HIV/AIDS IN ASIA

Health Studies Branch
International Programs Center
Population Division
U.S. Bureau of the Census

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Preface

The International Programs Center of the Population Division conducts specialized studies of population, economics, labor force, health and aging issues. However, the use of data not generated by the Bureau of the Census precludes performing the same statistical reviews normally conducted on its own data.

This research note is the eighteenth of a series of short research documents resulting from analysis conducted in the Health Studies Branch. Distribution in the research note format is intended to allow for rapid dissemination of results to a specialized audience, highlighting recent developments or emerging trends. Reports containing a more thorough presentation and discussion of research findings will continue to be issued in the International Programs Center Staff Paper series.

This note was prepared by the staff of the Health Studies Branch—Jinkie Corbin, Anne Ryan, Peggy Seybolt, Lisa Mayberry, and David Rudolph and edited by Karen Stanecki De Lay, Chief, Health Studies Branch. Peter O. Way, Special Assistant, International Programs Center, Population Division, also reviewed the report and provided comments. The preparation of this report was supported by funding from the U.S. Agency for International Development.

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Country Profiles for Asia Countries:

Burma
Cambodia
China, Mainland
India
Indonesia
Laos
Malaysia
Philippines
Singapore
Thailand
HIV/AIDS in Asia

Introduction

This report provides an overview of the epidemiological patterns and trends of the Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) in Asia. Due to limited data, it is difficult to accurately show the extent of HIV infection for all Asian countries. Therefore, the focus of this paper is limited to the following:

Southeast Asia: Brunei, Burma, Cambodia, Indonesia, Laos, Malaysia, Papua New Guinea, Philippines, Singapore, Thailand, and Vietnam

South Asia: Bangladesh, Bhutan, India, Maldives, Nepal, and Sri Lanka

East Asia: China (Mainland and Taiwan), Hong Kong, Macau, Mongolia, South Korea

This paper presents data from the July 1995 version of the HIV/AIDS Surveillance Database maintained by the International Programs Center, Population Division, U.S. Bureau of the Census. The database contains about 24,000 data items drawn from 3,100 publications and presentations.

Based on a review of available data, we examine the current status of the HIV epidemic by presenting selected and illustrative HIV prevalence data among various population groups within each Asian region. Furthermore, we describe trends and patterns and geographic variation of the HIV virus.

In this paper, the terms "high risk" and "low risk" describe various sampled populations. The high-risk category refers to studies of intravenous drug users (IVDU), commercial sex workers (CSWs) and sexually transmitted disease (STD) patients. The low-risk category refers to studies of pregnant women, blood donors and general populations.

Additional and more detailed information may be available at the country level and are presented in the annex.

Background

As the AIDS epidemic starts to unfold in Asia, the home of half the world's population, HIV infection rates in certain population groups have already become among the highest in the world. The recent explosion of the AIDS epidemic in South and Southeast Asia shows that no society can consider itself immune to AIDS.

As of July 1995, the World Health Organization Global Programme on AIDS
estimated that over 3.5 million people are HIV infected in Asia. As the epidemic takes hold in South and Southeast Asia, there has been an 8-fold increase in the number of AIDS cases in the past year from 30,000 to about 250,000. The percent of AIDS cases estimated in Asia has risen from 1 percent in mid-1993 to 6 percent in mid-1995 of the global total\textsuperscript{1,2,3} primarily due to the rapid growth of AIDS in South/Southeast Asia.

By the turn of the century, experts estimate that the majority of new HIV infections in the world will occur in Asia\textsuperscript{4} and that the epidemic in Asia will eventually surpass the one that has been ravaging Sub-Saharan Africa\textsuperscript{5}. Furthermore, India will probably have the largest number of infected persons of any single country in Asia. With the population of India reaching 1 billion within 5 years, the HIV epidemic has the potential to have a dramatic impact on this country.

In addition to India, major HIV epidemics already exist in Thailand and Burma (Myanmar). HIV infection in these countries has already progressed beyond the groups whose behavior puts them at highest risk and has spread to the general population. Also, the epidemic has begun to emerge in Cambodia, Vietnam, Indonesia, China, Taiwan, Singapore and the Philippines. However, within each country the extent of the epidemic varies.

As the epidemic emerges in Asia in the 1990's, the experience and lessons learned in Africa should be used to develop strategies for control and prevention of AIDS. Additionally, lessons already learned in some Asian countries, such as in Thailand, can speed the development of Asian models to be adapted for use in other countries of the region.

**Epidemiological Aspects**

Epidemiological studies throughout the world have been conducted to assay the prevalence of HIV. Although the extensive spread of HIV in Asia has been predominantly in South and Southeast Asia, this spread began only in the mid 1980's or even later and the progression has been rapid.

