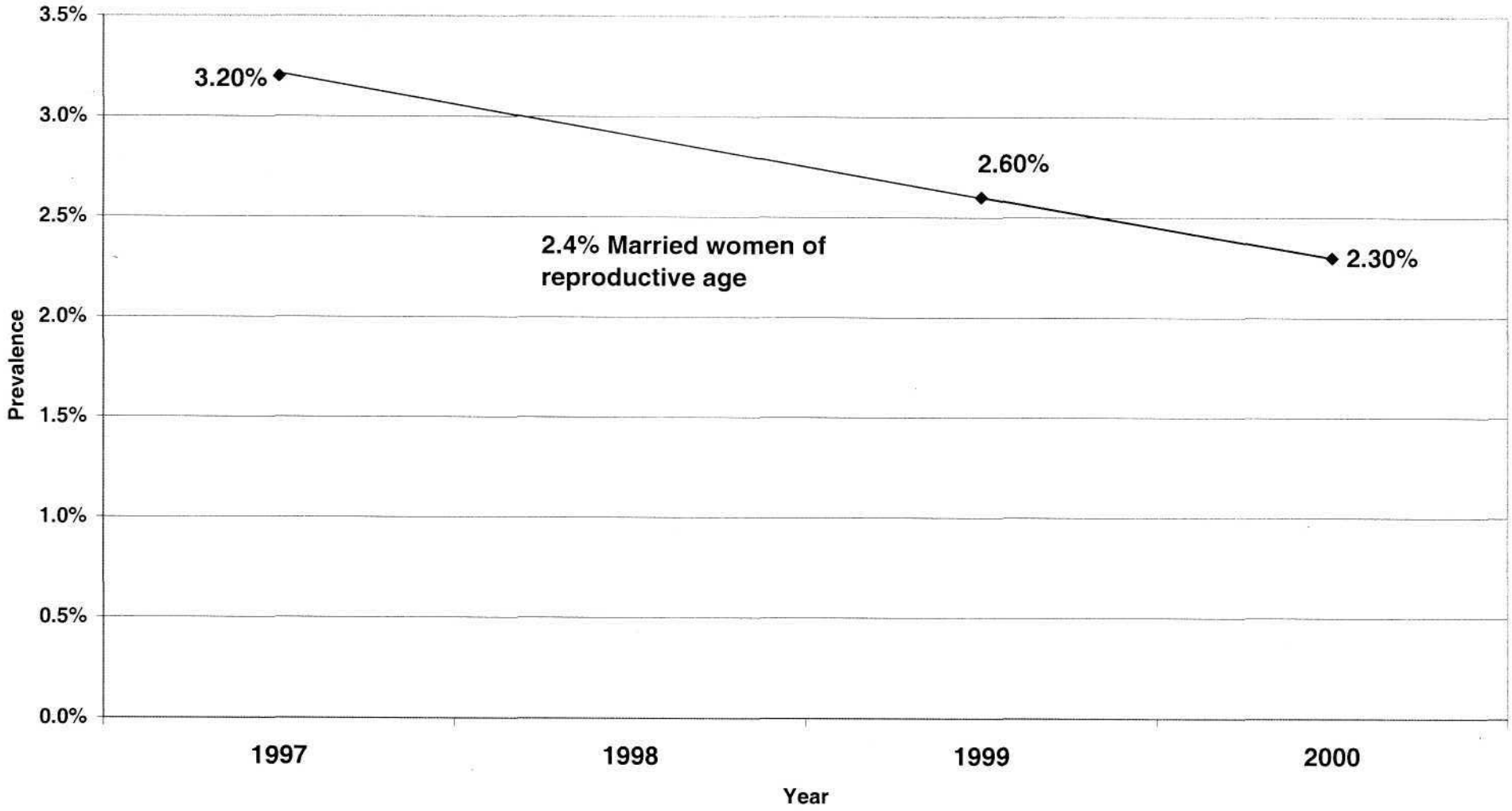


Figure 3. The Trend of HIV Seroprevalence among Direct Sex Workers by age groups (in 19 provinces)

