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National Estimates of Adult HIV Infection, Indonesia 2002

Workshop Report



MINISTRY OF HEALTH OF THE REPUBLIC OF INDONESIA
DIRECTORATE GENERAL OF COMMUNICABLE DISEASE CONTROL
AND ENVIRONMENTAL HEALTH

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I. Title 1. HIV INFECTION

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Directorate General of Communicable Disease Control and
Environmental Health
2003



FOREWORD

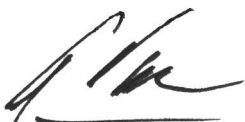
The devastating impact of AIDS virus has shaken our awareness to do more to prevent its larger spread. Many lessons have been learned to do effective prevention, however, we still face many difficulties to do focused interventions. The Indonesian Ministry of Health has routinely conducted HIV sero-surveys targeted for those who have high risk behaviours, but sero-survey results cannot show the real magnitude of HIV/AIDS. Moreover, some targets of population are difficult to reach as well as many societies still stigmatize HIV/AIDS cases. In addition, it is impossible to conduct a census for those targets.

Recognizing the above limitations, one method to obtain an accurate information on number of HIV cases is to do an estimation by using available data. Therefore, in 2002 the Indonesian Ministry of Health, with ASA/FHI/USAID conducted a National Estimates of Adult HIV Infection. Those estimates were a great step to estimate the magnitude of burden diseases in the future. The results for conducting reliable estimates could be used into further development of policies and programs related to HIV/AIDS problems.

I am grateful to those who participated individually and institutionally into the estimation meetings, wrote and published this report. Besides, the way the estimation conducted was appreciated with a Global Best Practice. Moreover, the method of this process has been imitated by other countries.

Jakarta, March 31, 2003

The Ministry of Health of Indonesia



Dr. Achmad Sujudi

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1 BACKGROUND

Up to 1988, all HIV sero-survey data in Indonesia indicated that HIV prevalence was still very low. Dr. James Chin once estimated a number of HIV cases in Indonesia based on HIV/AIDS data which had been available since 1988. He estimated that there were between 20,000 – 50,000 people with HIV/AIDS (ODHA). During 1993 to 1994, Dr. Linnan, a consultant of USAID conducted a number of ODHA by using IWGAIDS based on data of 1994. After a long discussion, a team of experts divided HIV cases in Indonesia with three categories. The first one was a low category with an estimation of 20,000 – 50,000 ODHA. The second was a mid category with of 300,000 – 500,000 ODHA. The last one was a high category with of 2 – 2.5 ODHA.

However, UNAIDS/WHO estimated that there were a total of 26,000 ODHA by the end of 1998. Given a limited fund by 1999, the above number increased double by the end of 2000. This estimation was approved by the Ministry of Health. This number was published publicly in June 2000 as an AIDS Global Report. In 2001, the Ministry of Health with WHO reestimated the target groups. This re-estimation revealed that there were a total of 80,000 – 120,000 ODHA. This number came from an estimation of 62,500 among injecting drug users, of 30,000 among female Sex Workers and their clients, and 11,520 among general population (15 – 49 years old).

2 PROCESS

To obtain a clear estimation of HIV, there were some meetings conducted. The first preparation meeting on 19 August 2002 discussed a very rough method of estimation. The participants were the working group of Surveillance (see Annex 1). Then, a Technical Meeting of Estimates on HIV Vulnerable Population was conducted on 27 – 28 August 2002 in Acacia Hotel attended by the governmental sectors and NGO's (see Annex 2). Each participant brought data related to HIV. Those participants were divided into some groups that discussed the right methods in estimating related to rough data and given HIV vulnerable subpopulations.

There were 2 meetings which were conducted for CDC Heads in the provincial health office throughout the country and for National and Provincial AIDS Committee. With a limited time in those meetings, the participants happily gave their inputs for the accomplishment of estimation method.

The third meetings was conducted on 11 September 2002 for updating data of estimation. The list of the participants is on Annex 3. The last meeting was conducted on 12 – 14 September 2002 attended by the participants from the previous meetings, Indonesian experts on HIV/AIDS, and the International experts such as from WHO-SEARO, UNAIDS Geneva, UN Theme Group, UNICEF, UNFPA, USAID, AusAID. Ease-West Centre Hawaii University. Here, a more accurate number of HIV vulnerable was resulted as well as an agreement on a total of HIV vulnerable became one big input for national HIV/AIDS policies.

3 METHODS

Overall Methodology

Indonesia is a country of 13,000 islands spanning three time zones and many different cultures. Since sexual and drug-taking behaviours are influenced by culture, economy, religion and geography, the HIV epidemic is as diverse as the nation itself. In addition, the country is in the process of decentralizing decision-making and service delivery, including the provision of HIV prevention and care services. It was therefore thought that an attempt should be made to develop province-specific estimates.

A spreadsheet was developed with separate estimates sheets for each province, one national estimates sheet, and one sheet with the national population structure. A list of subpopulations likely to be exposed to HIV was developed (see below), and was entered on to each provincial estimate sheet and the national sheet. In addition, the urban and rural population for each province recorded in the 2000 census was entered into the provincial sheets. Using a standard population growth rate

and the national population structure, the urban and rural populations aged 15-49 (the peak ages for exposure to HIV) were calculated on each provincial sheet.

The size of each subpopulation potentially exposed to HIV was estimated separately for each province, and the proportion of each exposure category that is female was also included. High and low values were estimated for each group, using available data. Details are given below for each population. Once population sizes were estimated for each province, the likely HIV prevalence for each group in each province was entered into the provincial sheets. These values were based on data from the HIV surveillance system or other studies as available.

Once all the population sizes and HIV prevalence estimates were entered, provincial totals of people living were calculated by simply applying the relevant prevalence figure to the population size estimate. This was done in four combinations, to reflect the range of uncertainty of the estimates, as shown below.

Estimate 1	Estimate 2	Estimate 3	Estimate
Low population estimate X low HIV prevalence estimate	Low population estimate X high HIV prevalence estimate	High population estimate X low HIV prevalence estimate	High population estimate X high HIV prevalence estimate

The mean of the four estimates was also calculated for each population.

For each province, the sum of the number of people living with HIV in each exposure category was taken as the estimated total number of people living with HIV in that province. The mean of the four estimated values was applied to the total population aged 15-49 to give a provincial estimate of overall HIV prevalence.

The national estimates of people living with HIV in each exposure category are the sum of the provincial estimates.

- Female sex workers
- Clients of female sex workers
- Wives of clients of female sex workers
- Male sex workers
- Regular female partners of male sex workers
- Transvestite sex workers (waria)
- Clients of transvestite sex workers
- Regular male partners of transvestite sex workers
- Men who have sex with men
- Prisoners
- Street children

Choice of Exposure Groups

Previous estimates of HIV infection in made Indonesia have included only female Sex Workers, their clients and injecting drug users as specific populations potentially exposed to HIV, with a remnant estimate for the general population. International agencies have also made estimates that include STI patients.

In lively discussion with a large variety of government and non-government agencies, it was recognized that Indonesia's diversity harbors a far greater variety of subpopulations exposed to HIV through their behaviour or that of their sex partners. Ultimately, it was decided to make separate estimates for each of the following groups:

- Injecting drug users
- Non-injecting partners of injecting drug users

Clearly, this is a far more diverse set of exposure groups than is commonly included in HIV estimation exercises. The decision to include all of these groups was made in part because of the rich availability of data, but in larger part in order to draw attention to the diversity of the epidemic in Indonesia. It was hoped that by specifying all the exposure categories, policy-makers at the provincial and national level will become more aware that the epidemic is not confined only to one or two highly marginalised populations.

The remainder of this document describes the estimation process for each of these exposure categories, notes some general points of methodology and details the limitations of the estimates.

4 INJECTING DRUGS USERS

Why Are They Included ?

Injecting drug use appears to be a growing phenomenon in urban Indonesia, and is increasingly recorded in non-urban areas also. HIV prevalence among injecting drug users has been recorded at extremely high levels in Jakarta, West Java, East Java and Bali. This population is thought to be severely impacted by the HIV epidemic in Indonesia.

Two methods were used to estimate the number of drug users by province, and a third method was used to arrive at a national estimate, to confirm the order of magnitude of the provincial methods.

