RESEARCH ACTIVITIES OF EPIDEMIOLOGY IN JAPAN
Infectious Disease
Epidemiology of AIDS/HIV in Japan

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The data obtained from the national reporting system of acquired immune deficiency syndrome (AIDS) and its causative immune deficiency virus (HIV), the epidemic pattern of AIDS cases and HIV carriers in Japan from 1985 to 1995 could be summarized as follows: 1) the total number of reported AIDS cases and HIV carriers were 1,154 and 3,524 which included 167 and 915 foreigners, respectively; 2) among them the number of HIV carriers in hemophiliacs transmitted through HIV contaminated blood products was 1,806, including 582 AIDS victims; 3) excluding these hemophiliacs, there are 572 AIDS cases (167 foreigners) which shared risk factors for heterosexual contacts (37%) and homosexual contacts (31%), respectively; 4) on the other hand, more than 50% were heterosexuals and only 20% were homosexuals in 1,718 HIV carriers (915 foreigners); 5) the peak incidence is 33% in the 30s in AIDS, while more than 50% are in their 20s; 6) male-to-female ratio was 6.8 in AIDS cases but only 1.1 in HIV carriers; 7) the estimated number of HIV carriers in 2000 was 6,300-8,500 in Japanese and 700-1,700 in foreigners, respectively. From the above mentioned epidemic pattern of AIDS/HIV in Japan, we have to recognize that the recent number of HIV infection is actually increasing and the most of current HIV carriers even in foreigners are infected with HIV in our country and general activities for AIDS prevention in Japan and neighboring Asian countries should be promoted. J Epidemiol, 1996; 6: S67-S74.

AIDS, HIV, epidemic pattern, transmission route

The first case, a homosexual man, of acquired immune deficiency syndrome (AIDS) caused by human immunodeficiency virus (HIV), was reported in February 1985, but the actual first case is considered to be a hemophiliac patient, who was retrospectively suggested to be taken so-called AIDS in 1981, when AIDS were discovered in the United States of America. Since 1985, AIDS has come into the limelight as a big issue familiar to everyone in Japan.

Under the situation where no effective vaccine or drugs for treatment have been yet developed, there arose rapidly the consensus that the eradication of AIDS is the foremost and global problem of human being. Based on this fact, in February 1987 the government decided to promote AIDS control comprehensively without a moment’s delay before the situation takes a serious turn and made a firm policy determination to subsidize private organizations for the promotion of research on AIDS. Then the AIDS Prevention Law went into effect in February 1989 and the law set the basic framework for an AIDS policy of the Japanese Government.

The World Health Organization (WHO) estimates that there are at present 14-15 million adults infected with HIV, and that the number of AIDS patients has surpassed 4.5 million in adults and children¹. The number of HIV-infected people is predicted to be anywhere from 30 to 40 million by the year 2000. The extensive spread of HIV in South and South-east Asia began in the mid-1980s, but its progression has been very rapid. As of mid-1995, WHO estimated that over 3 million people were living with HIV and AIDS in Asia. Here too, almost half of all adults newly infected with HIV are women. While India and Thailand account for the majority of infections, rapid HIV spread into specific populations in other countries of the region has also been noted. For the region’s adults, the predominant modes of transmission are unprotected heterosexual intercourse and needle-sharing. In some Asian coun-

Received and accepted January 9, 1996.

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tries, a large proportion of sex outside marriage is not casual sex but commercial sex. The AIDS epidemic in South and South-east Asia gained an early foothold among injecting drug users.

Recently, the virus is spreading rapidly in and around the area known as the Golden Triangle, the border of Myanmar, Laos, China and Thailand, where most of the world's opium and heroin are produced. If we could not establish a cooperative task force in Asian countries to fight against AIDS epidemics in Asia more effectively, there is no end to its rapid expansion.