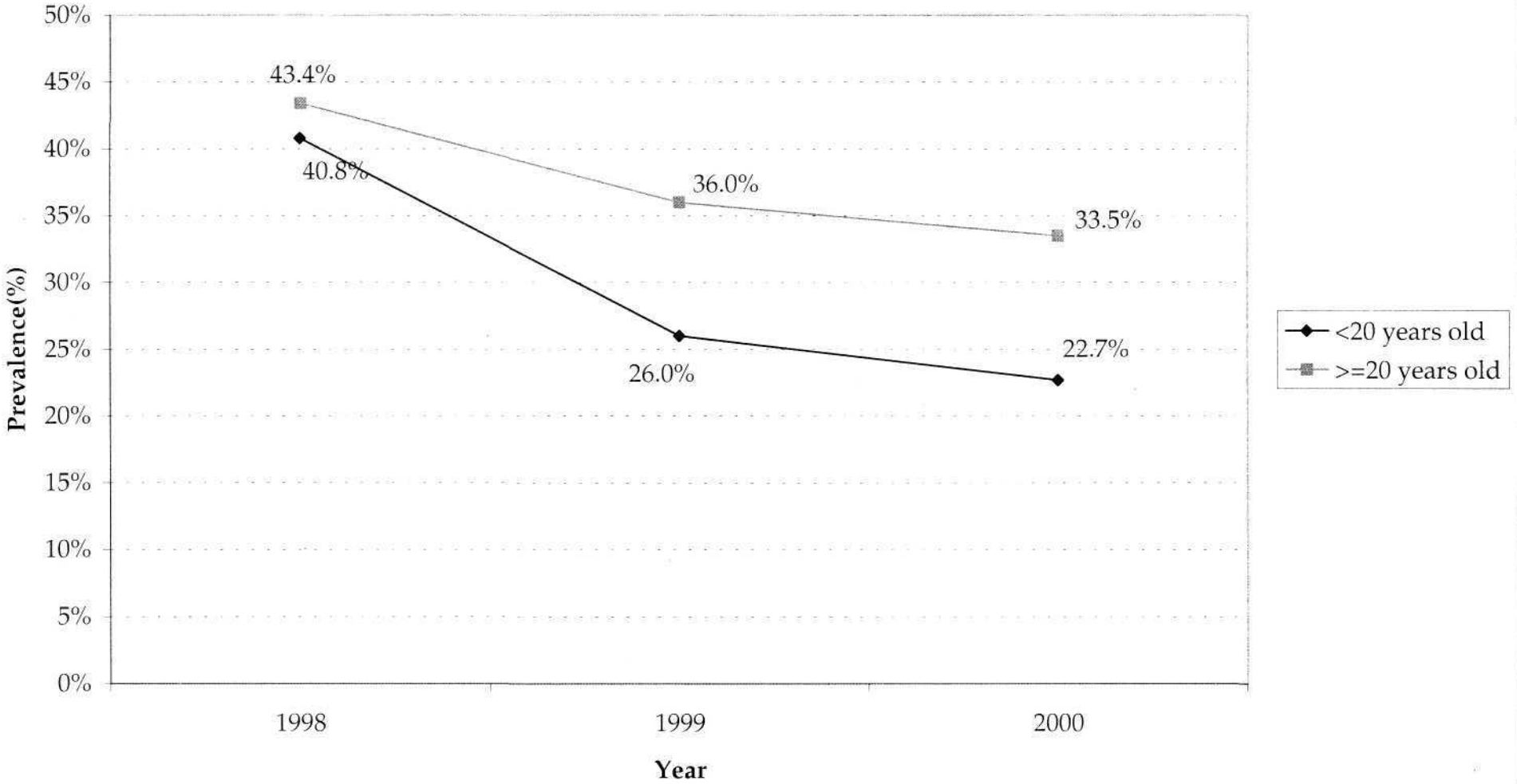


Figure 4. The Trend of HIV Seroprevalence among Policemen in urban areas by age groups

