WORLD HEALTH ORGANIZATION

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STI
HIV

CONSENSUS REPORT ON
STI, HIV AND AIDS EPIDEMIOLOGY:
MALAYSIA

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AIDS/STD Section, Ministry of Health, Malaysia

with support from the

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SUMMARY

HIV was first reported in Malaysia in 1986, the reported cumulative number of people with HIV/AIDS increasing to more than 28 000 by the end of 1998. There are also an estimated additional 19 000 unreported HIV infections. The estimated cumulative total of HIV infections was 44 000 in 1998. HIV is predominantly transmitted through intravenous drug use (IDU) and most IDUs are men. Therefore, nine out of ten HIV infections are in men. It is projected that from 1998 to 2003, the prevalence of HIV among people aged 15 to 49 years will increase from 0.19% to 0.30% and the number of people living with HIV from 41 000 to about 72 000. However, HIV incidence is expected to decrease from 0.05% to 0.03% of the population aged 15 to 49 years.

HIV was first detected in Malaysia in 1986. By 30 December 1998 a total of 28 541 HIV infections had been reported to the Ministry of Health. Of these, 2 354 had developed AIDS. Compared to the estimated number of HIV infected people in 1996, the reported number represents 64% of estimated HIV infections.

The majority of the reported HIV infections (27 389 or 96%) and AIDS cases (2 213 or 94%) were among males. HIV has been reported primarily among intravenous drug users (73% of the HIV infections, and 57% of the AIDS cases). Most of the reported HIV infections are among people aged 30 to 39 years (43%), and 20 to 29 years (40%). By racial group, the majority of both reported HIV infections and AIDS cases are among Malays (73% of HIV infections, 55% of AIDS cases). However, this may partially be the result of the testing system.

To revise the estimates of HIV infections in 1998 and the projections of HIV infections and AIDS cases for the five years beginning 1999, a consensus meeting was held in Kuala Lumpur in March 1999. This meeting was held with the participation and support of the WHO Western Pacific Regional Office. The methods described below for the estimation and projections of the numbers of HIV infections and AIDS cases were endorsed by the participants of this consensus meeting.

METHODS

PASSIVE SURVEILLANCE

All HIV infections and AIDS cases diagnosed by registered medical practitioners are reported to the state AIDS/STD units of the Ministry of Health and then to the National AIDS/STD Unit. Compliance with reporting of both HIV and AIDS is believed to be adequate. Although laboratories without registered medical practitioners cannot report notifiable diseases, the MOH assumes that most HIV infections diagnosed by such laboratories are referred to physicians. Tracing of partners of people identified with HIV and

AIDS is a priority, but the success rate is estimated to be less than 20%. Most HIV infections and AIDS cases are identified during the routine screening of arrested drug users, patients with STIs or tuberculosis, blood donors and prenatal clinic attendees. As movement from state to state, and repeat arrests are common among IDUs, some cases may be reported from more than one state. Among STIs, only gonorrhoea, syphilis and chancroid are reportable. It is known that most people with STIs go to private doctors, and many of these cases are not reported to the MOH. A recent study estimated that only 7% of cases are reported. STIs are reported to the State Information and Documentation Unit, and then to the National Information and Documentation Unit, and not directly to the AIDS/STD unit.

ACTIVE HIV SURVEILLANCE

A sentinel HIV surveillance system was established in 1994 and includes women who attend prenatal clinics and patients with tuberculosis or STIs. However, as these population subgroups are routinely screened for HIV, this sentinel surveillance will be phased out. Universal screening of pregnant women was expected to cover all government clinics in 1998. However, the data from routine screening, especially among drug users, may under or over estimate actual HIV prevalence. This is because the current system cannot identify people who have been tested before. Some population groups who may be at increased risk for HIV transmission, including truck drivers, commercial sex workers or fisherman, are not included in routine surveillance. A HIV-seroprevalence and behavioural survey of fisherman, has been completed. For STIs, recent population-based seroprevalence information is not available. A WHO-supported STI prevalence survey is being undertaken in 1999-2000.

ESTIMATES AND PROJECTIONS

The experts attending this consensus meeting used a variety of data to develop estimates of HIV prevalence in 1998. These sources included existing HIV prevalence data for specific population subgroups, the estimated number of the population subgroups who are at increased risk for HIV, and the population estimates from the census data. EPIMODEL was used to project

the number of HIV infections and AIDS cases until 2003. Cause-specific estimates were not developed for STIs as information on STI prevalence is inadequate.