**OVERVIEW OF AIDS/HIV SURVEILLANCE**

The current status of the AIDS/HIV by gender and risk category reported at the end of 1995 are summarized in Table 1. It should be noted that all of hemophiliac AIDS cases and other transferred AIDS cases (those who were previously reported as HIV carriers) are counted repeatedly in the total number of reported cases. The cumulative total numbers of AIDS cases and HIV infections are 1,154 and 3,524 respectively. Taking a general view of the reporting of AIDS/HIV by transmission risk factors, hemophiliacs account for about 50% and the remainder constituted mainly of heterosexual contacts and homosexual males. Japanese AIDS patients are characterized by the high ratio of hemophiliacs who have contracted the disease through administration of HIV-contaminated blood products imported from the United States. Change of annually reported number of AIDS cases and HIV infections excluding hemophiliac cases are shown in Table 2. Annual number of reported HIV infections jumped up since 1991 and then it became stable.

**Transmission Risk Categories**

AIDS cases: The number of reported AIDS patients excluding hemophiliacs is 572 including 29.2% of foreigners (Table 1). Break-down of 572 AIDS cases by risk category indicates 37.2% of heterosexuals, 31.3% of homosexual males including bisexuals, 2.8% of others including 8 cases of blood transfusion, 7 cases of mother-to-infant infection and 5 cases of injective drug users (IDUs) and 26.6% remains causes unknown.

The early AIDS cases were mostly hemophiliacs, followed by the male homosexual group about two years behind (Table 2). Those who contracted the disease through heterosexual contacts rapidly increased since the first case in 1987. Recently large increase of risk-unknown cases has been observed, particularly among male foreigners.

HIV infected persons: There are 1,718 HIV positive cases other than AIDS patients excluding hemophiliacs (Table 1), of whom 915 cases (53.3%) are foreigners. Out of the total of 1,718 cases, 866 cases (50.4%) are heterosexuals, 350 cases (20.4%) male homosexuals, 3.4% others including 21 cases of blood transfusion, 9 cases of mother-to-infant infection and 11

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**Table 1. Reported cases by sex and risk factor at the end of 1995**

| Risk Factor          | Male         | Female       | Total       |
|----------------------|--------------|--------------|-------------|
| Heterosexual contact | 170 (35)     | 43 (20)      | 213 (55)    |
| Homosexual contact*  | 179 (31)     | - ( - )      | 179 (31)    |
| Injective drug use   | 5 (3)        | - ( - )      | 5 (3)       |
| Materno-Infant       | 4 (1)        | 3 (1)        | 7 (2)       |
| Hemophiliacs**       | 577 ( - )    | 5 ( - )      | 582 ( - )   |
| Others               | 10 (4)       | 6 ( - )      | 16 (4)      |
| Unknown              | 131 (56)     | 21 (16)      | 152 (72)    |
| Total                | 1,076 (130)  | 78 (37)      | 1,154 (167) |

| Risk Factor          | Male         | Female       | Total       |
|----------------------|--------------|--------------|-------------|
| Heterosexual contact | 367 (84)     | 499 (381)    | 866 (465)   |
| Homosexual contact*  | 350 (56)     | - ( - )      | 350 (56)    |
| Injective drug use   | 11 (8)       | - ( - )      | 11 (8)      |
| Materno-Infant       | 2 (1)        | 7 (4)        | 9 (5)       |
| Hemophiliacs**       | 1,784 ( - )  | 22 ( - )     | 1,806 ( - ) |
| Others               | 19 (7)       | 18 (1)       | 37 (8)      |
| Unknown              | 139 (78)     | 306 (295)    | 445 (373)   |
| Total                | 2,672 (234)  | 852 (681)    | 3,524 (915) |

Figures in parenthesis indicate foreigners repeatedly.

* Including bisexual males (16 AIDS and 14 HIV infections).
** From the Hemophiliacs Study Group at November in 1995.
*** 582 AIDS cases are included.
Table 2. Annual reported number* of HIV/AIDS by specified group in Japan (excluding hemophiliac cases)

| Group          | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | Total         |
|----------------|------|------|------|------|------|------|------|------|------|------|------|---------------|
| Heterosexuals  | -    | -    | 26(5) | 18(7) | 34(3) | 34(8) | 123(9) | 253(21) | 170(34) | 194(46) | 227(80) | 1,079(213) |
| Males          | -    | -    | 16(1) | 9(4)  | 20(3) | 16(7) | 46(9)  | 89(20)  | 83(26)  | 105(39) | 153(61) | 537(170) |
| Females        | -    | -    | 10(4) | 9(3)  | 14(-) | 18(1) | 77(-)  | 164(1)  | 87(8)   | 89(7)   | 74(19)  | 542(43)  |
| Homosexuals**  | 6(6) | 4(4) | 33(8) | 25(10) | 40(8) | 30(10) | 42(18) | 58(14) | 61(16) | 122(45) | 108(40) | 529(179) |
| Others/Unknown | -    | 1(1) | 10(1) | 8(2)  | 13(5) | 33(13) | 73(11) | 182(16) | 133(37) | 118(45) | 111(41) | 660(172) |