The pattern of HIV spread in Asia appears to be different from those seen in the U.S., Europe, and Africa. HIV was introduced much later in Asia than the rest of the world and was first noted among IVDU. Subsequently, as described by researchers in Thailand, rapid increases were detected among CSWs and their clients (e.g., men attending STD clinics). The HIV epidemic is now spreading to their girlfriends, wives, and children.

The following discussion describes HIV seroprevalence levels among these various groups.

1. **IV Drug Users**

The largest increases in HIV infection have been among IVDU in at least three countries, Thailand, Burma, and India. In addition, China’s Yunnan Province, which is a part of the "Golden Triangle," has reported high prevalence rates among IVDU.

In Thailand, HIV prevalence among IVDU rapidly increased within a few years. Figure 1 displays seroprevalence rates reported for Bangkok from 1988 to 1991. The HIV seroprevalence level increased dramatically during 1988, jumping from a level of 1.2 percent in January to 31.2 percent in September. From there, the rate
steadily increased to 45.0 percent in June 1991. Sentinel surveillance data for December 1994 from the Thailand Ministry of Health reported over 35 percent of the IVDU in all four regions of Thailand were infected with HIV.

Over 80 percent of IVDU tested in Mandalay and Myitkyina are HIV positive and 75 percent in Rangoon are HIV positive (Figure 2).

In India, studies of HIV infection among IVDU in various areas reported levels up to 80 percent. (Figure 3).

Data from the northeastern state of Manipur indicate an HIV infection level of 55 percent for the first quarter of 1994. In addition, a 1991 National survey of 3,521 IVDU reported a seroprevalence level of 38.4 percent.

A concentration of HIV infection has been detected in Yunnan Province, China, bordering on Burma and Laos and near Thailand. In this province, a study conducted in Ruili county and two neighboring counties, Luxi and Longchuan, revealed prevalence levels of 81.8 percent, 5.1 percent and 44.6 percent, respectively, among IVDU (Figure 4). These three counties are located just across the border from Burma. Another study in Yingjiang county found an HIV prevalence level of 17.4 percent among IVDU.
Since 1988, HIV seroprevalence studies among IVDU have been conducted in a few other Asian countries. Relatively low levels of HIV infection were found among IVDU in Nepal, Taiwan, Philippines, and Singapore (Figure 6). There was no evidence of HIV among IVDU reported from studies conducted in Indonesia and Hong Kong through the early 1990's.

2. Commercial Sex Workers

HIV infection has been reported among commercial sex workers in Southeast Asia and South Asia, especially in Thailand and India. A few studies from selected East Asian countries report no HIV infection found as yet among commercial sex workers.

In Southeast Asia, all four regions of Thailand reported levels of HIV infection over 20 percent among commercial sex workers. The North region of Thailand has consistently had the highest level of infection among the regions. The Central region has recently reported similar seroprevalence levels, 39 percent in the December 1994 reporting period (Figure 7).
In India, located in South Asia, the levels of HIV infection among commercial sex workers vary greatly. Figure 10 shows HIV levels in 8 out of 12 areas in India for which data are available are 15 percent or above.

Figure 7

Data from sentinel surveillance in Burma indicate HIV seroprevalence among CSW increased from 0 to 7 percent in Rangoon and from 5 to 15 percent in Mandalay in just one year (Figure 8). Other studies in Cambodia, Malaysia, and the Philippines found HIV prevalence levels less than 10 percent, as shown in Figure 9.

Figure 9

Figure 10

Figure 11 displays the trend in HIV seroprevalence among CSWs in India. Studies in all of the cities, with the exception of Calcutta, report a dramatic increase in HIV levels. HIV seroprevalence levels are highest in Bombay at 45 percent.
in 1993. Studies in Calcutta indicate a steady seroprevalence level around 1 percent.

3. STD Patients

Various studies clearly document the spread of HIV among sexually transmitted disease (STD) patients. All of the areas for which data are available show that HIV is present among this population group. Once again, the highest show HIV infection levels are found in South and Southeast Asia, mainly India and Thailand.

In Figure 12, data from sentinel surveillance in Yunnan Province, China, show seroprevalence levels among CSWs still under 1 percent despite the high levels of infection among IVDU already noted.
From Thailand’s sentinel surveillance system, HIV prevalence among male STD patients steadily increased from June 1990 to December 1994 in all regions except the North (Figure 13). North region data reported through the sentinel surveillance program indicate a decrease in HIV seroprevalence among STD clinic patients since December of 1993 where rates were the highest. Similar decreases in STD rates have been seen in Bangkok. Officials credit the AIDS education programs and the condom-only brothels with this decrease.

