

# Premarital HIV Screening in Johor - (2002-2004)

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## SUMMARY

A descriptive study was conducted on premarital HIV screening programme in Johor over a three year period. HIV screenings were done at government clinics and confirmed by accredited laboratories. As a result, 123 new HIV cases were detected (0.17%) from 74,210 respondents. In 2004, 24 cases (64.9%) advanced to marriage (n= 37) after they underwent counselling and six of them married among themselves. Positivity rate from this programme (0.17%) is higher than antenatal screening (0.05%). Despite the implementation of the premarital HIV screening programme, marriage application in Johor rose 2.8% in 2004 compared with 2002. This programme had partly contributed to public awareness against HIV and provides another option in early detection of the disease.

## KEY WORDS:

*Premarital HIV screening, Johor, Positivity rate, Early detection*

## INTRODUCTION

HIV / AIDS is a lifestyle related disease. It was estimated by W.H.O. that by the end of 2005, 38.6 million people would be HIV-infected<sup>1</sup>. To date, most of the cases worldwide are due to sexual contact, intravenous drug injection and some cases of vertical transmission from mother to child in developing countries. HIV Infection in Malaysia was first reported in the year 1986. From 1986 onwards, the number of cases reported increased gradually. By the end of year 2004, the total number of HIV cases reported was 64,439<sup>2</sup> cases. The total number of reported AIDS cases was 9,442 cases with 7,195 deaths.

In the state of Johor, HIV case was first detected in 1989. By the end of 2001 (before premarital HIV screening was started), the total number of HIV cases rose to 8,656 cases. This figure represents 19.5% of the total number of HIV cases reported in Malaysia. The total number of reported AIDS cases was 935 cases with 526 deaths (Fig. 1).<sup>3</sup>

HIV infection in Johor was common among intra-venous drug users (IDU) in the initial stage<sup>4</sup>. This group then spreads further to sexual partners of these individuals and eventually to their children. The main problem in control of HIV / AIDS in the early stages of HIV infection, individuals are often asymptomatic and are often not diagnosed.

The prevalence rate of HIV among IDU was 53.2 cases per 10,000 population in 2001 and represent 72.5% of all HIV cases. In Johor, the mode of transmission due to sexual activities among heterosexuals was noted to be rising. The

cumulative number of cases reported, due to heterosexual transmission by the end of 2001 (621) had risen 25.5% from 2000 (495). HIV cases reported among women from all the screening programmes including ante-natal have also been on the rise. For the year 2001 alone, there were 89 cases among women. This is a rise from the total of 283 cases reported during 1996 – 2000 period (Table I).

A pre-marital screening programme among Muslims was started in November 2001. Majlis Agama Islam Johor had come forward to jointly undertake this programme as all the marriage applications among Muslims were under their authority. The Muslim community was selected because the majority of cases in Johor were among Muslims. Of the HIV cases reported in 2001, 840 (75.3%) were Malays. Health education in the form of seminars, meeting, forums, discussions were carried out from February 2001 onwards in order to educate and explain to all the parties involved such as government agencies, NGO's and public representatives. On the 1st of November 2001, a religious edict was proclaimed that "all applications for marriage among Muslims in Johor shall undergo a premarital HIV screening programme". The objective of the premarital HIV screening programme was to allow for early detection of HIV infection and make available HIV / AIDS education at the screening sites thus enabling the management of HIV patient programme to be started as early as possible. Through this programme, the aim was for the general population to be made aware of the importance of HIV prevention and subsequently reduce the harm to the younger generation.

The objective of this study is to describe the performance of premarital HIV screening programme in the state of Johor.

## MATERIALS AND METHODS

A descriptive study for a period of three years from the year 2002 to 2004 was carried out in the whole state of Johor. All the marriage applications to the Majlis Agama Islam Johor underwent HIV screening process using SD Biotek HIV-1/2 3.0 Rapid Test Kits manufactured by Standard Diagnostics Inc., Korea, in all government clinics in Johor. The sensitivity of the rapid test is 100% while the specificity is at 99.8%<sup>5</sup>. The screening took place after group counselling had been carried out.