* HIV infections other than AIDS cases have been reported since February 1, 1987.
** Including bisexual males.

Table 3. Age distribution of AIDS patients and HIV infections registered from 1989 to 1995 (excluding hemophiliacs)

| Age (yrs) | AIDS Subjects | % | HIV Subjects | % |
|-----------|---------------|---|--------------|---|
| -19       | 9             | 1.7| 98           | 6.0|
| 20-29     | 104           | 19.8| 861          | 52.6|
| 30-39     | 163           | 31.0| 350          | 21.4|
| 40-49     | 152           | 29.0| 203          | 12.4|
| 50-       | 97            | 18.5| 106          | 6.5|
| Unknown   | -             | -  | 8            | 0.5|
| Total     | 525           | 100| 1,636        | 100|

Age and Sex Distribution

Age: The peak incidence is 31.0% in the 30s in AIDS cases and age groups above 20 and under 50 covered 80%, while the age group composition of HIV infections reveals younger age distribution than that of AIDS cases (Table 3), in which the highest account 52.6% in their 20s account. The cause of the definite difference in the age distribution between HIV carriers and AIDS patients is mainly attributed to the 10-year in average latent period from HIV infection to the development of immunodeficiency.

Table 4. Annual incidence of AIDS and HIV infection by sex (excluding hemophiliacs)

| Year   | Male | Female | Total | M/F ratio | Male | Female | Total | M/F ratio |
|--------|------|--------|-------|-----------|------|--------|-------|-----------|
| 1985   | 6    | 0      | 6     | -         | -    | -      | -     | -         |
| 1986   | 5    | 0      | 5     | -         | -    | -      | -     | -         |
| 1987   | 9    | 5      | 14    | 1.8       | 44   | 11     | 55    | 4.0       |
| 1988   | 16   | 3      | 19    | 5.3       | 22   | 10     | 32    | 2.2       |
| 1989   | 15   | 1      | 16    | 15.0      | 53   | 18     | 71    | 2.9       |
| 1990   | 28   | 3      | 31    | 9.3       | 38   | 28     | 66    | 1.4       |
| 1991   | 38   | 0      | 38    | -         | 78   | 122    | 200   | 0.6       |
| 1992   | 49   | 2      | 51    | 24.5      | 153  | 289    | 442   | 0.5       |
| 1993   | 73   | 14     | 87    | 5.2       | 135  | 142    | 277   | 1.0       |
| 1994   | 119  | 17     | 136   | 7.0       | 171  | 127    | 298   | 1.4       |
| 1995   | 141  | 28     | 169   | 5.0       | 194  | 83     | 277   | 2.3       |
| Total  | 499  | 73     | 572   | 6.8       | 888  | 830    | 1718  | 1.1       |
| (%)    | 87.2 | 12.8   | 100   | 6.8       | 51.7 | 48.3   | 100   | 1.1       |
Sex
Annual incidence of AIDS/HIV by sex is shown in Table 4. Male to female ratio in total AIDS cases is 6.8 : 1 without obvious change of the ratio to date. On the other hand in HIV infections, the sex ratio was 1.1 : 1 in the cumulative total cases. The time trend of the sex ratio has shown remarkable decrease since 1990 to make the sex ratio less than 1.0, however, it has been increasing again recently. The main cause of the clear decrease of female HIV infections might be depend on the remarkable decrease of registered number in foreign females, especially since 1993.

Nationality
As for the nationality of the HIV/AIDS cases, reported cases are only identified as Japanese and non-Japanese (foreigners) as requested by the AIDS Prevention Law. Though details of the nationality cannot be clearly known, the ratio of southeast Asian people has been increasing recently.