Data Sources

Different data were used for different methods. Principal data sources were as follows:

- Department of Social Affairs (Depsos) registry of drug users by province, 2002
- Department of Defence and Security data on imprisonment for drug offences
- National Narcotics Board data on drug seizure
- Narcotics Board data on drug users in treatment in Jakarta

- Treatment centre data on visits, individual patients, proportion injecting, relapse (mostly from RSKO hospital, Jakarta)
- Treatment centre data on injection frequency and sexual behaviour (mostly from Yayasan Hatihati, Bogor)
- Behavioural surveillance data on proportion of drug users in treatment (Jakarta)
- Department of Health (Depkes) HIV surveillance data

IDU Estimation Method 1: Multiplier Using Drug User Registry

Depsos at the district level maintains registries of drug users. These are reported to the provincial level, and the aggregate data are reported to the national level, but they are widely accepted as being incomplete, and do not distinguish between injectors and non-injectors. However as injection spreads ever more widely throughout Indonesia, the Depsos registry does give an overall picture of the likely order of magnitude of injection in various provinces.

It was decided that if an accurate estimate of drug users could be developed for a single province, this could be used to develop a “multiplier”, which could then be applied to Depsos data for the other provinces to get a more accurate estimate of the number of injectors.

The province with the greatest amount of data available is Jakarta. The Narcotics Board reports treatment data for a large number of treatment centres in Jakarta. However, they report treatment visits rather than individual patients, and since relapse rates are typically high, this can lead to a lot of duplication.

For RSKO hospital, the largest treatment centre in Jakarta, data are available for both treatment visits and individual patients. These data give an indication of the degree of duplication, and the Narcotics Board data can be adjusted accordingly. However, RSKO does mostly short-term detoxification, whereas many of the other centres are residential centres where a patient stays for months at a time. The likelihood of being treated twice in a given year is likely to be higher for patients attending RSKO than in other, longer-stay treatment centres. Because of this, the RSKO treatment visit data were “deflated” by 46 percent to reflect actual individual visits, while other centres were “deflated” by only 20 percent.

These calculations were performed on 1999 data, to give an estimate of drug users in treatment in Jakarta in that year. Data on the proportion of drug users who are injectors was available for that year for RSKO, and was 57 percent. This was assumed to apply to other treatment centres too, and was applied to the total number of individual drug users in treatment in Jakarta to give an estimate of 3,465 IDUs in treatment in the city in 1999.

A survey of behaviour in a community-based sample of 400 drug injectors in Jakarta was undertaken by University of Indonesia in 2000. These injectors were asked whether they had been in treatment in the past year. Only 9.1 percent of them said they had been in treatment. This means that for every one in treatment, there were more than 9 who were not in treatment. If this multiplier (1/0.091, or 10.99) is applied to the estimated number of IDUs in treatment, we get an estimated 38,077 IDUs in the Jakarta area.

However Jakarta is a large city, with sprawling metropolitan surrounding which do not fall under Jakarta area (this urban surround is generally referred to as “Botabek”, for Bogor, Tangerang and Bekasi). RSKO records show that 27 percent of patients come not from Jakarta but from the “Botabek” area, which falls mostly in West Java province. This percentage was therefore deducted from the Jakarta estimate and reassigned to the West Java estimate, giving a total estimate of injection drug users for the province of Jakarta of 27,796.

This compares with a Depsos registry figure for Jakarta of 3,217. In other words, by the more detailed estimation process, we get an estimate of 8.6 times as many drug injectors in reality as there are total drug users listed by Depsos. Depsos has more personnel in Jakarta than anywhere else, but there are also far more drug users to cover in this dense urban area. It was thought by Depsos and IDU NGO workers that registries would be only slightly more complete in other areas, so a multiplier of 8 was chosen for other provinces.

This multiplier was applied to all provinces where Depsos data are available, with the exception of those where more complete data based on population listing or mapping

were available. In 2002, only Bali fell in to this category. No Depsos data were available for “new” provinces, so provincial estimates for the relevant “old” provinces were reassigned between the old and new provinces according to the new distribution of population. The “excess” from the original greater Jakarta estimate was reassigned to West Java.

Overall, this method produced an estimate of 167,000 injecting drug users nationwide.

IDU Estimation Method 2: Estimate Based On Population Distribution

A second method was also used to estimate the number of injection drug users, independent of the Depsos data. This method calculated a prevalence of drug injection for each province. It was based on input from people

working in the area of drug addiction (harm reduction workers, treatment centre staff, surveillance mapping staff, academics, police and narcotics forces), and on data on population distribution.

All available sources of data point to the same thing: 90 percent of drug injectors in Indonesia in 2002 are men, and almost all are aged between 15 and 30.

The male population between 15 and 30 was therefore used as the denominator for the prevalence based estimate. People working in the field of drugs were asked to consider their experience and all records available to them to come up with estimates for high, medium and low prevalence of injecting drug use in urban populations. They were also asked to estimate the relationship between injection prevalence in urban and rural areas for each of those categories. After lively discussion, the following consensus was reached:

	High	Medium	Low
Urban	1/50 (2%)	1/200 (0,5%)	1/1000 (0,1%)
Rural	1/150 (0,75%)	1/1000 (0,1%)	1/5000 (0,02%)

The ratio of rural to urban injection was thought to be higher in high prevalence injection areas than in medium and low prevalence areas because the high prevalence areas tend to be in regions with good infrastructure and competitive drug dealing industries, both of which push drugs more easily into rural areas.

In order to decide which provinces should be assigned to which category, data on imprisonments for drug-related causes by

The ratio of rural to urban injection was thought to be higher in high prevalence injection areas than in medium and low prevalence areas because the high prevalence areas tend to be in regions with good infrastructure and competitive drug dealing industries, both of which push drugs more easily into rural areas.

In order to decide which provinces should be assigned to which category, data on imprisonments for drug-related causes

by province were used. The number of incarcerations in a province was divided by the number of young males in that province to get a “drug crime index”. Provinces were then ranked according to that index. The top third were ranked as high, the next third as medium and the last third as low.¹

The population of men between 15 and 30 was calculated for urban and rural areas of each province, based on census data. The appropriate “prevalence” of injecting drug use shown in the table was then applied to that population, according to whether the province was categorized as a high, medium or low drug-use province. This produced a total for male drug users. 10 percent was added to this figure in each province to account for the 10 percent of drug injectors who are women. This estimation method produced an estimate of 152,500 IDUs nationwide.

IDU Estimation Method 3: Multiplier Using Drug Seizure Data

The two independent methods above yielded very similar estimates. However both estimates were somewhat below the expectations of the very participants who supplied the data that produced them. A third method, yielding only a national estimate, was therefore tried in order to test whether these first two methods were in the right ball-park.

The third estimate used drug seizure data supplied by the Narcotics Board.

The highest heroin seizure figure in Indonesia in recent years was 27 kilos, seized in 1999. Indonesia has no official estimate of what proportion of drugs are seized every year. The United States’ Drug Enforcement Agency, DEA, estimates that it captures about three percent of drugs coming in to the US in a given year. Participants from the law enforcement authorities and Narcotics Board were of the opinion that, with its lower levels of technology and training, Indonesia definitely captured a lower proportion than the United States. But they pointed out, too, that the sophistication of the smuggling operations in Indonesia was far lower, so the discrepancy may not be overwhelming. They settled on an estimate of a sixth of US levels, or 0.5 percent of all drugs coming in to Indonesia seized in a year.

Applied to heroin seizures for 1999, this would mean that there were actually 5,400 tons of heroin in the country, or 5.4 million grammes. Data from drug injectors in treatment suggest that they inject an average of 0.1 grammes a day, or 36.5 grammes a year. If we divide the available heroin in a year by the annual consumption per user, we get an estimate of 148,000 IDUs in Indonesia in 1999 – very much in the same range as the other two estimates.

The Estimates In The Spreadsheets

The first two methods were independent of one another, rather than designed to give high and low estimates. In the provincial spreadsheet, whichever was the higher of the

¹ This ranking was applied to the “old” provinces, because data on imprisonment was not available for the “new” provinces. New provinces were assigned the same rank as the provinces they were formerly part of.

two was assigned as the “high” estimate, while the other was assigned as the “low” estimate. Because of this, the high-low range in the national estimates sheet (124,000 to 196,000) is wider than the range given by the two different methods above.

Limitation

Needless to say, each of the three methods have their limitations. In the first case, data on treatment in Jakarta is incomplete. The actual number of people in treatment was probably higher than that estimated here, using the best data available at the time of the estimates. A higher number in treatment with the same multiplier would give a higher overall estimate for Jakarta, and that would in turn give a higher multiplier for the Depsos data, which is then applied to the rest of the country. On the other hand, most sources felt the “injection prevalence” of one young man in 50 to be quite robust for Jakarta, and this completely independent method gave an estimate which was within just 500 individuals -- or two percent -- of the more detailed estimate. This is an impressive degree of agreement.