Individuals with reactive results underwent a confirmatory test after pre-test counselling. Blood samples were taken and sent to accredited laboratories for confirmation using ELISA and PA test. The results were given to the subjects during the next visit (after 1-2 weeks) by the relevant medical officers

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and the subjects given appropriate post test counselling. Newly detected HIV cases were placed under the management of HIV patient programme in the relevant clinics.

## RESULTS

### Output of all HIV screening programmes in Johor

Currently, HIV screening programmes in Johor other than premarital screening are ante natal, anonymous, contact screening and also encompass Drug Rehabilitation Centre and Prison screening. The total number of HIV screening from all the HIV screening programmes for the whole state had increased during this study period. A total number of 85,801 people were screened for the year 2002. This was an increase of 31.6% in the total number of persons screened for HIV compared to 2001 (Table II).

The number of HIV cases reported in 2004 was 691 cases compared to 1,116 cases in 2001 (before the start of the programme). This amounts to a decrease of 38% in case reported despite an increase of 42.2% in screening coverage from 65,215 people in 2001 to 92,761 people in 2004. A big jump in HIV screening in 2002 (85,801) compared to 2001 (65,215) was contributed to by the premarital screening. In the year 2002 alone, premarital screening (24,391) represents 28.4% of the total of all the HIV screening output.

### HIV cases detected from the premarital screening

Throughout the study period, 123 new cases were detected through the pre marital screening programme and represented 3.71% from all the new HIV cases (3317) reported throughout the year 2002 – 2004 (Table III).

The positivity rate of number of HIV cases rose from 0.12% (30 cases) in 2002 to 0.23% (56 cases) in 2003 but declined to 0.15% in the year 2004 with 37 HIV cases of the 25,068 people screened.

### Demography of Premarital HIV cases

A total of 72,471 who underwent screening (97.2%) were Malays, while the rest were Indians, Chinese and others. Of the 123 HIV cases, 97 (78.9%) were males and 26 (21.1%) were females. In the Johor Bahru district, out of 36 cases detected, only one case occurred in the age group of under 20 while the age group of 30 – 39 recorded the highest occurrence with 13 cases (36.1%). Cases among the older age group of 40 – 49 were 12 (25%) with the oldest subject being 54 years old. In Johor Bahru district, out of 36 cases detected from the screening, 24 (66.7%) were intravenous drug users while the others were infected through sexual activities.

### Post Pre Marital HIV Screening Advancement

Out of 37 positive cases from the pre-marital screening programme in 2004, 24 (64.9%) married their intended partners. All the couples went through counselling by both the Health Department and the Islamic Religious Department prior to their marriage (including spouse counselling). Two cases defaulted and were lost to follow up (Table IV).

In three couples, both partners were HIV positive. More male partners who were tested positive for HIV proceeded to marriage compared to the HIV positive woman. A total of 16 male HIV positive subjects compared to six female positive subjects proceeded to marriage. Only three HIV negative males married HIV positive females (Table V).

Table I: HIV among woemn in Johor (1996-2001)

Year	1996	1997	1998	1999	2000	2001
No. of cases	22	35	52	95	79	89

Table II: Output of HIV screening programmes in Johor

Year	2001	2002	2003	2004
Total no. of person screened	65215	85801	90426	92761
Total no. of HIV cases reported	1116	1443	1183	691
HIV positivity rate	1.71%	1.68%	1.31%	1.08%

Table III: Output of pre-marital HIV screening programme

Year	2002	2003	2004	Total
Total no. of person screened	24,391	24,751	25,068	74,210
Total no. of positive cases	30	56	37	123
Positivity Rate	0.12%	0.23%	0.15%	0.17%

Table IV: Positive HIV cases and their marital status in 2004

No. of cases	Proceeded to marriage	Did not proceed to marriage	Unknown
37	24	12	1