According to the AIDS/HIV surveillance by the AIDS Prevention Law since 1989, those who got HIV infection in Japan or abroad account for 44.0% or 38.3% respectively in total of 485 AIDS cases and 1,576 HIV infections, and the rest 30.6% remains place-unknown (Table 5). Among Japanese, however, the ratio of domestic HIV infection has been increasing to account for 65.3%. Annual incidence of heterosexually infected Japanese AIDS/HIV cases by area of getting infection indicate ratio of domestic infection as about 60% since 1990.

Table 5. Distribution of HIV/AIDS cases reported in 1989-1995 by sex, nationality and area of infection by heterosexual and/or homosexual contact

| Nationality/Sex    | Area of HIV infection | Whole areas |
|--------------------|-----------------------|-------------|
|                    | Japan | %    | Abroad | %    | Unknown | %    | %     |
| Japanese/ Male     | 504   | 63.7 | 209    | 26.4 | 78   | 9.9 | 791   | 100   |
| Female             | 94    | 75.2 | 25     | 20.0 | 6    | 4.8 | 125   | 100   |
| Total              | 598   | 65.3 | 234    | 25.5 | 84   | 9.2 | 916   | 100   |
| Foreigners/ Male   | 13    | 7.3  | 128    | 72.3 | 36   | 20.3| 177   | 100   |
| Female             | 44    | 11.1 | 208    | 52.5 | 144  | 36.4| 396   | 100   |
| Total              | 57    | 9.9  | 336    | 58.6 | 180  | 31.4| 573   | 100   |
| Whole/ Male        | 517   | 53.4 | 337    | 34.8 | 114  | 11.8| 968   | 100   |
| Female             | 138   | 26.5 | 233    | 44.7 | 150  | 28.8| 521   | 100   |
| Total              | 655   | 44.0 | 570    | 38.3 | 264  | 17.7| 1,489 | 100   |

Figure 1. Annual reported number of AIDS cases (Left) and HIV infections (Right) by sex and nationality (excluding hemophiliacs).
Similarly in Japanese homosexual males, 75.3% were infected with HIV in Japan.

The annual trends in incidence of AIDS cases and HIV infections by nationality and sex are illustrated in Figure 1. The ratio of Japanese to foreigners in AIDS cases has been almost constant in both males and females. The cumulative number of Japanese is 405 (70.8%), while that of foreigners is 167 (29.2%). In HIV infections remarkable increase of foreigner females was observed in 1991 and 1992, and the total number of foreigners accounts for 915 (53.3%), while Japanese accounts for 803 (46.7%).

**Residential Area**

The geographical distribution of reported HIV infections including AIDS cases are shown in Table 6. Almost two thirds of the cases were reported from Tokyo in Kanto area. Tokyo is the biggest metropolitan city in Japan and stands top accounting for 32.5% of the total cases. Tokyo is the capital city of Japan and has been exposed by the international flavor during the last 30-40 years. However, it has been decreasing while share of other Kanto area has been increasing recently.

### Table 6. Geographical distribution of HIV infections at the end of 1995 (excluding hemophiliacs)

| Region                  | Cases | %    |
|-------------------------|-------|------|
| Hokkaido-Tohoku         | 55    | 2.4  |
| Kanto                   | 1544  | 67.4 |
| (Tokyo)                 | (745) | (32.5)|
| Hokuriku-Kohshinetsu    | 197   | 8.6  |
| Tokai                   | 185   | 8.1  |
| Kinki                   | 189   | 8.3  |
| Chugoku                 | 32    | 1.4  |
| Shikoku                 | 16    | 0.7  |
| Kyushu-Okinawa          | 72    | 3.1  |
| **Total**               | 2,290 | 100% |

Figures in parenthesis indicate the number in Tokyo prefecture as a secondary mention.