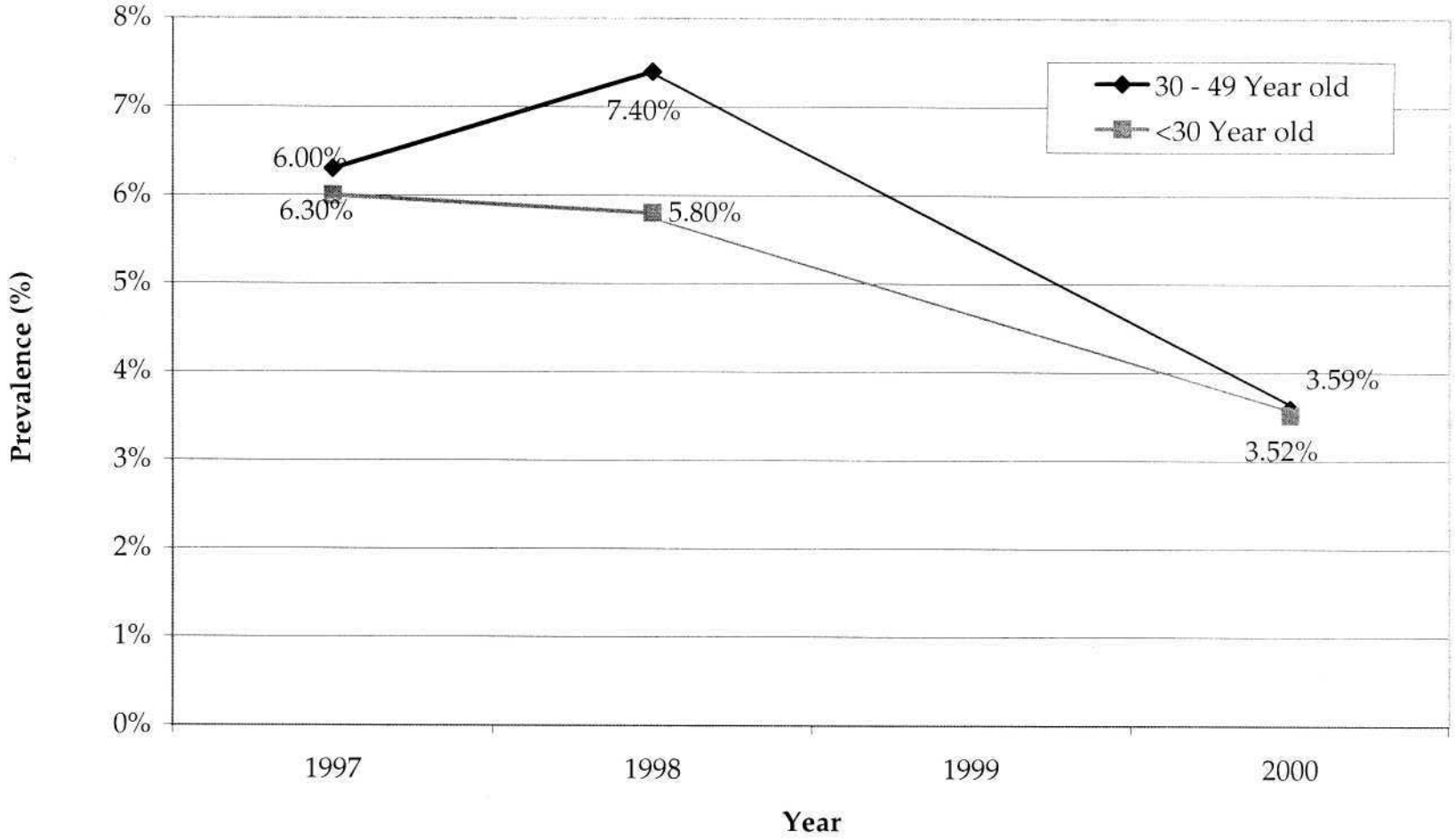


Figure 5. The Trend of HIV Seroprevalence among Beer girls