HIV seroprevalence levels within Burma have also increased among STD clinic patients since 1989 (Figure 14). By early 1991, HIV seroprevalence had reached 11 percent. The 1992 sentinel data show HIV seroprevalence at 8.9 percent.

HIV Seroprevalence for STD Clinic Patients in Four Cities in India: 1985-1994

Figure 15

Studies conducted in Agra, Bombay, Pune, and Vellore show HIV infection levels among Indian STD patients increased rapidly over the past few years (Figure 15). Studies in other cities in India (Figure 16) report HIV prevalence levels from 1 to 22 percent from 1991 to 1994.


Figure 16

Meanwhile, various studies among STD clinic patients in other parts of Asia found HIV prevalence levels ranging from no evidence of the virus in the Philippines, Indonesia, and Mongolia to 4.2 percent among STD clinic patients in Cambodia (Figure 17).

HIV Seroprevalence for STD Clinic Patients in Asia: 1986-1994

Figure 17
4. Pregnant Women

Seroprevalence studies among pregnant women in Asia have reported generally low levels of HIV infection, but these data may indicate the beginning of a substantial epidemic in the general population.


In Thailand, sentinel surveillance among pregnant women in urban areas provides firm evidence that HIV is spreading to the general population. HIV seroprevalence increased in all four regions from June 1990 to June 1994 among pregnant women (Figure 18). However, in the North, after reporting HIV seroprevalence over 4 percent in June 1994, a decrease was reported in December 1994, mirroring decreases seen among the male STD clinic patients.

HIV infection was detected in Burma among pregnant women in early 1991 at 0.3 percent. Sentinel surveillance in 1992-1993 did not detect HIV infection among pregnant women in Rangoon or Mandalay. However, in 7 other cities, HIV infection has been detected among this population. HIV infection rates have increased dramatically in Tachileik (Figure 19).

HIV Seroprevalence for Pregnant Women Seven Cities in Burma: 1992-1993

In Thailand, sentinel surveillance among pregnant women in urban areas provides firm evidence that HIV is spreading to the general population. HIV seroprevalence

HIV infection has also been found among pregnant women in India. Studies from different areas in India indicate HIV infection among pregnant women at varying levels up to 3.8 percent (Figure 20).

Other studies in Asia from Nepal, Indonesia, Cambodia, Mongolia, China, and Macau have shown no evidence of the HIV virus among pregnant women as yet.
5. Blood donors

Data for HIV infection among blood donors in Asia confirms the spread to the general population, as noted above, while also reflecting the varying effectiveness of blood screening programs.

![HIV Seroprevalence for Blood Donors: Southeast Asia, 1989-1994](image)

Figure 21

HIV seroprevalence data from the Cambodia National Center for Blood Transfusion show a dramatic increase from less than 0.1 percent in 1991 to 3.5 percent in 1993 among blood donors (Figure 21). Data from the Thailand Ministry of Health National Sentinel Surveillance indicate a relatively low but steady infection level. HIV seroprevalence levels in Burma have remained below 1 percent. From 1992 to 1993, studies in Laos reported a fourfold increase among blood donors, though the infection level still had not exceeded 1 percent. These variations may reflect differences in blood screening programs.

Figure 22 shows HIV seroprevalence data for voluntary blood donors in India. These five cities show different patterns over time. The HIV prevalence level among blood donors in Pune more than doubled in just one year. In Calcutta, Hyderabad,

![HIV Seroprevalence for Volunteer Blood Donors in Selected Cities: India, 1987-1993](image)

Figure 22

Bangalore and New Delhi all report positive HIV seroprevalence levels but at a level below 0.5 percent through 1992-93. In Bombay, HIV seroprevalence levels were higher among paid donors from 1989 to 1993 than among volunteers. Infection levels among the volunteer donors remained steady around 1 percent over the 5-year period. (Figure 23)
Geographic Distribution

Data are not currently available to provide a detailed geographic picture of HIV for all countries in Asia. However, for Thailand, India and China sufficient data are available to look at the geographic variation in current levels of HIV infection.

The Thailand Ministry of Health National Sentinel Surveillance data for December 1994 indicate HIV infection among pregnant women is highest in the north region where several provinces have prevalence levels over 5 percent. Phayao Province, located in the north region, reported a prevalence rate of 10.7 percent among pregnant women, the highest prevalence rate among all of the provinces for which data were available.

The HIV virus has moved into the general population of Thailand. Among pregnant women, the HIV virus is present throughout Thailand (Map 1). Most striking is that only four years ago there were no provinces with HIV levels over 5 percent and only 13 provinces reporting any HIV infection at all.