The greatest weakness of the second method is that the “injection prevalence” figures for urban and rural areas in the high, medium and low categories are not based on measured data, but on a consensus among people who work in the drug field (albeit sometimes at opposing ends of the field).

In the third method, there is no sound data on which to base the estimate of the proportion of drugs that are seized. If the estimate proportion overstates reality, it will produce an underestimate of drug injectors. If it is an understatement, it will result in an overestimate of the number of injectors.

Overall, however, the remarkable similarity of the estimates produced by three completely independent methods should increase confidence that the estimates are in the correct range.

HIV Prevalence Estimates

HIV prevalence estimates among injecting drug users are available for Jakarta and West Java (2002 data), Bali (2001 data) and Surabaya (2000 data). For other areas, no local data are available, and a range derived from knowledge about infrastructure, mobility and networking, anecdotal information and best guesses was applied.

5 NON-INJECTING PARTNERS OF DRUG INJECTORS

Why Are They Included?

It is sometimes alleged that IDUs are not sexually active, or that they only have sex with other drug injectors, thus contributing little to a wider sexual epidemic. In the case of Indonesia, this is demonstrably not true. Drug injection is a relatively new phenomenon. Few people have been using drugs for long enough seriously to affect their libido. Indeed available data suggest that on average, drug injectors are more sexually active than young people of the same age who do not inject drugs. In addition, nine out of 10 are men. This means that only a small proportion is likely to be having sex with other drug users.

Because of the very high HIV prevalence among drug injectors, the sexual partners of IDUs are highly likely to be exposed to HIV. They may well have other sexual partners either simultaneously or in the future, and are an

important population to consider in looking at the current and future state of the epidemic.

Data Sources, Methods and Limitation

No primary information is available on this population, and it is calculated from the proportion of IDUs who report being sexually active. Data provided by drug injectors in treatment at Yayasan Hati-hati in Bogor show that some 76 percent of injectors report being currently sexually active. Data from Yayasan Hati-hati and other treatment centres shows that sexual activity varies very widely, with some people having sex only occasionally while other have sex more frequently with a regular partner. A significant proportion also have multiple partners. With only a few data sources from the same broad geographic area, it is not possible to capture the complexity of these partnerships in the provincial or national estimates. For the purposes of the estimates, it is therefore

assumed that on average those drug users who are sexually active (76 percent) have one regular partner with whom they have sex with some frequency.

The estimates do not distinguish between sexes. In reality, female injectors are more likely than male injectors to be sexually active, but they are also more likely to have sex with another injector. In this case, their male partners are covered in the IDU estimates rather than in the “non-injecting partners” estimates. This will be adjusted for in the 2003 estimates when more behavioural data for IDU will be available.

HIV Prevalence Estimates

No HIV data are available for this group. Because of the extraordinarily rapid recent growth in prevalence among injecting drug users, and the high likelihood of reinfection even among those IDUs already infected with HIV, it is expected that infectiousness among IDUs in Indonesia would be rather high. For this reason, it was estimated that one in three of the HIV positive IDUs with a regular partner has passed HIV on to that sex partner.

FEMALE SEX WORKERS

Why Are They Included?

In Indonesia, as in many Asian countries, an active commercial sex industry provides the main opportunity for sex outside marriage for a substantial proportion of men. Because of high partner turnover and high levels of other STIs, this population is undoubtedly highly exposed to HIV, and may in turn expose their clients.

Data Sources, Methods and Limitation

The principle data source for female sex workers in Depsos listings of sex workers by province. In addition, some areas – mostly those in which NGOs are active or behavioural surveillance has recently been conducted -- have precise counts and complete mappings of the sex industry. The Department of Tourism also maintains registers of women working in the entertainment industry, in locations such as massage parlours, bars and hostess clubs which often provide sexual services.

The data resources used for these listings were as follows:

- Depsos listing of direct Sex Workers by province, 2002
- Department of tourism listing of women in entertainment industry sites, Jakarta
- Yayasan Kerti Praja census of sex workers in the Denpasar and Sanur, Bali

Sex Workers Estimation Method

The Department of Social Affairs maintains a registry of sex workers. However this registry covers only direct sex workers working in brothels and sex work complexes. These tend to be those at the lower end of the social scale. Higher-end direct sex workers, who work out of private houses, hotels etc., are not covered in the registers. Nor are indirect sex workers – women who work as hostesses in night clubs, as masseuses in massage parlours etc. It is therefore necessary to adjust the Depsos registries to account for these unregistered sex workers.

The most complete information of all was available for Bali, where the NGO Yayasan Kerti Praja has recently conducted a complete census of sex workers of all types. YKP listed 1062 direct sex workers, of whom 671 fell into

the “low class” direct sex workers category which is usually covered by the Depsos listing. This suggests that Depsos estimates should be inflated by 58 percent to reach a fuller estimate of direct Sex Workers.

In addition, it is necessary to add indirect sex workers. In the Bali census, 235 indirect sex workers were counted in addition to the direct sex workers listed above. This suggests that number of direct, lower-class sex workers listed by Depsos should be inflated by a further 35 percent to account for indirect sex workers.

Information on indirect sex workers is also available for Jakarta. In Jakarta, the Department of Tourism keeps a register of “entertainment” establishments, and a count of the number of women working in these establishments. For the city (province) of Jakarta, the department lists 17,000 women working in bars, nightclubs, karaoke parlours, massage parlours and saunas. These women are not all sex workers. During the national HIV estimates process, senior tourism officials in the province estimated that 80 percent of hostesses, masseuse etc. in the city sold sexual services. The proportion was in line with findings during behavioural surveillance of sex workers in these organizations in North Jakarta. This would give an estimate of 13,600 “indirect” sex workers in Jakarta. The number compares to a Depsos listing of 9,300 low-class direct sex workers – in other words, there are close to one and a half times as many indirect as direct sex workers in the city.

The multipliers for indirect sex workers compared with Depsos-listed sex workers clearly vary very widely from place to place. These two calculated examples give a range of 0.35 to 1.46 times as many indirect as listed sex workers. Because the range was so large, it was decided to use them to contribute, respectively, to the

low and high estimates for the total number of Sex Workers in each province.

The sex workers estimates were thus derived as follows:

Low estimate: Depsos listed number, plus estimated high end direct sex workers, plus indirect sex workers estimated using Bali multiplier

High estimate: Depsos listed number, plus estimated high end direct sex workers, plus indirect sex workers estimated using Jakarta multiplier

No Depsos data were available for “new” provinces, so provincial estimates for the relevant “old” provinces were reassigned between the old and new provinces according to the new distribution of population.

This estimation method gave a low of 193,000 and a high of 273,000 Sex Workers nationwide.

Limitation

The Depsos data published in 2002 are little changed from 1998 data, suggesting that they may not have been updated very recently. These estimates rely on applying multipliers derived from just one or two sites to data for 26 provinces, despite a demonstrably wide diversity in the structure of the sex industry in different locations in Jakarta.

At the time the estimates were made, detailed mapping of the sex industry was being undertaken in association with behavioural surveillance in some cities and transit areas in 10 provinces. It is hoped that these data will provide multipliers that are more locally appropriate for future rounds of estimation. Spreadsheets that allow for regional variation in the multipliers used are already available.

HIV Prevalence Estimates

HIV data were taken where available from the national HIV surveillance system data. When these estimates were made in October 2002, no 2002 surveillance round had yet taken place, so data were in some cases outdated. In areas where specific studies were available, such as Bali, the most recent surveillance data severely under represented the actual current situation. On the other hand, surveillance data reported to P2M are sometimes based on a very small number of samples, leading to unreasonably high prevalence figures. For this reason, the range of HIV prevalence estimates for Sex Workers entered in the provincial spreadsheets does not exactly match that in the national surveillance data base.

7 CLIENTS OF FEMALE SEX WORKERS

Why Are They Included?

Every successful sex workers served a large number of clients. In countries such as Indonesia with rapidly growing HIV epidemics and active sex industries, clients of sex workers are usually the single largest group potentially directly exposed to HIV through their own risky behaviour.

Data Sources, Methods and Limitation

The most common data source for clients of sex workers is a survey of men in the general population. In a survey (most often a household survey), men are asked whether they have bought sex from a sex workers in a given time period (usually the last year). The proportion who say they have is applied to the adult male population represented by the survey to get a total estimate of the number of sex workers.