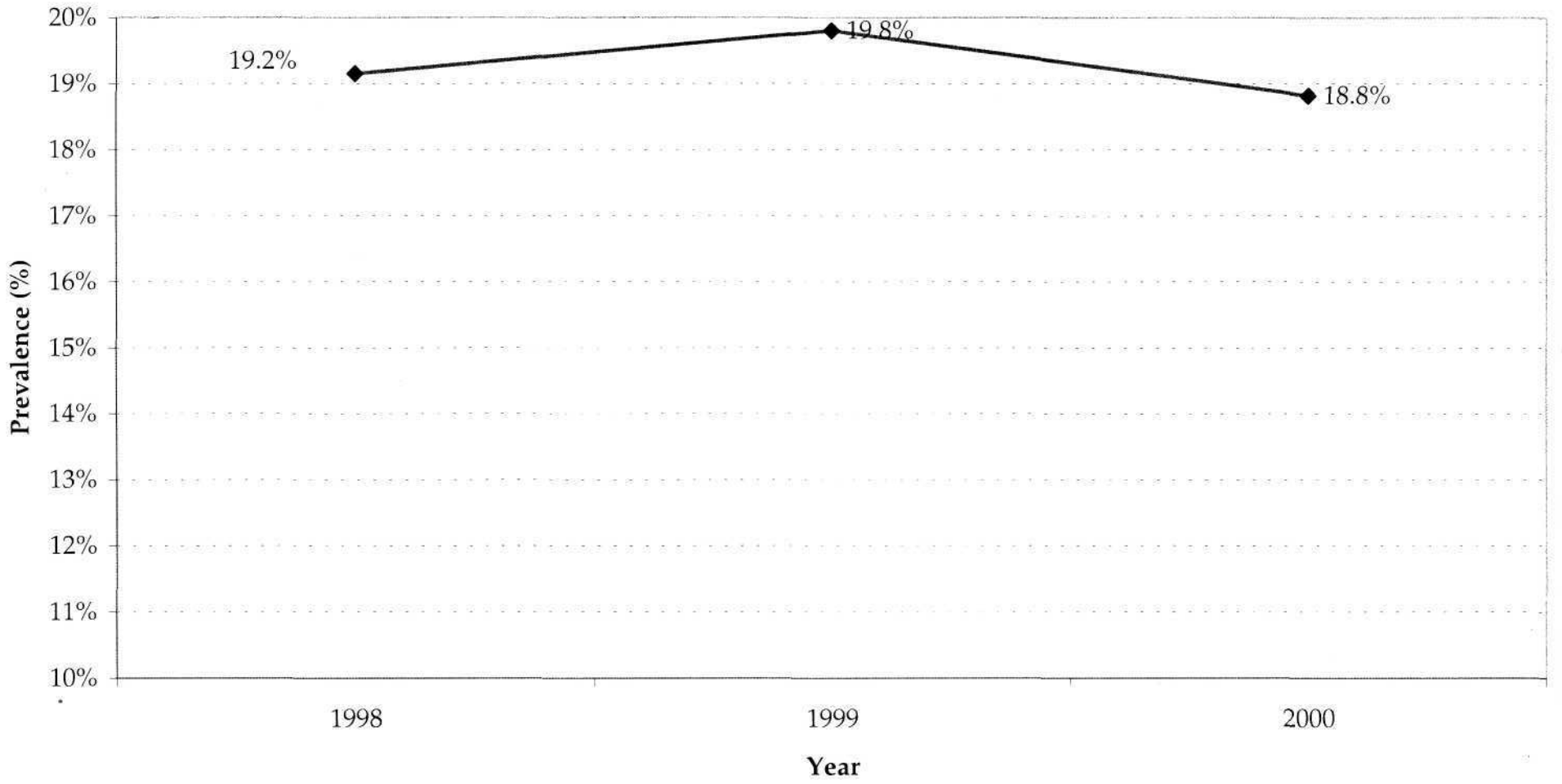


Figure 6. The Trend of HIV Seroprevalence among TB patients