Thailand’s "Direct" commercial sex workers are those working in brothels; they represent a population at very high risk of infection. In June 1994, most of the provinces reported HIV levels among this group over 15 percent. Lamphun Province, located in the north region, reported the highest percent infected, 62.7 percent. In every region at least one province reported a prevalence rate over 25 percent among direct commercial sex workers.

In India, high levels of HIV seroprevalence among CSWs are found in Maharashtra state, Rajasthan state and Tamil Nadu state (Map 3). The data available suggest that HIV infection among CSWs in India is concentrated in the western and southern states.
HIV Sero-prevalence for Commercial Sex Workers in India

Note: The HIV seroprevalence levels for each state must be viewed with caution because they are represented by the results of a single study and may not be representative of the entire state.

HIV Seroprevalence for Commercial Sex Workers in Yunnan Province, China

Map 4

Map 4 depicts HIV seroprevalence levels among commercial sex workers in Yunnan Province, China. The highest levels are located in the prefectures bordering Burma. Sentinel surveillance of CSWs conducted in Simao prefecture revealed a seroprevalence level of 3.3 percent. The second highest level, 0.6 percent, was reported in Dehong prefecture. The remaining six prefectures for which data are available found no evidence of HIV infection. HIV has reached the CSW population in this region; however, the data available imply that the epidemic still is low.

Conclusion

HIV prevalence studies show wide differences in infection rates between population groups. However, in most Asian countries, except for Thailand, India, Burma and Malaysia, it is difficult to show the extent of HIV infection and to determine trends because of the limited data available.
Although HIV was introduced into Asia at a later date than much of the rest of the world, the virus has already been detected in the general populations of a number of countries in the region. The situation and trends are still unfolding and HIV continues to spread, revealing itself in one location after another. Governments in the region, as elsewhere in the world, have been slow to react to this threat to their population.

Notes


This report was prepared with funding support from the U.S. Agency for International Development. For more detailed information, contact Karen Stanecki De Lay or Peter O. Way, International Programs Center, U.S. Bureau of the Census, Washington, DC 20233; telephone (301) 457-1406.
The following list contains the complete citation for data used in the graphs and maps of the "HIV/AIDS in Asia" paper.


B0247 Babu, P. G., T. Ishida, V. Nerurkar, et al., 1994, Epidemiology of Retroviral Infections in South India, Tenth International Conference on AIDS, Yokohama, Japan, 8/7-12, Poster P.C.0082.


C0178 Cheng, H., J. P. Zhang, S. D. Zhao, et al., 1994, Epidemiological Pattern of HIV Infection in Yunnan Province, China, Tenth International Conference on AIDS, Yokohama, Japan, 8/7-12, Session 042C.


F0052 Francis, A., J. Jacob, 1992, Hospital Based Serosurveillance for HIV in St. Stephen's Hospital, 2nd International Congress on AIDS in Asia and Pacific, New Delhi, India, 11/8-12, Poster A109.


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L0162 Liu, J., J. P. Zhu, 1994, HIV Infection among STD Clinic Patients in Zhejiang, Tenth International Conference on AIDS, Yokohama, Japan, 8/7-12, Poster P.C.0571.


L0166 Lel, S., L. Khodakevich, P. Salil, 1994, HIV Infection in India - Trends Analysis, Tenth International Conference on AIDS, Yokohama, Japan, 8/7-12, Session 039C.


M0270 Malhotra, V. L., A. Sharma, P. K. Pillai, et al., 1993, Serosurveillance of HIV Infection and Its Correlation with Other Sexually Transmitted Diseases in Delhi, India, IX International Conference on AIDS, Berlin, 6/6-11, Abstract PO-C20-3062.


M0365 Mehandale, S., J. J. Rodrigues, R. Gangakhedkar, et al., 1994, STDs and HIV Infection in CSWs of Pune, India, Tenth International Conference on AIDS, Yokohama, Japan, 8/7-12, Abstract P.C.0351.

M0138 Ngeow, Y. F., 1994, STD and HIV Epidemiology in Asia, Tenth International Conference on AIDS, Yokohama, Japan, 8/7-12, Session PS7.


P0119 Paul, S., S. Chakrabarty, S. Chakrabarti, et al., 1994, HIV Infection amongst Commercial Sex Workers (CSW) of Calcutta. A Period of 3 Years Study, Tenth International Conference on AIDS, Yokohama, Japan, 8/7-12, Poster P.C.0367.
Sources for HIV/AIDS in Asia cont.

R0106 Raman, R., 1994, HIV Serosurveillance in High Risk Groups and Effect of Mass Media Approach, Tenth International Conference on AIDS, Yokohama, Japan, 8/7-12, Poster P.C.0452.
S0295 Seth, P., N. Khanna, S. Broor, et al., 1994, HIV Infection in STD Patients in New Delhi, Tenth International Conference on AIDS, Yokohama, Japan, 8/7-12, Poster P.C.0567.
T0115 Tia, P., S. L. Kruy, S. Teo, et al., 1994, Epidemiology of HIV in Cambodia, Tenth International Conference on AIDS, Yokohama, Japan, 8/7-12, Poster P.C.0621.
Sources for HIV/AIDS in Asia cont.