A nationwide household survey of this type was planned in Indonesia for late 2002, but no such data were available at the time the 2002 HIV

estimates were made. In the absence of such a survey, the number of clients was estimated from the number of sex workers. Data from behavioural surveillance among both sex workers and clients were central to this method. The data used were as follows:

- Provincial estimates of the number of female sex workers, using methods detailed above
- Behavioural surveillance data among direct and indirect female sex workers in eight provinces (three from 2002, others from 2000)
- Behavioural surveillance data among clients of sex workers in eight provinces (three from 2002, others from 2000)

Clients of Female Sex Workers Estimation method

A separate spreadsheet was set up with the sex workers estimates for each of Indonesia's 30 provinces. For each province, data were entered on the average number of clients per sex workers per week (reported by

sex workers in BSS) and the average number of visits to sex workers in a year (reported by clients in BSS). Data were also included on the number of weeks worked by a sex workers in a year. Where no data were available for a specific province, data for the nearest culturally similar province (or an aggregate of culturally similar provinces) were used.

The estimated number of sex workers (the average of the high and low estimates described above) was multiplied by the average number of sex workers in a week and the average number of weeks worked in a year to get the total number of sex transactions in a province in a year.² Since the number of sex transactions overall should be the same for sex workers and clients, the total annual number of transactions was divided by the average number of *transactions* (i.e. visits to sex workers, rather than individual sex workers visited) reported by clients of sex workers per year.

This method gave a low of 6.9 million and a high of 9.6 million estimated clients of sex workers a year in Indonesia.

Limitations

Since they are based on the estimates of female sex workers, these estimates suffer from all the same limitations as those estimates. In addition, the number of visits to sex workers per client per year is rather low in Indonesia compared with other Asian countries. If the average client in fact visits more frequently, then the estimated number of clients would in fact be lower. Attempts are currently being made to

improve these data by adding a shorter time reference period to male BSS questionnaires.

The basis for these estimates was the estimated total number of sex workers of all categories. The average number of clients overall was applied to this total. However the average number of clients, which is a key piece of information in this estimation method, differs between direct and indirect sex workers. More precise estimates could be made by applying the appropriate average to each sex workers category.

On a national level, the client estimates suggest that between 12 and 17 percent of Indonesian men visit sex workers annually. This figure appears high, although by no means out of the ranges commonly recorded elsewhere in Southeast Asia. It is at a provincial level that the major limitations of the client estimates become apparent. Indonesia's population is highly mobile, and clients of sex workers are more likely than most to be in mobile occupations and to buy sex in locations where they are not resident. Men from around the country will buy sex in areas with large sex industries, such as the capital Jakarta. The way these estimates are made, all these clients are entered into the Jakarta provincial spreadsheet, making it appear as though xx percent of adult men in Jakarta are clients of sex workers. These figures do indeed reflect the magnitude of the sex industry in Jakarta, but they give a distorted picture of the behaviour of residents of the city, inasmuch as they suggest that all the clients of sex workers of Jakarta are residents of Jakarta. In an era of decentralization, it is important to

²No adjustment was made for menstruation time, because this was already discounted in the cross-sectional estimates of the number of clients per week derived from BSS, which included all sex workers regardless of menstruation status.

be aware of the political sensitivities that such inevitable distortions may arouse.

HIV Prevalence Estimates

Groups representing male clients of sex workers are occasionally included in HIV surveillance activities. Some provinces have reported data from truck drivers and sailors, for example. However, little of this is recent.

The exception is a recent study of sex workers and sailors in the province of Bali. In this study, HIV among sex workers was recorded at seven percent, while among sailors it was 0.7 percent. This rate was for all sailors, regardless of whether they reported commercial sex. Since those who buy sex are more likely to be exposed to HIV than those who don't, it probably understates HIV prevalence in clients. However given that these were the only recent data available, they were used to estimate HIV prevalence among clients as one tenth of HIV prevalence among sex workers. Given the frequency of reported sexual contacts, this equates to a transmission probability of around one in 200, which is reasonable in view of the level of improperly treated STIs in both the sex workers and the client populations.

8 REGULAR PARTNERS OF CLIENTS OF FEMALE SEX WORKERS

Why Are They Included?

Very few countries specifically include the regular partners of female sex workers in their national HIV estimates, because they do not technically constitute a “high risk group”. They prefer to use female STI clinic attendees or some “catchall” general population figure to cover this group.

The Indonesian estimates are based not on risk behaviour, but on potential exposure to HIV. The wives of men who buy sex are potentially exposed to HIV not through their own risk behaviour but through that of their husbands. Including them as a separate group in the estimates emphasizes that even at this relatively early stage, the epidemic in Indonesia is not confined to “high risk” individuals.

Data Sources

There are no specific data available from regular partners of clients of sex workers. However behavioural surveillance among male groups (as described above) does provide information on what proportion of men who buy sex from sex workers are also married or have live-in partners. The men captured in these surveys are the clients of low-class sex workers, and do not reflect clients of indirect sex workers.

Regular Partners of Clients: Estimation Methods

On the sex workers and client spreadsheets described above, data were entered about what proportion of clients were married or had live-in partners, to provide provincial estimates of the number of regular partners potentially exposed.

The men included in the BSS reflect only the clients of the lower class sex workers, who are mostly direct sex workers. The proportions married in each provincial BSS were applied to these clients. Where no BSS data were available for a province, data from the nearest similar province or an aggregate of nearby similar provinces were used. No data were available for the marital status of the clients of upmarket, indirect sex workers. These women report significantly higher charges than direct sex workers. Men who can pay these higher rates are more likely to be well-established economically and socially, and therefore more likely to be married. A higher estimate for proportions married was therefore used in estimating the regular partners of clients of indirect Sex Workers potentially exposed to HIV.

This method gave a low of 4.9 million and a high of 7.3 million wives and live-in girlfriends of clients of sex workers potentially exposed to HIV infection in Indonesia each year.

However, infected men are having sex repeatedly with the same wife (often not the case with Sex Workers and clients), and male to female transmission is more efficient than in the other direction. HIV prevalence in this population was therefore set at one tenth of HIV prevalence in the client population.

Limitations

Because these estimates are based on the client estimates, they suffer from the same weaknesses. In addition, they reflect only the wives or live-in partners of men who buy sex, not other regular or casual partners, who may also be exposed to HIV.

HIV Prevalence Estimates

No data are available for this population. While STIs in clients are the same, STIs in regular partners will be lower than in sex workers, so one might expect a lower transmission probability than with sex workers.

9 TRANSVESTITES

Why Are They Included?

Transvestite Sex Workers are a traditional, and culturally accepted, part of the commercial sex scene throughout Indonesia. These males sell oral and anal sexual services to a wide variety of men, most of whom classify themselves as heterosexual.

Not all waria (transvestites) are Sex Workers, but a substantial proportion engage in an activity known as “mejeng”, which involves seeking sex partners in locations (usually roadsides or parks) known to be waria hangouts.

Many waria have anal sex with a large number of partners, and condom use remains relatively low, increasingly the likelihood of exposure to HIV in this group.

Data Sources

There are a number of data sources for waria. Social Affairs Ministry has a listing of waria. It does not distinguish between those who go “mejeng” and those who don’t, but

comparison with mapping data shows that the majority of waria listed are likely to be those, including Sex Workers, who do look for partners in public places.

Waria organizations exist in many cities, and most keep an active list of members. Many also provide services to waria who sell sex, and therefore have good estimates of how many waria engage in high risk sex.

BSS among waria, accompanied by a detailed mapping and giving data on risk behaviour, is available for Jakarta, Surabaya and Batam for 2002, and for Bali in 2000.

BSS among mobile male groups likely to be clients of female Sex Workers also asks questions about sex with waria in the last year.

Waria Estimation Method 1: Mapping and Listing

Waria and MSM organizations Srikandi and Gaya Nusantara provided data on

population sizes in several provinces. Where these were available, they were entered into provincial spreadsheets directly.

Social Affairs Ministry data were available for a few additional provinces. These were also entered into the spreadsheets.

Waria Estimation Method 2: Extrapolation From Client Data

Where no waria data were available, the number of waria was extrapolated from the number of clients. This method is similar to the method of estimating male clients of female sex workers, except that it works in reverse.

As mentioned, BSS data among males were available for some areas. From these data it was possible to get an idea of what proportion of clients of male sex workers in a given province bought anal sex services from waria. This proportion was applied to the overall estimated number of waria to get an estimated number of anal clients of waria. This was used for the low estimate. Waria report, however, that they also have clients who “specialize” in waria, and who do not also have sex with female sex workers. This would increase the overall number of clients. For the high estimate, a proportion was therefore added to reflect “waria-only” clients. Since no data were available, it was assumed these were between a third and half as many as have sex with both female and waria sex workers.