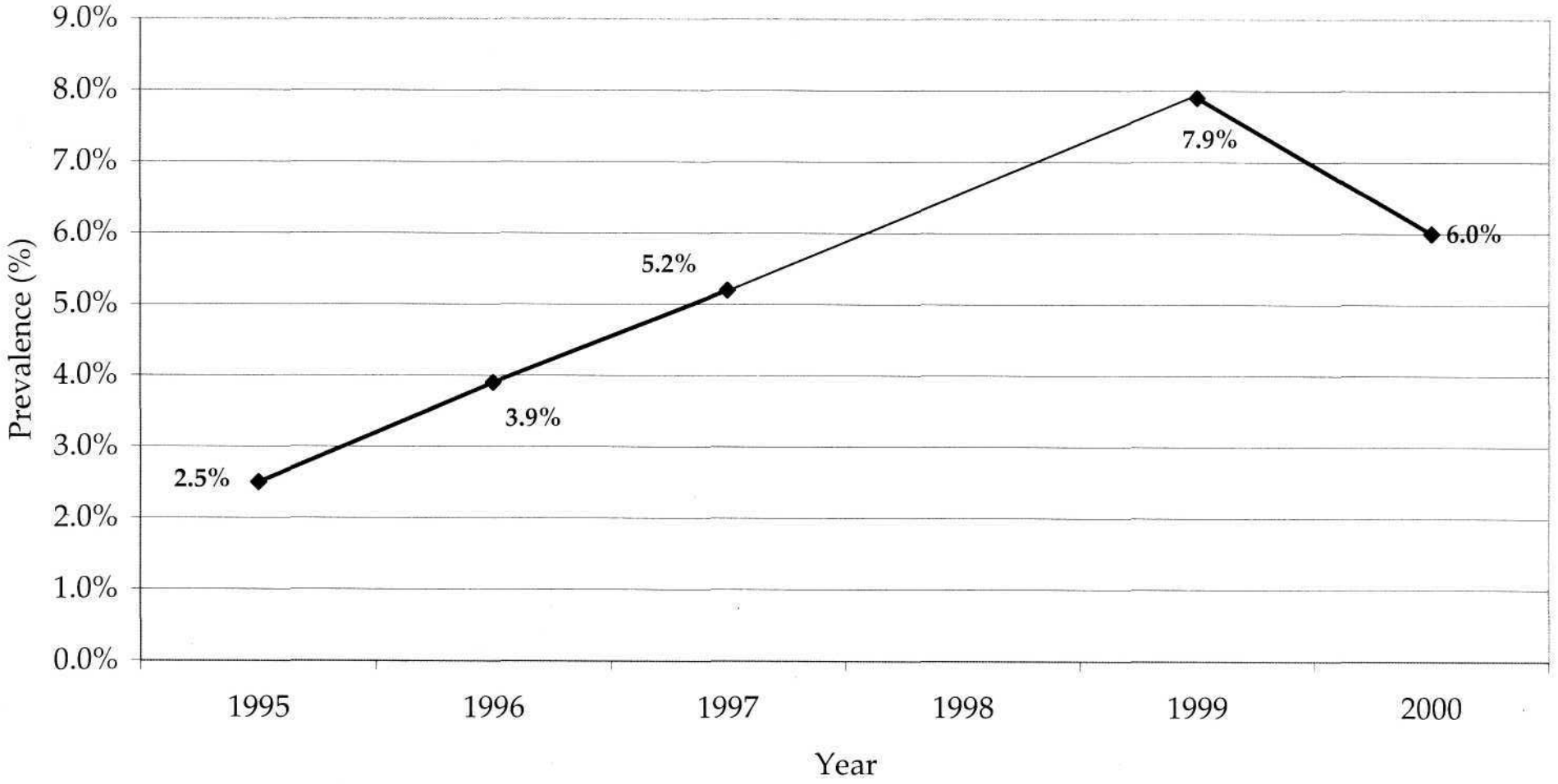


Figure 7. The Trend HIV Seroprevalence among blood donors 1991 - 2000 in Cambodia