Burma

Demographic Indicators

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Note: Above indicators are for 1995.

Cumulative AIDS rate (per 1,000) as of 4/17/95 | 0.01
Cumulative AIDS cases as of 4/17/95 | 475


Epidemiological Data

- Sentinel surveillance data from four sites in Burma show high levels of HIV infection among intravenous drug users. In September 1993, infection levels ranged from 27 percent in Taunggyi to 95 percent in Myitkyena.

• From the same sentinel surveillance data, HIV seroprevalence levels among commercial sex workers in the capital, Rangoon, increased from 0 percent in March 1992 to 7 percent in September 1993. In Mandalay, the former capital, the HIV level steadily increased from 4.5 percent in March 1992 to 15.0 in September 1993.

• Sentinel surveillance conducted among STD patients in the capital city, Rangoon, shows HIV infection levels increasing to 6.4 percent in September 1993.

• Reports from eight sentinel sites in Burma show varying levels of HIV infection among male STD patients. In September 1993, HIV levels ranged from 2.0 percent in Mawlamyaing to 23.9 percent in Kawthaung.

• Over a period of a year and a half, HIV infection levels among pregnant women in Tachileik increased from 4 percent to 12 percent. Other cities for the year 1993 showed lower levels of HIV infection, less than 3 percent.

• According to the same sentinel surveillance, from March 1992 to September 1993, the percent of blood donors HIV positive has remained relatively the same in both Rangoon and Mandalay, around 0.5 percent.

Sources for Burma

Demographic Indicators

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<td>Percent Urban</td>
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Note: Above indicators are for 1994.

Cumulative AIDS rate (per 1,000) as of 3/31/94: 0.00
Cumulative AIDS cases as of 3/31/94: 0


Epidemiological Data

- Very few studies on HIV seroprevalence among commercial sex workers have been available for Cambodia. However, in an AIDS surveillance report from the World Health Organization, HIV infection among commercial sex workers in Phnom Penh and the provinces was reported to be 9.2 percent for 1992.

• Seroprevalence studies conducted in Phnom Penh and the provinces in 1992 and 1993 found HIV infection levels to be over 4 percent among STD patients.

• Data from the National Blood Transfusion Center in Phnom Penh, the capital, indicate a rapid increase in HIV seroprevalence rates among blood donors from 0.1 percent in 1991 to 3.5 percent in 1994. This increase in the general population, as seen among blood donors, shows an alarming situation for the Cambodian government.

Sources for Cambodia

T0115 Tia, P., S. L. Kruy, S. Tea, et al., 1994, Epidemiology of HIV in Cambodia, Tenth International Conference on AIDS, Yokohama, Japan, 8/7-12, Poster P.C.0621.
China, Mainland

Demographic Indicators

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Note: Above indicators are for 1994.

Cumulative AIDS rate (per 1,000) as of 12/31/93: 0.0
Cumulative AIDS cases as of 12/31/93: 36


Epidemiological Data

- Yunnan Province, bordering Burma, Laos and Vietnam, reports high levels of HIV seroprevalence among intravenous drug users. These four counties indicate a wide range in prevalence levels varying from 5.1 percent in Luxi to 81.8 percent in Ruili.

In Yunnan Province, located in southwestern China, HIV seroprevalence among commercial sex workers showed no evidence of the virus in 1989 and 1990. However, since 1991 prevalence levels have ranged from 0.1 percent to 0.4 percent.

Data available from prefectures in Yunnan Province show the highest levels of HIV infection among commercial sex workers are located in those prefectures bordering Burma. Sentinel surveillance conducted in Simao prefecture revealed the highest HIV seroprevalence level, 3.3 percent. The remaining prefectures report HIV levels of less than 1 percent.

A study conducted from 1991-1993 among STD clinic patients in Zhejiang reports HIV seroprevalence levels of 0.3 percent.

Sentinel surveillance of HIV prevalence among pregnant women in Yunnan Province found a level of 0.1 percent for 1986-1993. Another study conducted among 83,109 blood donors reported a prevalence level of 0.0 percent.

Sources for China, Mainland

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LO162 Liu, F., J. P. Zhu, 1994, HIV Infection among STD Clinic Patients in Zhejiang, Tenth International Conference on AIDS, Yokohama, Japan, 8/7-12, Poster P.C.0571.


India

Demographic Indicators

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Note: Above indicators are for 1994.