No data on the frequency of visits to waria for anal or other sexual services were available, so a guesstimate was made. Men who were clients of both female and waria sex workers were assumed to buy anal sex from

waria half as often as they visited female sex workers. Waria group Srikandi reported that the “waria only” group usually bought sex from waria on a far more regular basis, often weekly. This group was therefore assigned a higher average number of visits. A weighted average of the two numbers was taken to get an overall average number of times a client buys anal sex from any waria in a year. This, multiplied by the estimated number of clients, gives an average number of anal sex transactions with waria per year.

BSS data on the average number of anal clients per week were available for waria in Jakarta at the time the estimates were made: 2.5 anal clients per week. Srikandi reports that most waria work year-round, but take two two-week breaks per year. In other words, they go “mejang” 48 weeks a year, averaging 120 anal sex transactions with clients a year.

The number of sex transactions estimated for clients (high and low) were therefore divided by 120 to get high and low estimates for the number of waria providing these services.

Waria Estimates In The National Estimates Spreadsheet

Estimates in the national estimates spreadsheets were chosen as follows:

The first choice was estimates provided directly from listings, registrations and counts by Srikandi and Gaya Nusantara. Where these were not available, Depsos data were considered the preferred second option. Only if no data were available from waria organizations or Depsos was the second estimation method used.

Overall these methods gave a low estimate of 7,800 and a high estimate of 14,700 waria actively engaged in “mejeng” in Indonesia in 2002.

Limitations

While the first method is relatively robust (data provided by the waria organizations equate very well with mapping in many urban areas), the second method is weak. It is not known to what extent the male groups included in BSS reflect the likely clients of waria. Several other important pieces of information, such as the number of transactions per client per year, were unavailable and had to be guesstimated.

HIV Prevalence Estimates

Waria have occasionally been included in national surveillance in some cities, but these data are typically not recent. The most reliable recent information comes from a random survey of waria in Jakarta, undertaken in mid 2002. This recorded an HIV prevalence of 21.7 percent.

It is likely that Jakarta is among the highest prevalence areas for waria. HIV prevalence estimates in other areas were made using information from waria organizations about the extent to which a waria population in a province was linked to those of other provinces (though mobility of waria or clients), and in function of HIV prevalence in other groups in the province.

10 MALE CLIENTS OF WARIA SEX WORKERS

Why Are They Included?

HIV prevalence is very high among waria. Official thinking in the past has been that this group is somehow “ring fenced”. However behavioural data show that waria do not typically have sex with one another. This means that high rates of infection must have been passed on by their clients. And qualitative research and limited BSS results indicate that their clients are frequently heterosexual men who are married and have other female partners.

Data Sources

The data sources for male clients of waria estimates are the same as the data sources for waria estimates.

Clients of Waria Estimation Method 1: Derived From Waria Estimates

Where estimates of waria under Method 1 above were available, the estimates for clients were derived in the same way as estimates for clients of female Sex Workers. The number of anal transactions reported per waria per week was multiplied by the number of weeks worked, and the estimated number of waria. This gave an estimated total number of anal transactions per year. This number was divided by the estimated average number of times a single client buys anal sex from a waria in a year to arrive at the estimated number of clients.

Clients of Waria Estimation Method 2: Derived From BSS Data

Where direct estimates of waria numbers were not available, the estimated

number of clients as derived before the estimated number of waria, as described in Method 2 above.

Overall these two methods resulted in a low estimate of 173,000 clients of waria and a high estimate of 340,000 clients of waria nationwide in 2002.

Limitation

These estimates suffer from the same limitations as the waria estimates. In addition, because many men who are clients of female sex workers are also clients of waria, there is a possibility of double counting. In other words, men may be included in the HIV estimates as clients of waria, then included again as clients of waria.

HIV Prevalence

No HIV data are available for clients of waria. Because anal sex carries a relatively high risk for HIV transmission and because STIs in the waria population are exceptionally high, it is expected that men who frequent waria have relatively high rates of HIV infection also. The HIV prevalence rate for this population is therefore set at one fifth of the HIV prevalence among waria.

11 REGULAR PARTNERS OF WARIA

Why Are They Included?

Waria participants in the estimation process felt that it was important to recognize that while many waria sell sex or actively seek sex partners in public places, a substantial proportion of those also have regular partners (whom they generally refer to as “husbands”). Because anal sex with these partners is common and HIV prevalence in the waria community high, it is highly likely that many of these regular partners may be exposed to HIV.

Data Sources

At the time of the estimates, behavioural data among waria were available only for Jakarta. BSS questionnaires included questions about live-in partners.

Regular Partners of Waria, Estimation Method

To estimate the number of regular partners of waria, the estimated number of waria in each province was multiplied by the percentage of waria surveyed in mejeng (hangout) locations in Jakarta who reported having a live-in partner. This led to an estimate of between 2,100 and 4,000 regular partners of waria nationwide.

Limitations

Besides being based on the waria estimates and therefore sharing the limitations of those estimates, these estimates were based on data from a single survey, which was applied nationwide. In the future, behavioural surveillance from other sites will also be available, which will allow for regional variations in the proportion of waria “married” to be reflected in the estimates.

HIV Prevalence Estimates

Most waria with regular partners report regular anal sex with those partners, and qualitative data suggest these relationships are often rather long-standing. The very high level of STIs among waria will also contribute to a high rate of HIV transmission. HIV among regular partners of waria is therefore estimated to be half the level that it is among waria themselves.

12 MALE SEX WORKERS

Why Are They Included?

In recent years, an active industry of men selling sex to men (and, far less frequently, women) has emerged in several major urban areas in Indonesia. These men frequently provide anal sex services to their clients, and since condom use is high, the risk of exposure to HIV in this population is significant.

Data Sources

Very few data are available on male Sex Workers. The major sources of data are NGOs working specifically with these populations. Complete mappings have been undertaken in a number of cities.

Male Sex Workers: Estimation Method

Estimates of the number of male Sex Workers were provided directly by NGOs who have been involved in mapping and service provision. These data were compiled by Gaya Nusantara. In addition, the University of

Indonesia, which has mapped male sex workers populations for inclusion in behavioural surveillance, provided data for two cities.

It has not been established that male sex workers exist throughout Indonesia. No assumptions or indirect estimates were made for this population in areas where direct estimates were not available.

These direct mapping methods led to an estimate of between 2,100 and 2,900 male Sex Workers nationwide.

Limitations

For the cities covered by the mapping and census methods, the estimates of male sex workers are quite robust. However by no means all urban areas were covered; male sex workers may exist in many cities and provinces not covered by the current estimates. They should therefore be considered an absolute minimum for this population. More provinces may want to engage in mapping and censuses of male massage parlours and cruising spots in the future in order to improve the completeness and accuracy of these estimates.

HIV Prevalence Estimates

At the time of the estimates, the only HIV prevalence data for male sex workers came from a random study of male sex workers based in massage parlours in Jakarta, conducted in June 2002. The confidence levels around these data were used as high and low estimates for Jakarta. Male sex workers in other areas were generally expected to be slightly less exposed to HIV, and prevalence was estimated accordingly.

13 FEMALE PARTNERS OF MALE SEX WORKERS

Why Are They Included?

In behavioural surveillance in Jakarta, it was apparent that many male sex workers identify as heterosexuals. These men are highly exposed to HIV through their work, which usually involved selling anal sex to other men, and many have wives or regular female partners who may also therefore become exposed to HIV infection. Although their numbers are relatively small, the female partners of male sex workers illustrate once again that exposure to HIV in Indonesia is not limited only to those with identifiably high risk behaviour.

Data Sources

The only source of relevant data available at the time the 2002 estimates were made was a round of behavioural surveillance among massage-parlour based male sex workers in Jakarta.

Female Partners of Male Sex Workers: Estimation Method

In behavioural surveillance in Jakarta, 40 percent of male sex workers also reported sex with female partners (mostly wives or girlfriends) in the last year. This percentage was applied to the estimated number of male sex workers nationwide, to arrive at an estimate of between 1,000 and 1,400 female partners of male Sex Workers.

Limitations

Besides being based on the male sex workers estimates and therefore sharing the limitations of those estimates, these estimates were based on data from a single survey, which was applied nationwide. In addition, the survey only included male sex workers based in massage parlours, while the estimates include

“freelance” male sex workers based in bars, crushing spots etc. These men may be less (or indeed more) likely to have female partners than those based in massage parlours. Freelance sex workers were included in BSS in two other cities, and these data will be available to improve the 2003 estimates.

HIV Prevalence Estimates

Since no data are available for female partners of male sex workers, the same transmission probability was used as was used for the female partners of male clients of sex workers. Female partners of male sex workers are assumed to have one tenth the level of HIV prevalence as is found in their male partners.

14 OTHER MEN WHO HAVE SEX WITH MEN

Why Are They Included?