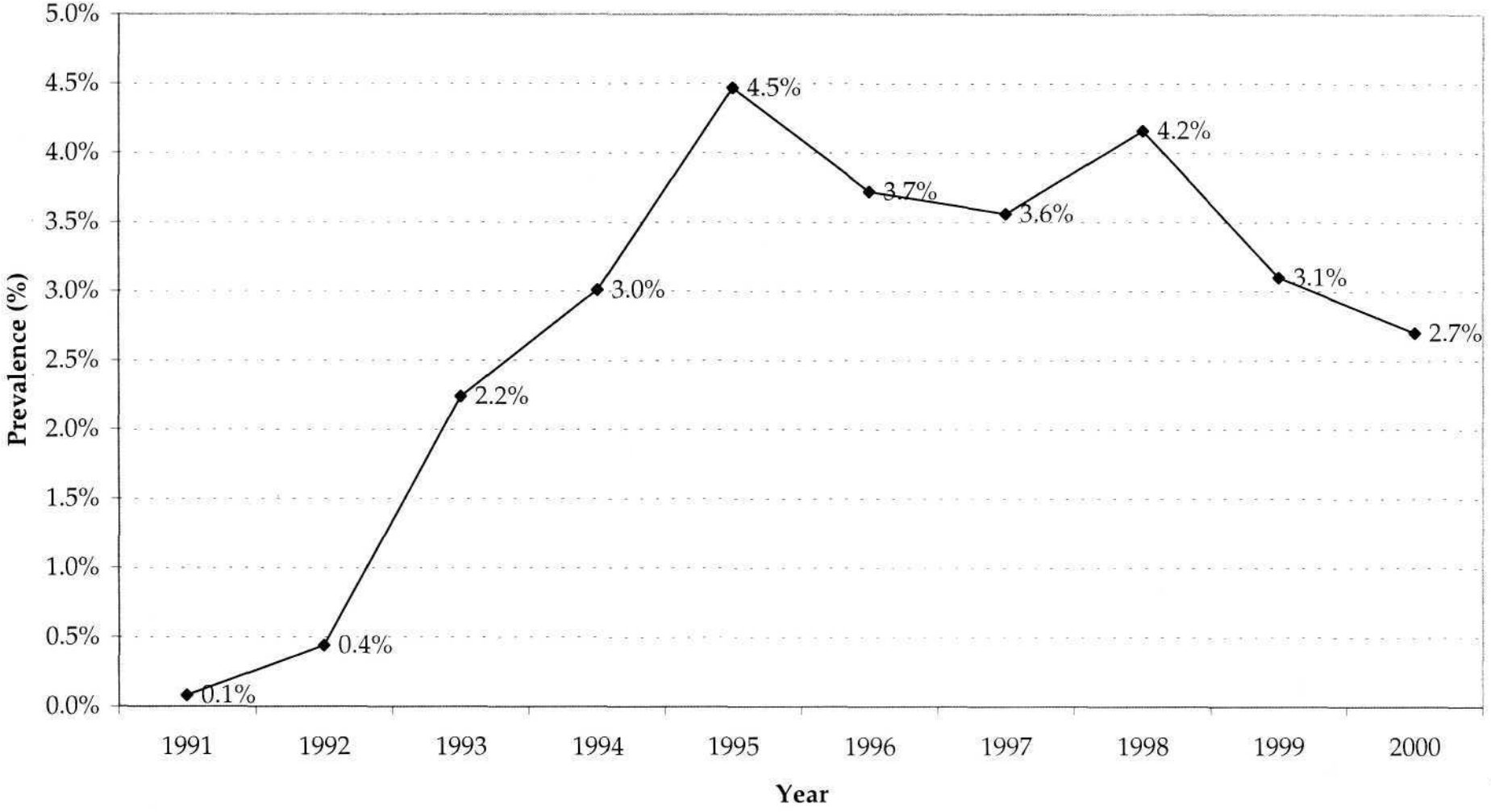


Figure8: Estimated Number of Adults Age 15-49 Living with HIV in Cambodia

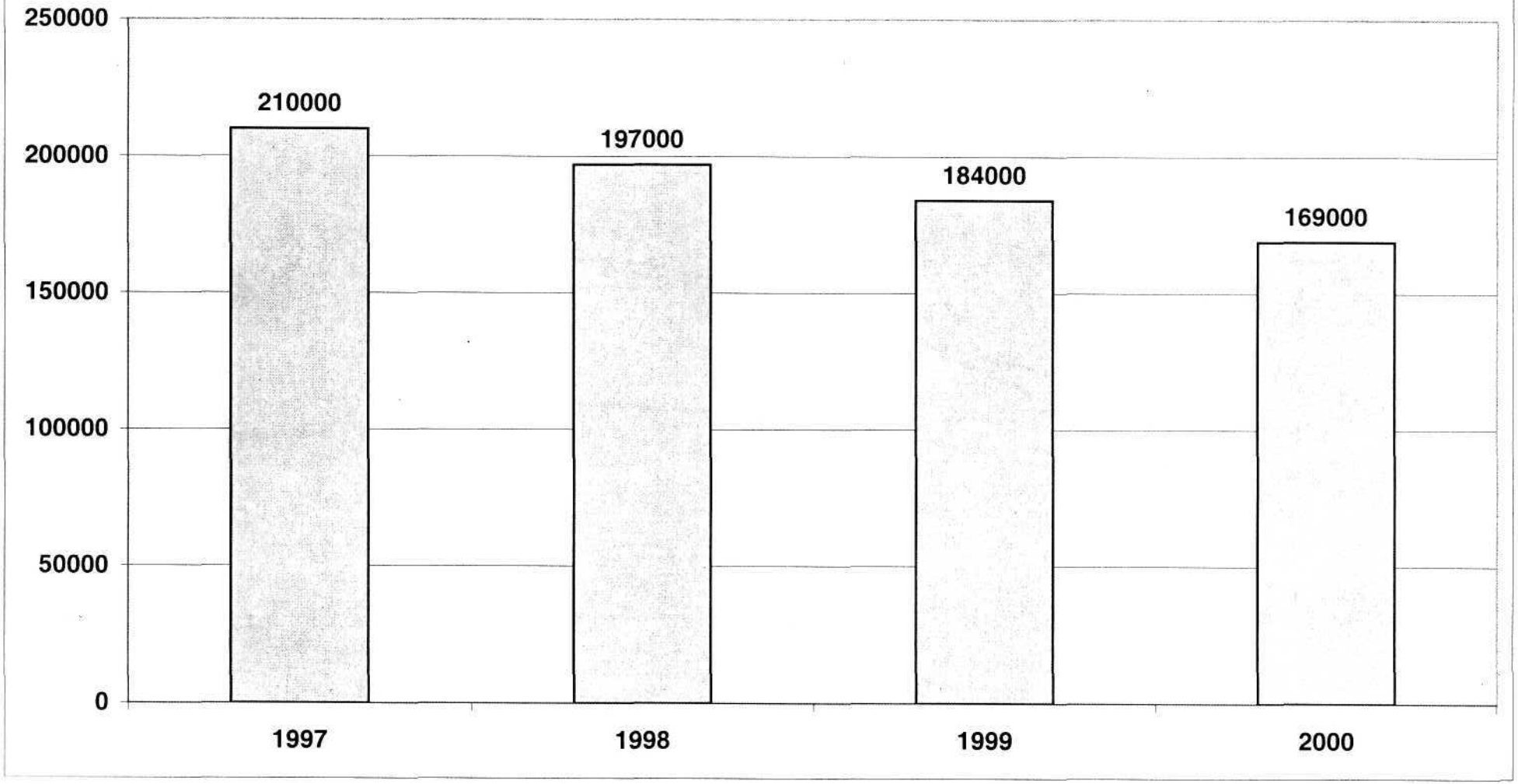