Cumulative AIDS rate (per 1,000) as of 6/14/94: 0.00
Cumulative AIDS cases as of 6/14/94: 713


Epidemiological Data

- In the northeastern states, HIV infection among intravenous drug users (IVDU) has skyrocketed. HIV prevalence levels rose from 8.6 in 1989 to over 50 percent in the 1990's.

• Studies of HIV infection among IVDU in various areas reported levels up to 80 percent. In addition, a 1991 national survey of 3,521 IVDU reported a seroprevalence level of 38.4 percent.

• Various studies clearly document the spread of HIV among prostitutes. In this high risk population, HIV infection increased sharply in these cities over the past six years. The highest levels of HIV infection were found in Bombay, 45 percent and Pune, 40.7 percent.

• HIV infection levels among prostitutes in Calcutta are relatively low, less than 2 percent.

HIV infection levels among STD clinic patients in various cities in India increased rapidly over the past few years. In Bombay, levels rose from less than 1 percent in 1987-88 to 24.0 percent in 1994. In Pune, HIV infection levels increased rapidly to 18.6 percent by 1993. Calcutta reports the lowest level of only 0.5 percent in 1993.

In New Delhi, the capital, HIV levels among STD patients reached 2.6 percent in 1993.

Studies of HIV seroprevalence among STD clinic patients in various areas of India report HIV infection levels ranging from 22 percent in Hubli to 3 percent in Madurai.

• HIV infection has also been found among low-risk populations in India. According to this study in Tamil Nadu State, HIV infection levels in the general population have doubled each year since 1989.

• Among selected cities, levels of HIV seroprevalence in pregnant women varied. In Pune, HIV levels increased dramatically from 0.7 in 1991 to 3.8 in 1992.

• Data from some states show HIV infection levels among pregnant women less than 1 percent. However, sentinel surveillance for the first quarter in 1994 in Manipur State reported a level of 2 percent.

• HIV seroprevalence data for blood donors in several cities show a variety of different patterns over time. In Agra, HIV infection levels have decreased, while HIV infection levels in Madras and Pune have increased. HIV levels in the other cities remained the same during this period. These variations may reflect differences in blood screening programs.

• HIV seroprevalence data for blood donors in New Delhi report low levels of less than 1 percent. However, the infection level increased from 0.2 percent in 1987 to 0.4 percent in 1992.

• HIV seroprevalence levels among blood donors in Bombay report higher levels of infection among the remunerated donors from 1989 to 1993. The infection levels among non-remunerated donors remained steady over the 5 year period.

HIV seroprevalence data on blood donors in Gujarat from 1991-1994 show HIV-1 infection is more prevalent than HIV-2 or dual infection.

Sources for India


B0247 Babu, P. G., T. Ishida, V. Nerurkar, et al., 1994, Epidemiology of Retroviral Infections in South India, Tenth International Conference on AIDS, Yokohama, Japan, 8/7-12, Poster P.C.0082.

C0175 Chakrabarty, M. S., P. N. Dey, S. Paul, et al., 1994, Seroepidemiology of HIV Infection in Calcutta, Tenth International Conference on AIDS, Yokohama, Japan, 8/7-12, Poster P.C.0083.


F0052 Francis, A., J. Jacob, 1992, Hospital Based Serosurveillance for HIV in St. Stephen's Hospital, 2nd International Congress on AIDS in Asia and Pacific, New Delhi, India, 11/8-12, Poster A109.


L0166 Lal, S., L. Khodakevich, P. Salil, 1994, HIV Infection in India - Trends Analysis, Tenth International Conference on AIDS, Yokohama, Japan, 8/7-12, Session 03C.


M0365 Mehandale, S., J. J. Rodrigues, R. Gangakhedkar, et al., 1994, STDs and HIV Infection in CSWs of Pune, India, Tenth International Conference on AIDS, Yokohama, Japan, 8/7-12, Abstract P.C.0351.


P0119 Paul, S., S. Chakrabarty, S. Chakrabartl, et al., 1994, HIV Infection amongst Commercial Sex Workers (CSW) of Calcutta. A Period of 3 Years Study, Tenth International Conference on AIDS, Yokohama, Japan, 8/7-12, Poster P.C.0367.
Sources for India cont.


RO106 Raman, R., 1994, HIV Serosurveillance in High Risk Groups and Effect of Mass Media Approach, Tenth International Conference on AIDS, Yokohama, Japan, 8/7-12, Poster P.C.0452.


SO295 Seth, P., N. Khanna, S. Broor, et al., 1994, HIV Infection in STD Patients in New Delhi, Tenth International Conference on AIDS, Yokohama, Japan, 8/7-12, Poster P.C.0567.