### CURRENT STATUS OF HIV INFECTION BY SPECIFIC GROUP

#### Hemophiliacs

As previously mentioned, the contaminated blood product recipients were initially the largest risk group in Japan. The HIV antibody positive rate among hemophiliacs is estimated to be about 40%, indicating that there have been nearly 2,000 HIV infected persons among 5,000 hemophiliacs in Japan. The average date of HIV seroconversion is estimated in mid-March 1983 and after 1986 new infections are not anticipated, but dozens of new AIDS patients are expected to be diagnosed every year among previously infected persons. The prevalence survey at the end of May 1995 by the above mentioned Research Group revealed 1,803 seropositives including 1,401

### Table 7. HIV seroprevalence among various high risk populations

| Group                        | Number of tested | Number of positives (%) | Time of survey | Areas tested               |
|------------------------------|------------------|-------------------------|----------------|---------------------------|
| Heterosexual contact         |                  |                         |                |                           |
| AIDS clinic                  | 3,308            | 28 (0.85)               | 1985-1990      | Tokyo                     |
| STD clinic (A)               | 4,434            | 1 (0.02)                | -1989          | Tokyo, Osaka              |
| STD clinic (B)               | 23,495           | 12 (0.05)               | 1987-1991      | Tokyo                     |
| Special bath house           |                  |                         |                |                           |
| Female workers               | 811              | 0 (0 )                  | -1989          | Tokyo, Osaka, Aichi       |
|                             | 1,956            | 2 (0.10)                | 1987-1992      | Chubu                     |
|                             | 702              | 0 (0 )                  | 1993           | Kyushu                    |
|                             | 274              | 0 (0 )                  | 1992-1993      | Kanto                     |
| Female prostitutes           | 398              | 5 (1.25)                | 1987-1991      | Tokyo                     |
| Foreign female entertainment workers | 1,553    | 23 (1.48)               | 1992-1994      | Nagano, Ibaragi, Kanagawa |
| Injectable drug users        | 32,136           | 7 (0.02)                | 1988-1994      | Whole country              |
| Homosexual contact           |                  |                         |                |                           |
| Japanese(A)                  | 834              | 15 (1.80)               | 1985-1989      | Tokyo                     |
| Foreigners                   | 150              | 13 (8.67)               | 1985-1989      | Tokyo                     |
| Japanese(B)                  | 1,244            | 4 (0.32)                | 1986-1992      | Tokyo                     |
| Japanese(C)                  | 1,590            | 6 (0.38)                | 1986-1994      | Aichi                     |

Data source : Reference 3
cases (78%) of hemophilia A, 365 cases (20%) of hemophilia B and 37 cases (2%) of other related diseases. Of those seropositives 530 cases have manifested AIDS including 357 dead cases, so the attack rate of AIDS in HIV infections during the last 10-15 years is 29.4% and the case fatality rate is 67.4%.

**Other High Risk Groups**

As a background of AIDS epidemic, current status of seroprevalence in various populations is represented in Table 7. HIV positive rate among homosexual men is notably higher than other high risk groups in Tokyo area, and about 5 times higher among non-Japanese than Japanese (Table 7). HIV positive rate of high risk heterosexuals is considerably lower than homosexuals, but recent reports revealed that seropositivity was 2.6% among non-Japanese hospitality girls in areas around Tokyo. The ratio of infections through heterosexual transmission seems to increase in future.

**General Population**

As for general populations the national average of HIV antibody positive rate among adult public donating blood at Japanese Red Cross blood centers is extremely low at 0.32/100,000 as of the end of 1994, but the average for Tokyo Metropolitan area

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**Table 8. Prevalence of HIV antibody positives among various general populations**

| Group | Number of subjects | Positives (%) (Rate/100,000) | Period of survey | Area tested |
|-------|--------------------|------------------------------|------------------|-------------|
| Blood donors | | | | |
| Metro-area | 16,227,042 | 116 (0.71) | 1986-1994 | Tokyo, Kanagawa, Chiba, Saitama |
| Local area | 48,330,221 | 88 (0.18) | 1986-1994 | Other areas excluding the Metro-area |
| Total | 64,557,263 | 204 (0.32) | 1986-1994 | Whole country |
| Blood donors at hospitals | 24,258 | 0 | 1986-1994 | Tokyo |
| Blood transfusion recipients | 29,376 | 1* (3.40) | 1986-1994 | Tokyo |
| Hemodialysis patients | 17,109 | 0 | 1988-1994 | Aichi, Tokyo, Shizuoka |
| Outpatients at hospitals | 17,129 | 0 | 1989-1994 | Tokyo, Saitama |
| Inpatients | 6,972 | 2** (28.7) | 1989-1994 | Tokyo, Aichi |
| Pregnant women | 67,033 | 0 | 1988-1994 | Tokyo and 8 Prefectures |
| Health care workers | 2,411 | 0 | 1988-1994 | Tokyo |
| Voluntary tests at health centers | 316,290 | 188 (59.4) | 1986-1994 | 15 Prefectures/Cities |

* A case with high risk behaviors.
** One is an AIDS case and the other is a pediatric hemophilia patient.