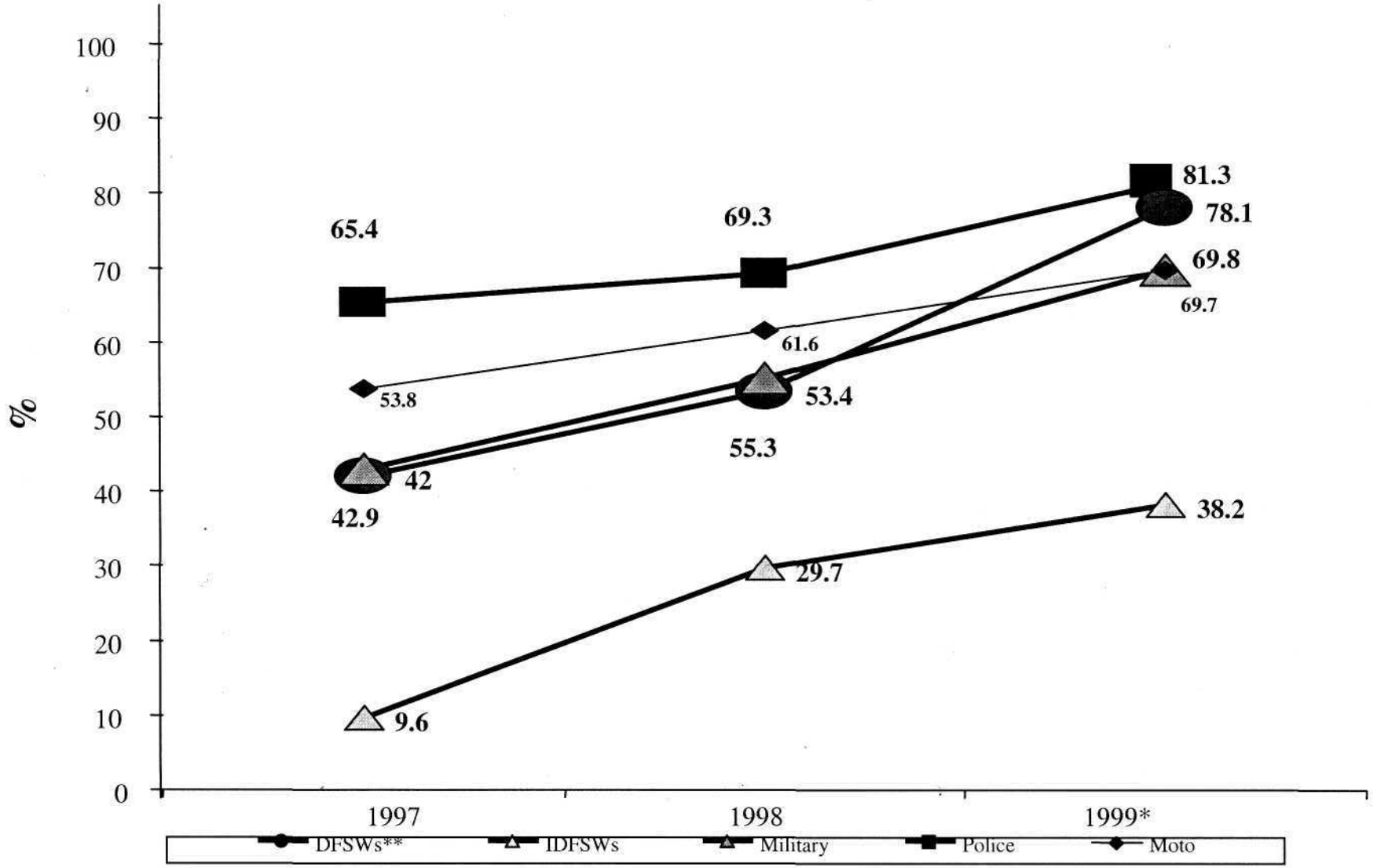


Figure 9: Consistent condom use with commercial sex partners: BSS Sentinel Groups 1997-1999



* In 1999 always condom use specified "in last 3 months".