Indonesia

Demographic Indicators

<table>
<thead>
<tr>
<th>Population (1,000s)</th>
<th>203,459</th>
<th>Growth Rate (%)</th>
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<tbody>
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<td>Life Expectancy</td>
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<td>71</td>
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<tr>
<td>Female</td>
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<td>Female</td>
<td>63</td>
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<td>Crude Death Rate (per 1,000)</td>
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<tr>
<td>Total Fertility Rate</td>
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<td>Percent Urban</td>
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</tr>
</tbody>
</table>

Note: Above indicators are for 1995.

Cumulative AIDS rate (per 1,000) as of 11/20/94 | 0.00
Cumulative AIDS cases as of 11/20/94 | 80


Epidemiological Data

- Seroprevalence data from Indonesia is very limited. However, a sero-survey done in 13 provinces among commercial sex workers and transvestites found low and fluctuating HIV infection between 1988-1992.

• A recent study among commercial sex workers in East Java showed an HIV infection level of 0.3 percent.

HIV Seroprevalence for Commercial Sex Workers in East Java, Indonesia: 1994

There have been few studies of HIV infection published in Indonesia for the low risk population groups. Those studies conducted between 1986-1992 reported no evidence of HIV infection among pregnant women or blood donors.

Sources for Indonesia


Laos

Demographic Indicators

<table>
<thead>
<tr>
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<td>Male</td>
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<td>Percent Urban</td>
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</table>

Note: Above indicators are for 1994.

Cumulative AIDS rate (per 1,000) as of 3/31/94: 0.0
Cumulative AIDS cases as of 3/31/94: 14


Epidemiological Data

- Very few reports on HIV seroprevalence in Laos are available. A study conducted among commercial sex workers from January 1990 through April 1993 found a prevalence level of 1.2 percent.

- An HIV seroprevalence study among refugees from Thailand and China reported an HIV infection level of 0.5 percent. Individuals voluntarily tested for HIV infection had a prevalence level of 0.2 percent.

- The 1993 report from the Ministry of Health in Laos showed HIV seroprevalence levels among blood donors less than 1 percent from 1992 through June 1993.

Sources for Laos


Malaysia

Demographic Indicators

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<th>Population (1,000s)</th>
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<td>Growth Rate (%)</td>
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<td>Female</td>
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<td>Crude Birth Rate (per 1,000)</td>
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<td>Crude Death Rate (per 1,000)</td>
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<td>Total Fertility Rate</td>
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<td>Percent Urban</td>
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</table>

Note: Above indicators are for 1995.

Cumulative AIDS rate (per 1,000) as of 1/31/95 | 0.01
Cumulative AIDS cases as of 1/31/95 | 200


Epidemiological Data

- The highest levels of HIV infection among IVDU in Malaysia were found in Kota Bharu, the capital city of Kelantan State, a northeastern state bordering Thailand. In 1992, HIV infection levels of nearly 30 percent were reported.

Surveillance reporting to WHO indicate that HIV seroprevalence levels among IVDU steadily increased from 0.1 percent in 1988 to 6.9 percent in 1991.

There was no reported evidence of the HIV virus among commercial sex workers until 1990. In one year HIV infection levels increased from 1.0 percent to 2.0 percent.

According to this study, the HIV seroprevalence level among STD clinic patients in Penang was 1.9 percent in 1994. In a 1990 study conducted in Kuala Lumpur, no STD clinic patients were HIV positive.

Sources for Malaysia


Philippines

Demographic Indicators

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<td>Male</td>
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<td>Female</td>
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<td>Percent Urban</td>
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</table>

Note: Above indicators are for 1995.

Cumulative AIDS rate (per 1,000) as of 2/27/95: 0.00
Cumulative AIDS cases as of 2/27/95: 198


Epidemiological Data

- A series of studies reported very low levels of HIV infection among prostitutes in various towns. The highest level found was 0.6 percent, in Quezon & Cebu.

• National HIV testing results among high risk populations from 1985-1992 show homosexuals to have the highest level of HIV infection, 2.2 percent, followed by intravenous drug users, 1.6 percent. Commercial sex workers and STD patients showed little or no evidence of the virus in these studies.

• National testing shows virtually no HIV infection among both the paid and volunteer blood donors since 1985.

Sources for Philippines

H0042 Hayes, C. G., C. R. Manaloto, V. Basaca-Sevilla, et al., 1989, Epidemiology of HIV-1 Infection among Prostitutes in the Philippines, U. S. Naval Medical Research Unit no. 2, Manila. (draft manuscript)

Singapore

Demographic Indicators

<table>
<thead>
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<td>Crude Death Rate (per 1,000)</td>
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<td>Total Fertility Rate</td>
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<td>Percent Urban</td>
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</table>

Note: Above indicators are for 1995.