Table V: Description of partner HIV status before marriage

HIV status prior marriage		No. of person
Male (positive)	Female (positive)	6
Male (positive)	Female (negative)	13
Male (negative)	Female (positive)	3
Male (positive)	Female (unknown)	2

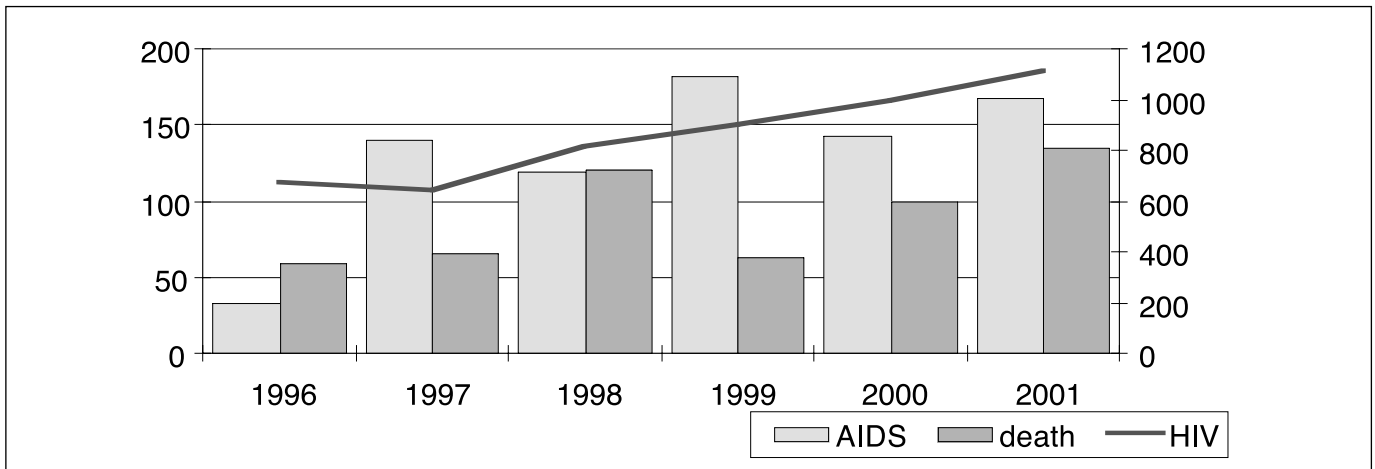


Fig. 1: Trend of HIV, AIDS and AIDS related death in Johor.

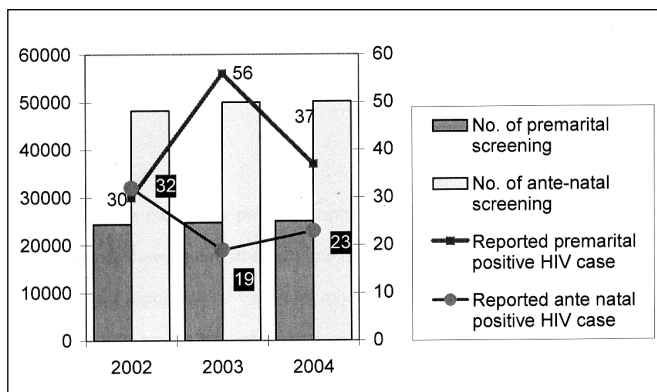


Fig. 2: Pre-marital screening and ante-natal screening outputs.

**DISCUSSION**

**The HIV / AIDS Situation**

A previous study has found that the overall prevalence of AIDS infection among spouses of patients with AIDS was 58%, which demonstrated a high rate of transmission of the HIV among heterosexual couples. The findings also supported the concept that the HIV virus is not spread through close contact other than intimate sexual or blood exposure<sup>6</sup>.

Thus it is considered necessary to have a properly structured screening programme for those at risk especially newly wed. Pre-marital HIV screening had been proposed in some countries but received strong opposition from various parties. The premarital HIV screening was also proposed during the CDC conference in Atlanta in 1987, but did not receive widespread support then, because it was thought that this programme satisfied neither the proponents of public health nor the proponents of civil liberties<sup>7</sup>.