The 2001 estimates did not explicitly include any male-male transmission of HIV. Since those estimates were made, however, more information has become available about risk behaviour and HIV among men who have sex with other men, and it is apparent that this behaviour is not confined to waria or male sex workers. Homosexuality is still very much frowned upon in Indonesian culture, however in the last few years a thriving “gay scene” has emerged in many major cities. In addition, a substantial number of men are known to have sex with men (including male sex workers) even though they do not adopt openly gay identities.

Anal sex carries a high risk of HIV transmission, and since HIV already exists at non-negligible levels in this population, men who engage in anal sex with other men are potentially exposed to the virus. The “other men who have sex with men” category consists largely of those who are

behaviourally homosexual or bisexual, but who are not transvestite and who do not sell sex. The clients of male sex workers would generally fall into this category. Sex with waria is not considered “male-male” by many Indonesians, and clients of waria will rarely be duplicated in this population.

Data Sources

Data on the prevalence of male-male sex in the general population in Indonesia is extremely limited. A recent study of HIV, syphilis and risk behaviour among MSM in Jakarta has provided some idea of the magnitude of the openly “gay” scene in that city, and behavioural surveillance in Batam (Riau) and Surabaya (East Java) have done the same. The Jakarta study also involved a lot of research in internet chat rooms, where men who wish to retain their anonymity often communicate with potential partners. However none of these sources gives a complete picture

of male-male sex among people who maintain “straight” identities.

BSS among mobile male populations (described under “Male clients” above) have also asked questions about male-male sex in three locations.

The only other available data sources are regional estimates for the prevalence of male-male sex made by international institutions such as UNAIDS.

MSM Estimation Method

Inevitably, male-male sex takes place throughout Indonesia, as it does throughout the world. Because so few data are available, however, it was not possible to base estimates on any listings, mappings or other similar information sources.

Instead, estimates were made on the simple basis of assigning a proportion of the male population to same-sex behaviour. UNAIDS estimates that between five and 10 percent of men in industrialized countries and between three and five percent in the Asia-Pacific region engage in same-sex behaviour.

In discussion with gay NGOs and others, it was thought that male-male sex (with the exception of sex with waria) remains more heavily stigmatized in Indonesia than in many other countries of the region. There is no reason to believe that the proportion of men who have homosexual preferences would differ, but where male-male sex is very much stigmatized, it is possible that those preferences will not be expressed in behaviour. And in terms of exposure to HIV, it is the behaviour rather than the preference that counts.

Because of the heavily stigmatized nature of male-male sex in Indonesia, gay organizations

felt it was reasonable to take a low-end estimate for the proportion of men who actually have sex with other men. It was decided that between one and three men in 100 was a more reasonable estimate than the higher UNAIDS estimates.

The low estimates were thus arrived at by assuming one percent of men aged 15-49 had sex with other men, while the high estimates assumed three percent of men of that age had sex with other men. This led to a nationwide estimate of between 575,000 and 1.7 million men having sex with men in 2002.

Limitations

These estimates are perhaps the least reliable of the 2002 estimates. Besides a mapping of the openly gay population that goes to gay bars and cruising spots in Jakarta (between 2,000 and 3,000 people), there are virtually no data available to indicate how accurate our assumptions of the prevalence of male-male sex are likely to be. It is doubtful whether a household survey would resolve this problem, because under-reporting is likely to be extensive. In behavioural surveillance among high risk men in three cities, not one admitted to having had sex with another man in the last year (other than a waria), even though many of the clients reported by male sex workers fell into the occupational categories covered by BSS.

HIV Prevalence Estimates

At the time of the estimates, the only HIV prevalence data for men who have sex with men came from a random study of men sampled from bars, clubs, parks and other cruising locations where gay men gather in Jakarta. The study was conducted in June 2002. Because it covers openly gay men who may have a greater

opportunity for partner exchange, it almost certainly represents the high end of the HIV prevalence spectrum. The measured study results were therefore used as the high-side estimate for Jakarta, with the low estimate set at a quarter of the measured prevalence. MSM in other areas were generally expected to be slightly less exposed to HIV, and prevalence was estimated accordingly.

15 PRISONERS

Why Are They Included?

Sentinel surveillance sites in prisons have registered extraordinarily rapid growth of HIV in some cities in Indonesia in the last two years. Initial assumptions were that this may reflect the rising prevalence of HIV among injection drug users arrested for drug-related crimes. However the rise of prevalence has been so steep that it would indicate that transmission is actually taking place within prisons themselves. It is known that sex between men and drug injection take place in prisons in Indonesia (as in most countries). People with no previous exposure to HIV may begin to engage in these behaviours while they are in prison. In other words, people may be exposed to HIV not because of any preceding behaviour, but because of the very fact that they are prisoners. For this reason, it was decided to include prisoners as a separate exposure category.

Data Sources

Prison records are kept by the Ministry of Justice and Human Rights who provided information for the national HIV estimation process.

Prisoners: Estimation Method

At the time of making the national HIV estimates, the total number of Indonesians in prison in the year to September 2002 was available, and was close to 74,000. Unfortunately, provincial figures for the entire prison population were not available, but the Department did provide figures for “special arrests” (which include drug-related offences as well as those threatening national security). Provincial estimates were made by allocating the total number of prisoners to provinces in the same ratio as was recorded in the “special arrests” data.

Limitations

These estimates are based on a count of prisoners, and the national total is therefore robust. It was unfortunate that provincial counts were not available. In the next round of estimates, it should be possible to get exact provincial counts.

While prisoners may be exposed to HIV by virtue of behaviours adopted in prison, as described above, it is doubtless true that many will have had risky behaviours (including drug injection) before coming to prison. Since prison sentences in Indonesia are typically rather short, these individuals may also have been included in other data sources in the last year (such as drug treatment centre data), and would therefore also have appeared in the IDU estimates. This would lead to some double counting of those exposed to infection.

HIV Prevalence Estimates

Several provinces include prisons as HIV sentinel surveillance sites. Where such data were available, they were used to estimate HIV prevalence in prisoners in that province. Where such data were not available, “best guesses” were made on the basis of background prevalence in the province and knowledge of surveillance staff.

16

STREET CHILDREN

Why Are They Included?

Government departments and NGOs are increasingly concerned about the fate of street children in urban Indonesia. These children lead unstable lives that may expose them to risky behaviour and the threat of violence, including sexual violence. At present no data exist to suggest this group is highly exposed to HIV, but it was thought important to monitor these trends over time, and to keep the safety and sexual health of street children on the national agenda.

Data Sources

There are two principal sources for data on street children in Indonesia. The first is a registry kept by Depsos. Depsos data were available for many provinces for 2001, and for some for 2002. The second are mappings and assessments carried out by NGOs. These were compiled for the national HIV estimation process by staff from Save the Children US.

In general, there is rather good agreement between these sources. The NGO assessments also include behavioural data, including information about sex and drug-taking. One sero-survey is available for street children in Jakarta.

Street Children Estimation Method

The numbers provided by Depsos and Save the Children were listed by province, and higher of the two was used as the estimated number of street children in a province. For provinces where data were not available, no assumptions were made. Estimates for street children were not included for those provinces. Overall, 70,900 children are estimated to live on the streets of Indonesia's cities.

Limitations

Although it is unlikely that any major city in Indonesia is completely free of street children, no data at all were available for several

provinces. In addition, the estimates for old provinces were not apportioned between old and new provinces.

HIV Prevalence Estimates

The only available HIV prevalence data among street children comes from a survey of street children in Jakarta conducted by Health Research and Development Center in 2000. No HIV was recorded in this population, although some children were infected with STIs. Behavioural surveys among street children record surprisingly low levels of sexual activity (typically, between four and nine percent of street children say they have ever had sex). These two facts together led to “guesstimates” of rather low rates of HIV in this population. HIV was assumed to range between zero and 0.1 percent in all street children populations throughout the country in 2002.

17 RESULT

A detailed spreadsheet giving all the provincial data is available from the Ministry of Health, Directorate of Communicable Disease Control and Environmental Health, Sub-Directorate of HIV and AIDS.

This table gives a national summary of key results of the national HIV estimation process. The following tables give estimates by province for three key populations: IDUs, male clients of female Sex Workers, and female Sex Workers.