Cumulative AIDS rate (per 1,000) as of 12/31/94 | 0.04 |
Cumulative AIDS cases as of 12/31/94            | 123  |


Epidemiological Data

- There has been little published HIV seroprevalence data on IVDU for Singapore. In 1992 there was no evidence of HIV among IVDU. However, by 1994, HIV infection was discovered among IVDU (0.2%).

• Studies of HIV seroprevalence levels among commercial sex workers show an increase from 0 in 1992 to 3.7 percent for the first half of 1994.

• Sentinel testing among STD clinic patients show HIV prevalence levels less than 1.0 percent for the period January 1992 through June 1993.

Sources for Singapore


NO13B Ngeow, Y. F., 1994, STD and HIV Epidemiology in Asia, Tenth International Conference on AIDS, Yokohama, Japan, 8/7-12, Session PS7.

Thailand

Demographic Indicators

<p>| | | | |</p>
<table>
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<tbody>
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<td>Both Sexes</td>
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<tr>
<td>Female</td>
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<td>Female</td>
<td>72</td>
</tr>
<tr>
<td>Crude Birth Rate (per 1,000)</td>
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<td>Crude Death Rate (per 1,000)</td>
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</tr>
<tr>
<td>Total Fertility Rate</td>
<td>2.1</td>
<td>Percent Urban</td>
<td>25</td>
</tr>
</tbody>
</table>

Note: Above indicators are for 1994.

Cumulative AIDS rate (per 1,000) as of 6/14/94 | 0.10
Cumulative AIDS cases as of 6/14/94            | 5,654


Epidemiological Data

- The AIDS situation has exploded in Thailand within the past few years. Based on sentinel surveillance data, the Thailand Ministry of Health reported that over 30 percent of the intravenous drug users in all four regions of Thailand were infected with HIV.

Since 1990, HIV prevalence levels among IVDU in Bangkok have remained high. However, HIV prevalence levels declined to below 40 percent after 1992.

HIV seroprevalence among commercial sex workers continues to grow throughout Thailand. Based on sentinel surveillance data, since June 1990, the virus is increasing at a fast rate among commercial sex workers in the North and Central regions. The Northeast and Southern regions show an increase in HIV infection but not as rapidly as the other regions.

In this 1992 study of HIV seroprevalence among commercial sex workers in the northern urban area of Chiang Mai and the southern urban area of Sungai Kolok, higher infection levels were found for those working in brothels versus those working in more indirect settings.

• Between June 1990 and June 1994, Thailand’s sentinel surveillance system documented that the North started and remained at the highest level, while the other three regions saw a near doubling of HIV infection among urban STD clinic attendees.

• In the city of Chiang Mai, northern Thailand, HIV infection levels among STD clinic patients have remained virtually the same over the past 5 years.

• National HIV seroprevalence data among young adult males entering the Royal Thai Army reported a steady increase in HIV infection from 0.5 percent in 1989 to 3.7 percent in 1993. In addition, this study reported that the highest HIV infection level was found in the North region of Thailand.

• This study describes the urban/rural differentiation in HIV infection levels among Royal Thai Army recruits. All four regions report higher levels among urban recruits. The North region reported the highest urban and rural levels.

• The HIV prevalence among male residents of four villages in northern Thailand was 10.4 percent. This prevalence level is more than three times higher than females.

• The June 1994 sentinel surveillance data of HIV infection levels among pregnant women increased only for the North and Central regions over the 1993 levels. HIV infection levels in the Southern and Northeast regions remained the same as their June 1993 levels.

• A study conducted among pregnant women in Rajvithi hospital, a large public hospital in Bangkok, showed an increase in HIV infection. HIV seroprevalence among pregnant women delivering with no antenatal clinic care had an HIV level three times as high as those women receiving antenatal clinic care.

• The rates of infection in blood donors remained the same from June 1993 to June 1994 for all regions except for the North. For the first time since 1990, prevalence levels among blood donors in the Central region were higher than those in the North region.

• This study shows the HIV infection trend among blood donors in Chiang Mai from 1988 to 1992. The highest prevalence levels for all years are among the paid ("professional") blood donors. The lowest levels are reported for the volunteer donors.

Sources for Thailand

J0042 Jugsudee, A., et al., 1994, HIV-1 Seroprevalence among Young Thai Men 1990 to 1993, Tenth International Conference on AIDS, Yokohama, Japan, 8/7-12, Poster P.C.0074.
T0117 Torugsa, K., et al., 1994, Prevalence of HIV-1 Infection in Young Men Entering the Royal Thai Army; Trends and Risk Factors, Tenth International Conference on AIDS, Yokohama, Japan, 8/7-12, Poster P.C.0057.