Population denominators used in the estimation of HIV infected persons in 1998:

Population of Malaysia, 1998 (Vital Statistics Malaysia – Dept. of Statistics)	**21 394 500**
Population aged 15 to 49 years Male population aged 15 to 49 years = 5 701 300 Female population aged 15 to 49 years = 5 566 900	**11 268 200**
Total number of injecting drug users (IDUs) (Estimates by the National Anti-narcotic Agency, Ministry of Home Affairs)	**200 000**
Total number of persons with STIs (Estimated based on the results from STI provider survey in 1998 and the reported number of STIs)	**58 000**
Total number of commercial sex workers (Estimated number, Personal communication, Welfare Dept. and Anti-Vice Unit, Ministry of Home Affairs)	**50 000**

HIV prevalence rates

Table 1. HIV prevalence rates from various sources, Malaysia, 1998

Population tested	HIV prevalence (%)		
	Average	Low*	High*
Injecting drug users[1]	18.000	15.000	20.000
Tuberculosis patients[2]	6.000	4.000	8.000
Commercial sex workers[3]	3.000	1.500	5.800
STI patients[4]	2.000	1.000	5.000
Blood donors[5]	0.012	0.003	0.020
Blood dependent[6]	1.000	0.000	2.000
Pregnant women[7]	0.030	0.010	0.040

*based on low or high reported rates and not confidence limits
[1]sample size, 91 – 27 150   [2]sample size, 159
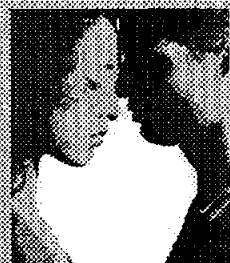[3]sample size, 168 – 1356   [4]sample size, 487
[5]sample size, 134 249 – 278 293   [6]sample size, 86 – 282
[7]sample size, 8278

From the prevalence rates shown in Table 1, selected prevalence rates shown below were adopted for the estimation of HIV infections.

Table 2. Data used to estimate the number of people infected with HIV in Malaysia in 1998

Population	HIV prevalence rates[1]		
	Average (%)	Low(%)	High(%)
Adult male & female	0.02[2]	0.012[3]	0.03[4]
IDU	18.0	15.0	20.0
CSW	3.0	1.5	5.8
STI patients	2.0	1.0	5.0
Mother-to-child transmission rate[5]	15.0	10.0	25.0

[1] Data from tuberculosis patients were not used in estimates because most tuberculosis patients with HIV were referred through the HIV testing of IDUs, and are not representative of a sample of tuberculosis patients.
[2] highest prevalence among blood donors
[3] average prevalence among blood donors
[4] average prevalence among pregnant women
[5] The mother-to-child transmission may be skewed toward the left because of the introduction of universal prenatal HIV-screening and availability of treatment, including AZT, for pregnant women who are HIV positive.

Calculations

The total number of HIV-infected persons is the sum of HIV-infected males, females and children. The formulas used to calculate these estimates were as follows:

HIV-infected adult males = (number of males 15 to 49 years of age multiplied by HIV prevalence among adults) plus (number of IDUs multiplied by HIV prevalence among IDUs) plus (25% of persons with STI multiplied by HIV prevalence among STI patients)

HIV-infected adult females = (number of females 15 to 49 years of age multiplied by HIV prevalence among adults) plus (number of commercial sex workers multiplied by HIV prevalence among commercial sex workers) plus (75% of persons with STI multiplied by HIV prevalence among STI patients)

HIV-infected children = (number of HIV-infected women multiplied by fertility rate of 2.3 in 1997 multiplied by mother-to-child HIV transmission rate)

For each population group, the average number was calculated using the average HIV prevalence rate. The lower boundary of the number of HIV-infected persons was calculated using the lower boundary of the HIV prevalence value. The upper boundary of the number of HIV-infected persons was calculated using the upper boundary of the HIV prevalence value. For children, the lower and upper range of the number of HIV-infected children was calculated based on the range of the mother-to-child transmission rate. As the vast majority of known IDUs are men, this analysis assumed that all IDUs are men.