In Johor, promotional activities prior to adoption of the premarital HIV screening was started in February 2001. A lot of seminars, fora, meetings and discussions had been organized among all the parties / agencies involved and the public at large. Most of the concerned people had agreed to the commencement of the programme. Group counselling was carried out before marriage applicants underwent the screening programme and the premarital HIV screening process was explained to participants. Participants were

advised on the best response after the test results were discovered. In 2004, 24 out of 37 HIV cases (64.9%) progressed to marriage and six married among themselves. For HIV positive cases, the decision to proceed to marriage is dependant upon both parties agreeing. The public health services aim is to educate the couples on safety precautions after marriage and how to minimize the risk of spouse or other people contracting the disease including the use of condom. Eligible HIV positive respondents were enrolled into treatment programme using H.A.A.R.T. (Highly Active Anti Retroviral Therapy). There is no decrease in marriage registration in Johor since the implementation of the premarital HIV screening programme. In fact the number of persons screened increased 2.8% from 24,391 in 2002 to 25,068 in the year 2004.

Besides premarital screening, ante natal screening is a compulsory test to all pregnant mothers that visit government clinics. The HIV positivity rate among total premarital respondents (2002-2004) is higher at 0.17% in comparison to antenatal screening during the corresponding period at 0.05% (Fig. 2).

Since the launching of pre-marital HIV screening in 2001, it was noted that the HIV positivity rate among ante-natal mothers declined from 0.07 (2002) to 0.04 (2004). (Figure 2). The low prevalence of HIV among ante natal mother could be an indication that early detection of HIV infection had taken place in Johor. Total number of HIV cases reported in Johor dropped 38% from 1116 cases in 2001 to 691 cases in 2004 despite the increase in screening from 65,215 (2001) to 92761 (2004). This may indicate that increased coverage had been implied and concurrently the awareness of the public on HIV had improved.

The premarital HIV screening programme contributed to the early detection of HIV cases thus treatment of new positive cases could be instituted early. The pre-marital screening programme had contributed to more options in HIV screening particularly the younger generation and help prepare them for the years of living with HIV infection. Early detection and subsequent counselling provides an opportunity for the spouse to make an informed decision prior to marital agreement.

## CONCLUSION

This programme may have partially contributed to increased awareness but there may also have been other confounding factors that lead to reduction in the number of reported HIV cases in Johor. In comparison to ante-natal HIV screening, the premarital screening provided an earlier opportunity in detection of HIV. Premarital HIV screening can be considered as one of the effective measures in early detection of HIV for prevention of maternal to child HIV transmission and through increased awareness helps reduce the chances of further transmission. This programme had been easily be integrated into the existing work system in all the health clinics.

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## REFERENCES

1. UN High-Level Meeting on AIDS: Launch of the 2006 Report on the Global AIDS Epidemic. Website:<http://www.who.int/hiv/mediacentre/news60/en>
2. Ministry of Health Malaysia. HIV Infection, AIDS Cases and AIDS Death Reported in Malaysia, 1986 to Dec 2005. Website:<http://dph.gov.my/dcd/aids/>
3. Johor State Health Department. Pencegahan dan Kawalan Penyakit Berjangkit. Laporan Tahunan 2001.
4. Johor State Health Department Records of HIV infection 1989-2003 (unpublished).
5. Kannagai R, Prabu K, Vincent AA, Vijayakumar TS, Sridharan G. Performance evaluation of four different kits available in the Indian market, for the rapid detection of HIV antibody. *Indian J Med Microbiol* 2003; 21: 193-95.
6. Evaluation of heterosexual partners, children and household contacts of adults with AIDS. *JAMA*, v. 257, 1987; 640-44.
7. Reamer, Frederic G. *AIDS & Ethics*. Columbia University Press: New York, 1991.