Data source: Reference 4.

**Table 9. Annual incidence of HIV positives among donated blood at Japan Red Cross blood centers**

| Year | Donors tested | Total | Female* | Foreigner | Positive rate /100,000 |
|------|---------------|-------|---------|-----------|-----------------------|
| 1986 | 3,146,940     | 11    | 0       | 0         | 0.35                  |
| 1987 | 8,217,340     | 11    | 1       | 0         | 0.13                  |
| 1988 | 7,974,147     | 9     | 1       | 1         | 0.11                  |
| 1989 | 7,876,682     | 13    | 1       | 4         | 0.17                  |
| 1990 | 7,743,475     | 26    | 6       | 2         | 0.34                  |
| 1991 | 8,071,937     | 29    | 4       | 5         | 0.36                  |
| 1992 | 7,710,697     | 35    | 7       | 7         | 0.45                  |
| 1993 | 7,205,514     | 34    | 5       | 4         | 0.47                  |
| 1994 | 6,610,514     | 34    | 5       | 2         | 0.55                  |
| 1995 | 6,298,706     | 33    | 8       | 5         | 0.52                  |
| Total | 70,855,918 | 237   | 38      | 30        | 0.33                  |

* as a secondary mention

Data source: Reference 4
is 0.71/100,000, about 5 times higher than other areas (Table 8). Among the other less risky groups, such as pregnant women, inpatients or outpatients of general hospitals, hemodialysis patients and health care workers, antibody positives are not found. It is also observed that seropositivity has been gradually increasing since 1988 to data (Table 9).

**ESTIMATION OF ACTUAL INCIDENCE AND ITS PREDICTION**

Due to unclear perspective of change of the behavior among high risk groups, particularly among foreign people, long-term projection of HIV/AIDS in Japan is very difficult. So, we tried prediction within a short-term based on the AIDS/HIV surveillance data as at the end of 1994, where AIDS/HIV cases in hemophiliacs were excluded because a new HIV infection among them is completely protected since 1986.

Details of the method will not be described here, but the future prediction is based on the estimated number of HIV infections and extrapolation of current trend of reporting. Implementation of report was assumed about 80% or above as for AIDS cases. On the contrary HIV infected persons are guessed considerable under-reported, and coverage rate for HIV infection was estimated at 19.4% or 1/5.1 among Japanese. In case of foreigners, it is difficult to estimate the coverage rate due to their generally shorter stay in Japan.

Estimation and projection of HIV infection and AIDS cases in 1994 and 2000 are shown in Table 10. Actual cumulative number of HIV infection at the end of 1994 is estimated about 3,240-4,380 in Japanese and about 4,110-5,560 in foreigners, and the prevalence of HIV infections in 2000 is projected as 6,270-8,490 in Japanese and 710-1,690 in foreigners.

Future trend of HIV infection in Japan is considered largely influenced not only by behavioral change of Japanese but also by epidemiological and socio-economical conditions of closely-related foreign countries.

**CONCLUDING REMARKS**

We believe that Japan is still a low HIV epidemic country in Asia, however, we have to recognize that the recent number of HIV infections is actually increasing and the most of current HIV carriers among not only Japanese but also foreigners were infected with HIV in our country. It is recognized that AIDS is easily spreading among people mainly through human behaviors such as sexual contact and direct blood contact with any HIV infected persons, however, quite a few people did not know that HIV transmission is completely preventable by an intervention to such human behaviors. From the two behavioral surveys which were conducted to identify the risk behaviors to HIV infection in Japanese in 1991 and 1993, eight critical points that should be targeted in AIDS prevention education for changing Japanese risk behaviors are recommended:

1) correct the mistaken notion that AIDS does not concern us;
2) avoid having sex non-regular partners and specify the people we have sex with;
3) administer preventive education to

### Table 10. Estimation and projection of HIV infected persons

| Nationality      | Risk Category | Cumulative number* | Estimates of HIV Infections** |
|------------------|---------------|--------------------|-------------------------------|
|                  |               | Adjusted reported  | Estimated***                  |
|                  |               | 1994 Year          | 2000 Year                     |
| Japanese         | Heterosexuals |                   |                               |
| Male             | 230           | 1,170-1,590        | 1,080-1,460                   | 2,350-3,180 |
| Female           | 109           | 560-750            | 510-690                       | 1,110-1,510 |
| Homosexuals      | 258           | 1,320-1,780        | 1,190-1,600                   | 2,420-3,270 |
| Others           | 38            | 190-260            | 180-240                       | 390-530    |
| Total            | 635           | 3,240-4,380        | 2,960-3,990                   | 6,270-8,490 |
| Foreigners       | Heterosexuals |                   |                               |
| Male             | 105           | 530-720            | 120-160                       | 120-150    |
| Female           | 612           | 3,120-4,220        | 520-1,440                     | 520-1,440  |
| Homosexuals      | 65            | 330-450            | 40-50                         | 40-50      |
| Others           | 25            | 130-170            | 30-40                         | 30-40      |
| Total            | 807           | 4,110-5,560        | 710-1,690                     | 710-1,690  |

* at the end of 1994

** Prevalence of HIV infection indicates the number of existing HIV infection excluding AIDS at the end of a given year. Projected number is calculated by extrapolating the trend of annual estimates.

*** Estimated number = Adjusted number/Coverage rate

The coverage rate of reporting HIV infection is estimated to be 19.4%(1/5.1) and its upper limit of 95% confidence interval to be 14.5%(1/6.9) in Japanese cases at the end of 1994.

This coverage rate is tentatively applied for foreigners cases.

Data source: Reference 5
young people at early stage; 4) persuade those afflicted with
sexually transmitted diseases to refrain from having sex and to
take necessary precautions to avoid transmitting the disease to
their sexual partner; 5) change our negative attitude toward
being tested for HIV and encourage them to notify our partners
of the results; 6) developing an awareness that HIV infection is
a problem that can affect anyone; 7) having every citizens take
advantage of various opportunities to consciously talk about
AIDS; 8) heightening confidence in one's own ability to
engage in preventive behaviors.

Since 1989 when the AIDS Prevention Law was established,
the general activities for AIDS prevention in Japan increased
and the special features of the activities are focused on as fol-
lows: 1) to endeavor to educate, train and assist the young
research workers in the universities and research institutes; 2)
to actively personal exchange between foreign and Japanese
research workers and exchange of mutual information on
AIDS; 3) to entrust survey and research to foreign countries if
they can be done effectively; 4) to obtain the cooperation of
persons engaged in anti-AIDS measures and research on AIDS
in all parts of the country and with the participation of these
research workers hold symposia and training courses; and 5) to
commence work on counselling for the HIV-infected persons
and strive for a substantial consultation system with the exten-
sive cooperation of the research team of the Ministry of Health
and Welfare.

REFERENCES

1. World Health Organization. Joint United Nations
Program on HIV/AIDS, UNAIDS, November, 1995.
2. The National AIDS Surveillance Committee. Bimonthly
Report on HIV/AIDS, November, 1995.
3. Isomura S, et al. A study on high risk behavior and HIV
infection. A Report from a Scientific Research Group on
HIV Epidemiology, Ministry of Health and Welfare,
1994.

4. Shimizu M, et al. A report on monitoring HIV status in
the general population. A report from a Scientific
Research Group on HIV Epidemiology, Ministry of
Health and Welfare, 1994.

5. Soda K, et al. Estimation of actual incidence and predic-
tion of the future trends. A report from Scientific
Research Group on HIV Epidemiology, Ministry of
Health and Welfare, 1994.

6. Munakata T, Tajima K. Japanese risk behaviors and their
HIV/AIDS preventive behaviors. AIDS Education &
Prevention, 1996; 8: 115-133.