Estimates for 1998

Table 3. Reported and estimated number of HIV infections in 1998

Population	Reported 1998 Cumulative	Estimated prevalence 1998 Average	Low	High
Total⁺	28 541	41 000	32 500	49 000
Adults (high +low risk)				
Male	27 283	37 400	31 000	42 500
Female	1 136	3 500	1 500	6 500
Children	122	17	22	56
Low-risk adults	-			
Male	-	1 100	700	1 700
Female	-	1 100	700	1 700
High-risk adults				
IDU	22 006	36 000	30 000	40 000
CSW	-	1 500	750	2 500
STI	-	1 200	580	2 900

⁺ Total may not be the sum of values in subcategories because of rounding

Assumptions used in EPIMODEL

Year in which extensive spread of HIV began	1990
The peak year of the epidemic curve	1998
Population of Malaysia, 1998	21 394 500
Population growth rate	2.3%
Number of HIV infections in base year, 1998	41 000
The shape of the epidemic curve	5
The position of the peak year on the epidemic curve	305

Table 4. Estimates of HIV/AIDS in Malaysia, 1998 and 2003

	1998	2003
Adult HIV		
current	41 000	71 500
new	10 000	7 900
cumulative	44 000	90 000
prevalence (%)	0.19	0.30
incidence (%)	0.05	0.03
Adult AIDS		
current	600	2 200
new	1 200	4 400
cumulative	2 600	18 000
Adult Deaths		
New	1 000	4 100
Cumulative	2 000	16 000

KEY FINDINGS

The cumulative estimated number of people with HIV or AIDS in 1998 was 44 000 (Table 4). The reported cumulative number of HIV+ or AIDS-infected persons (28 541) accounts for about 64% of the estimated number. It is projected that, between 1998 and 2003, new HIV infections among adults will decline from 10 000 to 7 900 as incidence decreases, whereas the number of current infections will increase from 41 000 to 71 500 as prevalence increases (Table 4).

The male-to-female ratio of HIV infection is lower (11:1) in the estimates for 1988 than in the reported numbers (15:1). This is probably because of the inclusion of commercial sex workers and patients with STI in the estimates. The proportion of IDUs among the reported HIV infections (78%) is slightly lower than in the estimated numbers for 1998 (88%).

These projections should be interpreted with caution for several reasons. There is no indication that HIV transmission among IDUs will decline in the coming years. Also, there is no evidence to suspect wide-spread HIV transmission in the general population. The reported prevalence rates among prenatal women and blood donors have remained stable and low over time. Furthermore, paediatric HIV infection will remain low due to the introduction of intense efforts to prevent mother-to-child HIV transmission through case detection (routine HIV testing) and treatment

among pregnant women. The likelihood of paediatric HIV infection is assumed to be further reduced due to female commercial sex worker's use of contraceptives and abortion.

EPIMODEL was developed to predict infections in populations with an HIV epidemic diffused in the general population, such as in Sub-Saharan Africa. Its use in countries with stable epidemics and distinct high-risk groups, such as Malaysia, has not been evaluated. The effects of public health interventions and behavioral change on HIV transmission is not considered in the EPIMODEL. In the absence of more appropriate tools, these projections will be useful for country resource mobilization and planning. Because the epidemic trend varies depending on the risk group, projections should be made by risk groups and by state. Projections should be revised at least once in three years.

CONCLUSIONS AND RECOMMENDATIONS

The experts attending this consensus meeting were of the opinion that surveillance of HIV and AIDS is adequate. It is estimated that about two-thirds of HIV infections and AIDS cases are reported. However, there are limitations in the use of screening data for HIV prevalence monitoring. Some persons, especially injecting drug users, may be tested on multiple occasions, thus increasing the denominator. In addition, some people may be diagnosed and reported in more than one state, thus increasing the number of reported HIV infections and AIDS cases.

The participants made the following recommendations:

- Establish a computerized data system, using names and identification numbers to eliminate data from multiple tests.

- Develop rapid HIV-prevalence assessment protocols to assess HIV prevalence in communities with low prevalence that may be missed in routine screening.

- Revise and disseminate guidelines on HIV and AIDS case-finding, management and reporting to improve reporting.

- Periodically carry out STI prevalence study to provide population-based estimates of STIs in Malaysia.

- Report STIs direct to the HIV/STD unit of the Ministry of Health, as it is done now for HIV, to improve access to the data and reduce the time lag in processing and use of the data.

- Since there is no extensive spread of HIV in the general population, surveillance of behaviour that facilitates HIV/STI transmission would be an appropriate strategy to monitor the future course of the HIV epidemic. A limited number of behavioural questions should be incorporated into the proposed periodic STI prevalence surveys.

In summary, the experts attending this consensus meeting believe that HIV transmission in Malaysia is slowing down. HIV infection is focused in injecting drug users and their contacts. Injecting drug use remains the predominant mode of transmission, and there is no evidence of extensive transmission in the general population. The surveillance of HIV is adequate, but improvements are needed in data management. As information is insufficient to assess the STI burden, periodic population-based STI prevalence surveys are suggested. Surveillance of HIV/STI-related behaviour should also be initiated.

Participants attending the consensus meeting

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