	ESTIMATED POPULATION SIZE			ESTIMATED HIV PREVALENCE			PEOPLE WITH HIV
	Low Estimate	High Estimate	Average	Low Prevalence	High Prevalence	Average	Average
IDU	123,849	195,597	159,723	19.18	34.35	26.76	42,749
Non-IDU Partners of IDU	94,125	148,654	121,389	6.39	11.45	8.92	10,830
Sex Workers	193,234	272,844	233,039	1.98	5.20	3.59	8,369
Clients of Sex Workers	6,859,402	9,585,103	8,222,253	0.20	0.61	0.40	32,922
Reg. Partners of Clients	4,934,487	7,293,178	6,113,833	0.03	0.11	0.07	4,457
Gays	574,904	1,724,713	1,149,809	0.40	1.34	0.87	10,021
Male Sex Workers	2,100	2,900	2,500	2.74	5.29	4.02	100
Female Partners of Male Sex Workers	992	1,372	1,182	1.00	1.99	1.50	18
Waria	7,831	14,712	11,272	9.34	14.33	11.84	1,334
Clients of waria Sex Workers	173,050	339,927	256,488	1.88	2.87	2.37	6,085
Regular Partners of Waria	2,128	3,972	3,050	4.37	6.59	5.48	167
Prisoners	73,794	73,794	73,794	8.61	15.38	11.99	8,851
Street Children	70,872	70,872	70,872	0.00	0.17	0.08	59
Total	12,791,783	19,235,233	16,013,508	0.42	0.97	0.69	110,800

INJECTING DRUG USERS		Population Sizes		Estimates of HIV Prevalence			Estimates of IDU Living With HIV/AIDS						
		Low Estimate	High Estimate	Low Prevalence (%)	High Prevalence (%)	Low Low	Low High	High Low	High High	Average			
Populations at higher risk													
Aceh	1,101	2,947	15	25	165	275	442	737	405				
Sumatra Utara	14,260	23,222	15	25	2,139	3,565	3,483	5,805	3,748				
Sumatra Barat	263	7,293	15	25	39	66	1,094	1,823	756				
Riau	1,281	9,665	15	25	192	320	1,450	2,416	1,095				
Jambi	4,107	4,107	15	25	616	1,027	616	1,027	821				
Sumatra Selatan	2,665	2,822	15	25	400	666	423	705	549				
Bengkulu	556	556	15	25	83	139	83	139	111				
Jawa Barat	17,582	26,684	20	35	3,516	6,154	5,337	9,339	6,087				
Lampung	2,009	4,953	15	25	301	502	743	1,238	696				
Bangka Belitung	217	333	15	25	33	54	50	83	55				
Jakarta	27,275	27,796	25	50	6,819	13,638	6,949	13,898	10,326				
Banten	4,084	7,821	20	35	817	1,429	1,564	2,737	1,637				
Jawa Tengah	16,706	13,175	20	35	3,341	5,847	2,635	4,611	4,109				
Jogjakarta	7,317	16,160	20	35	1,463	2,561	3,232	5,656	3,228				
Jawa Timur	14,498	14,968	20	35	2,900	5,074	2,994	5,239	4,052				
Kalimantan Barat	1,254	1,544	15	25	188	313	232	386	280				
Kalimantan Tengah	50	140	15	25	7	12	21	35	19				
Kalimantan Selatan	1,191	2,144	15	25	179	298	322	536	333				
Kalimantan Timur	830	1,321	15	25	124	207	198	330	215				
Bali	2,000	6,838	25	50	500	1,000	1,709	3,419	1,657				
NTB	1,504	1,504	15	25	226	376	226	376	301				
NTT	58	296	15	25	9	14	44	74	35				
Sulawesi Utara	71	633	15	25	11	18	95	158	70				
Sulawesi Tengah	39	39	15	25	6	10	6	10	8				
Sulawesi Selatan	2,785	9,602	15	25	418	696	1,440	2,401	1,239				
Sulawesi Tenggara	37	550	15	25	5	9	83	138	59				
Gorontalo	21	460	15	25	3	5	69	115	48				
Maluku	28	2,610	15	25	4	7	391	652	264				
Maluku Utara	20	3,641	15	25	3	5	546	910	366				
Papua	41	1,774	15	25	6	10	266	444	182				
TOTAL	123,849	195,597	19.79	33.46	24,514	44,300	36,743	65,438	42,749				

CLIENTS OF F SEX WORKERS		Population Sizes		Estimates of HIV Prevalence		Estimates of Clients Living With HIV/AIDS					
Populations at higher risk		Low Estimate	High Estimate	Low Prevalence (%)	High Prevalence (%)	Low Low	Low High	High Low	High High	Average	
Aceh		14,877	17,248	0.04	0.10	6	15	7	17	11	
Sumatra Utara		448,857	619,059	0.04	0.12	180	539	248	743	427	
Sumatra Barat		11,834	16,321	0.04	0.10	5	12	7	16	10	
Riau		326,345	450,092	0.38	0.80	1,240	2,611	1,710	3,601	2,290	
Jambi		80,824	111,472	0.04	0.10	32	81	45	111	67	
Sumatra Selatan		390,485	538,553	0.10	0.30	390	1,171	539	1,616	929	
Bengkulu		44,567	61,466	0.04	0.10	18	45	25	61	37	
Jawa Barat		524,795	843,457	0.30	0.80	1,574	4,198	2,530	6,748	3,763	
Lampung		129,839	179,073	0.20	0.50	280	649	358	895	541	
Bangka Belitung		30,087	41,496	0.10	0.30	30	90	41	124	72	
Jakarta		1,080,142	1,489,721	0.05	0.50	540	5,401	745	7,449	3,534	
Banten		147,240	247,200	0.30	0.80	442	1,178	742	1,978	1,085	
Jawa Tengah		773,090	1,066,239	0.10	0.30	773	2,319	1,066	3,199	1,839	
Jogjakarta		146,257	201,717	0.20	2.20	293	3,218	403	4,438	2,088	
Jawa Timur		1,385,272	1,910,554	0.25	0.50	3,463	6,926	4,776	9,553	6,180	
Kalimantan Barat		80,573	111,125	0.10	0.20	81	161	111	222	144	
Kalimantan Tengah		154,179	212,642	0.30	0.80	463	1,233	638	1,701	1,009	
Kalimantan Selatan		67,815	93,530	0.04	0.10	27	68	37	94	56	
Kalimantan Timur		313,226	431,998	0.20	0.50	626	1,566	864	2,160	1,304	
Bali		102,813	90,072	0.50	1.00	514	1,028	450	901	723	
NTB		20,311	28,013	0.10	0.20	20	41	28	56	36	
NTT		14,768	12,647	0.04	0.10	6	15	5	13	10	
Sulawesi Utara		16,727	23,070	0.10	0.30	17	50	23	69	40	
Sulawesi Tengah		26,518	36,573	0.10	0.20	27	53	37	73	47	
Sulawesi Selatan		105,445	145,429	0.20	0.50	211	527	291	727	439	
Sulawesi Tenggara		34,960	48,217	0.04	0.10	14	35	19	48	29	
Gorontalo		12,147	16,752	0.10	0.30	12	36	17	50	29	
Maluku		49,606	83,294	0.04	0.10	20	50	33	83	47	
Maluku Utara		29,097	48,857	0.20	0.50	58	145	98	244	136	
Papua		296,706	409,214	0.70	2.70	2,077	8,011	2,864	11,049	6,000	
TOTAL		6,859,402	9,585,103	0.20	0.61	13,418	41,473	18,758	58,039	32,922	

FEMALE SEX WORKERS	Population Sizes		Estimates of HIV Prevalence		Estimates of Female Sex Workers Living With HIV/AIDS					
	Low Estimate	High Estimate	Low Prevalence (%)	High Prevalence (%)	Low Low	Low High	High Low	High High	Average	
Aceh	520	603	0.4	1.0	2	5	2	6	4	
Sumatra Utara	15,685	21,633	0.4	1.2	63	188	87	260	149	
Sumatra Barat	414	570	0.4	1.0	2	4	2	6	3	
Riau	18,076	24,930	3.8	8.0	687	1,446	947	1,994	1,269	
Jambi	2,824	3,895	0.4	1.0	11	28	16	39	24	
Sumatra Selatan	13,646	18,820	1.0	3.0	136	409	188	565	325	
Bengkulu	1,557	2,148	0.4	1.0	6	16	9	21	13	
Jawa Barat	13,955	22,428	3.0	8.0	419	1,116	673	1,794	1,001	
Lampung	4,537	6,258	2.0	5.0	91	227	125	313	189	
Bangka Belitung	1,051	1,450	1.0	3.0	11	32	15	44	25	
Jakarta	27,276	37,619	0.5	5.0	136	1,364	188	1,881	892	
Banten	3,915	6,573	3.0	8.0	117	313	197	526	288	
Jawa Tengah	20,557	28,352	1.0	3.0	206	617	284	851	489	
Jogjakarta	3,889	5,364	2.0	5.0	78	194	107	268	162	
Jawa Timur	24,475	33,756	2.5	5.0	612	1,224	844	1,688	1,092	
Kalimantan Barat	2,816	3,883	1.0	2.0	28	56	39	78	50	
Kalimantan Tengah	5,388	7,431	3.0	8.0	162	431	223	594	353	
Kalimantan Selatan	2,370	3,268	0.4	1.0	9	24	13	33	20	
Kalimantan Timur	10,946	15,096	2.0	5.0	219	547	302	755	456	
Bali	3,000	5,608	5.0	10.0	150	300	280	561	323	
NTB	710	979	1.0	2.0	7	14	10	20	13	
NTT	317	437	0.4	1.0	1	3	2	4	3	
Sulawesi Utara	805	1,111	1.0	3.0	8	24	11	33	19	
Sulawesi Tengah	821	1,133	1.0	2.0	8	16	11	23	15	
Sulawesi Selatan	2,197	3,030	2.0	5.0	44	110	61	151	91	
Sulawesi Tenggara	927	1,278	0.4	1.0	4	9	5	13	8	
Gorontalo	585	807	1.0	3.0	6	18	8	24	14	
Maluku	1,315	2,208	0.4	1.0	5	13	9	22	12	
Maluku Utara	771	1,295	2.0	5.0	15	39	26	65	36	
Papua	7,890	10,881	7.0	15.0	552	1,183	762	1,632	1,032	
TOTAL	193,234	272,844	1.96	5.23	3,796	9,972	5,445	14,263	8,369	