** For DFSWs in 1999 condom use was specified "in past week". For IDFSws, in 1999 condom use was specified "in 3 months".

Figure 10: Percent of men in general population visiting FSWs in the last year

With brothel**	12.7%
With non brothel**	7.4%

**May also have had sex with brothel sex workers

**Non brothel include hotel, street, massage, dancing bar, beer, karaoke girl and women at festival

Figure 11: Commercial Sex Use In Past Year
By Marital Status: BSS 2000

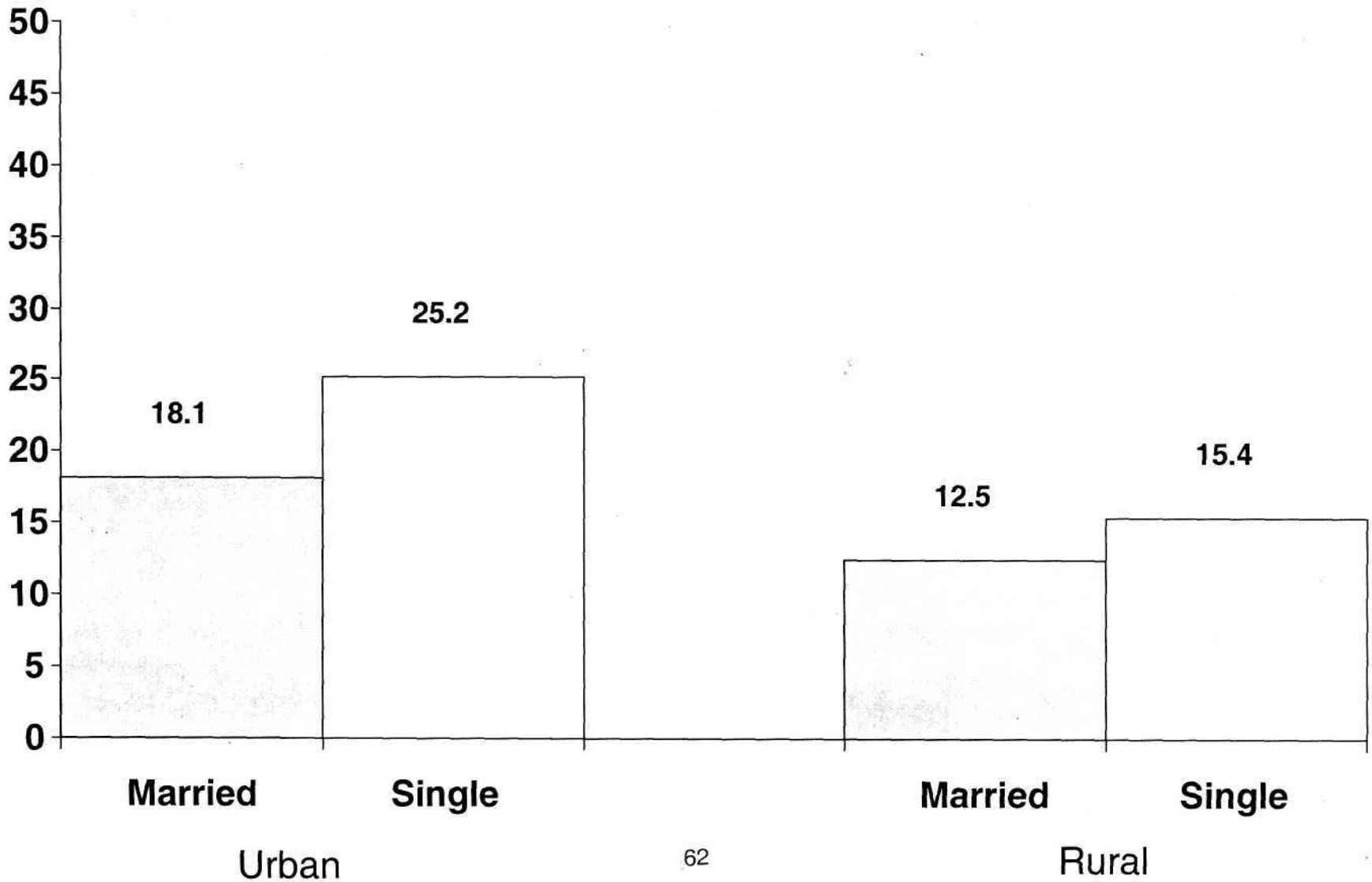


Figure 12: Percent of Men Always Using Condom during Commercial Sex In Past Year by Marital Status: BSS IV