**SURVEILLANCE WORKING GROUP MEETING ON
PREPARATION ESTIMATES OF NUMBER OF
HIV VULNERABLE POPULATION IN INDONESIA 2002
19 AUGUST 2002, IN DTDC**

No.	Name	Institutions
1.	Dr. Amaya Maw-Naing	WHO
2.	Jane Wilson	UNAIDS
3.	Dr. Djoko Suharno	National AIDS Committee
4.	Dr. Endang Sedyaningsih	Health Development and Research
5.	Dr. Haikin Rachmat	DTDC
6.	Dr. Saiful Jazan	DTDC
7.	Dr. Fonny J. Silfanus	DTDC
8.	Dr. Sigit Priohutomo	DTDC
9.	Dr. Pandu Riono	ASA/FHI
10.	Elisabeth Pisani	ASA/FHI
11.	Dr. Arwati Soepanto	ASA/FHI
12.	Naning Nugrahini	DTDC

**TECHNICAL MEETING ON ESTIMATES OF
NUMBER OF HIV VULNERABLE POPULATION IN INDONESIA, 2002
27- 28 AUGUST 2002, IN ACACIA HOTEL**

No.	Name	Institutions
1.	Dr. Mashoedojo, MSc	Ministry of Security
2.	Dr. Saptuti	Indonesian Red Cross
3.	Dra. Riza S. Pramudyo	Drug Dependency Hospital
4.	Wiyanto	Tourism Office
5.	Arwati Supanto	ASA/FHI
6.	Elisabeth Pisani	ASA/FHI
7.	Yuliandri	DTDC
8.	Marni Radini	DTDC
9.	Marcell Matuihamallo	Mitra Indonesia Foundation
10.	Suryadi Gunawan	Health Development and Research Board
11.	Dadun	Health Research Center, University of Indonesia
12.	Cahyo	Health Research Center, University of Indonesia
13.	Sigit Priohutomo	DTDC
14.	Fadjar WS	Indonesian Army Health
15.	Gambit	ASA/FHI
16.	Irawati	Health Promotion Center
17.	Pandu Riono	ASA/FHI
18.	Lenny Sugiharto	Srikandi Foundation
19.	Gunadi	Statistical Center Board
20.	Daryono	ASA/FHI
21.	Hendra Salim	Ministry of Justice and Human Right
22.	Widaninggar W.	Ministry of National Education
23.	Budi Utomo	Population Council
24.	Saiful Jazan	DTDC
25.	Ko Budijanto	Gaya Nusantara
26.	Susanti Herlambang	Ministry of Social Affairs
27.	Joyce	Kita Foundation
28.	David Gordon	Kita Foundation
29.	Berton Panjaitan	DTDC
30.	Djoko Suharno	National AIDS Committee
31.	Partha Muliawan	Kerti Praja Foundation, Bali
32.	Naning Nugrahini	DTDC
33.	Fonny JS	DTDC
34.	Tri Yunis M	Public Health Faculty, University of Indonesia
35.	Plamularsih Swandari	Atmajaya University
36.	Agus	Kios Info, Rempah
37.	Gelora Manurung	National Family Planning Coordination Board
38.	Rudi W	IMC-Indonesia
39.	Ishak A.	Provincial AIDS Committee of Jakarta
40.	HM Said	Provincial AIDS Committee of Jakarta
41.	Haikin Rachmat	DTDC
42.	V. Indrawati	DTDC
43.	Nyoman Kandun	Ministry of Health
44.	Suharno	Statistical Center Board
45.	Chalip Afwan	National AIDS Committee

**PREPARATION WORKSHOP ON
ESTIMATES OF NUMBER OF
HIV VULNERABLE POPULATION IN INDONESIA, 2002
12 SEPTEMBER 2002, DTDC**

No.	Name	Institutions
1.	Dr. Susanti Herlambang	Ministry of Social Affairs
2.	Dr. Hendra Salim	DG, Prison, Ministry of Justice & HR
3.	Dr. Irwanto	Atmajaya University
4.	Dadun	Health Research Center, University of Indonesia
5.	Chayo	Health Research Center, University of Indonesia
6.	Dr. Samsuridzal	Pelita Ilmu Foundation
7.	Dr. Bambang Eka	Community Health Center of Kp. Bali
8.	Dr. Budyo Prasetyo	National Narcotics Board
9.	Dr. Suharno	Statistical Center Board
10.	Gambit	ASA / FHI
11.	Lenny S.	Srikandi Foundation
12.	Marcell Matuihamallo	Mitra Indonesia Foundation
13.	Dr. Endang Sedyaningsih	Health Development and Research
14.	Dr. Soeharto	Statistical Center Board
15.	DR. Saptuti Chunani	Indonesian Red Cross

**WORKSHOP ON NUMBER OF HIV VULNERABLE
POPULATION IN INDONESIA, 2002
13 - 14 SEPTEMBER 2002, DEPOK**

No.	Name	Institutions
1.	Dr. Haikin Rachmat, MSc	DTDC
2.	Dr. Saiful Jazan, MSc	DTDC
3.	Dr. Fonny J. Silfanus, MKes	DTDC
4.	Dr. Sigit Priohutomo, MPH	DTDC
5.	Naning Nugrahini, SKM	DTDC
6.	V. Indrawati, SKM	DTDC
7.	Nurjannah, SKM	DTDC
8.	Muhani, SKM	Health Promotion Center
9.	Dr. Endang Sedyaningsih, PhD	Health Development and Research
10.	Dr. Djoko Suharno, PhD	National AIDS Committee
11.	Prof Budi Utomo	Population Council
12.	Dadun	Health Research Center, University of Indonesia
13.	Cahyo	Health Research Center, University of Indonesia
14.	Gunadi Supena	Statistical Center Board
15.	Gelora Manurung	National Family Planning Coordination Board
16.	Dr. Budyo Prasetyo	National Narcotics Board
17.	Dr. Fadjar W	Indonesian Army Health
18.	Dr. Susanti Herlambang	Ministry of Social Affairs
19.	Dr. Auda	Indonesia Red Cross
20.	Riza Pramudyo	Drug Dependency Hospital
21.	Husain Habsy, SKM	Pelita Ilmu Foundation
22.	Lenny S	Srikandi Foundation
23.	Ko. Budijanro	Gaya Nusantara
24.	Dr. Partha Muliawan	Kerti Praja Foundation, Bali
25.	Joyce Djailani	Kita Foundation
26.	Dr. Irwanto	Admajaya University
27.	Dr. Wijayanto	Tourism Office
28.	Dr. Steve Wignall	ASA/FHI
29.	Dr. Arwati Soepanto	ASA/FHI
30.	Dr. Pandu Riono	ASA/FHI
31.	Elisabeth Pisani	ASA/FHI
32.	Veri Kamil	ASA/FHI
33.	Jane Wilson	UNAIDS, Jakarta
34.	George Loth	UNAIDS, Geneva
35.	Lalit Nath	WHO SEARO
36.	Dr. Amaya Maw Naing	WHO
37.	Dr. Ratna Kurniawati	USAID Jakarta
38.	M. Asri	WHO
39.	Dr. Penny Miller	AusAID
40.	Tim Brown	AusAID



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