RESEARCH REPORT

HIV PREVALENCE IN UPPER SOCIOECONOMIC LEVEL HOSPITAL PATIENTS, 1991-1993

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Abstract. Five elite, private hospitals in Bangkok serving the upper socioeconomic stratum of Thai society were sampled for HIV prevalence among unlinked, anonymous specimens collected from general inpatients (sampled 11/1991 to 1/1992) and from women in labor (sampled 5/1992 to 4/1993). The HIV-1 antibody positivity rate by ELISA/Western blot was 0.45% (9 of 2,000) among all inpatients, and 0.1% (1 of 1,000) among pregnant women. The latter rate was appreciably lower than rates between 1 and 2% found in sentinel surveys among pregnant women in public hospitals during comparable time periods, suggesting the epidemic is more advanced in lower socioeconomic groups.

HIV surveys at sexually transmitted disease clinics, antenatal care clinics, and drug detoxification centers tend to reflect the prevalence of HIV infection among lower-income populations which obtain medical care in the public sector. Inpatients in hospitals are a sentinel population for HIV surveillance that may better reflect other socioeconomic levels of the population (St Louis *et al*, 1990). To determine whether the extensive HIV epidemic in Thailand (Weniger *et al*, 1991; Brown *et al*, 1994) has affected the upper socioeconomic stratum of society not represented in routine Thai national HIV surveys (Ungchusak *et al*, 1992), we conducted HIV testing at five private hospitals in Bangkok.

With Ministry of Public Health ethical review board approval, five of the most expensive private hospitals in Bangkok (average daily room charge equivalent to US$57) submitted anonymous blood specimens left over from routine laboratory testing. At each hospital, 400 consecutive inpatients were sampled from November 1991 through January 1992 (n = 2,000), as were 200 consecutive pregnant women admitted for delivery from May 1992 through April 1993 (n = 1,000). Only the age, sex, submitting hospital, and nationality (Thai or foreign) of the patient were linked with each specimen.

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Among the 2,000 specimens from general patients, nine (0.45%, 95% confidence interval: 0.21%-0.85%) were HIV-positive (Table 1). Another 17 (0.9%) with repeatedly-reactive EIA results were indeterminate on Western blot. Male patients had a rate of 0.8%, compared with 0.2% among women. Prevalence was highest (1.1%) among persons in the 30 to 39-year-old age group, however, none of the differences in rates between sex and age groups were statistically significant. No infections were found in foreign nationals. Among the samples of 1,000 pregnant women, one was HIV-positive (0.1%, 95% confidence interval: 0.003%-0.56%).

Our results indicate that the HIV epidemic reached a detectable level of prevalence (0.5%) among Thai inpatient adults in the upper socioeconomic stratum by late 1991, only three years after the initial explosive spread among injecting drug users in 1988 (Weniger *et al*, 1991). Although no survey data are available from exactly comparable general inpatients at public hospitals serving other socioeconomic strata in Bangkok, our finding is similar to the rate (0.5%) found among blood donors in Bangkok in early 1991 (Kitayaporn *et al*, 1994). Among blood donors in suburban provinces outside Bangkok, the sixth semiannual national sentinel HIV survey conducted in December 1991 found a rate of 0% (0/38) in Pathum Thani province, 0.75% (5/667) in Nakhon Pathom, 1.09% (4/368) in Samut Sakhon, and 1.43% (1/70) in Samut Prakhan (source: Thailand Ministry of Public Health). In

Table 1

HIV prevalence among private hospital patients in Bangkok.

	General patients		Pregnant patients	
	No. tested (proportion of total)*	No. HIV positive (rate)	No. tested (proportion of total)*	No. HIV positive (rate)
Total	2,000 (100%)	9 (0.45%)	1,000 (100%)	1 (0.1%)
Age group				
0-4 years	17 (0.9%)	0	-	-
5-14	21 (1.1%)	0	-	-
15-19	47 (2.4%)	0	8 (0.8%)	0
20-29	313 (15.7%)	2 (0.6%)	392 (39.2%)	1 (0.3%)
30-39	365 (18.3%)	4 (1.1%)	554 (55.4%)	0
40-49	367 (18.4%)	2 (0.5%)	30 (3.0%)	0
50-59	306 (15.3%)	0	1 (0.1%)	0
≥ 60	564 (28.2%)	1 (0.2%)	-	-
Sex: Male	930 (46.5%)	7 (0.8%)	-	-
Female	1,069 (53.5%)	2 (0.2%)	1,000 (100%)	1 (0.1%)
Nationality				
Thai	1,873 (93.6%)	9 (0.5%)	941 (94.1%)	1 (0.1%)
Foreign	127 (6.4%)	0	55 (5.5%)	0
Hospital A	400 (20%)	1 (0.3%)	200 (20%)	0
B	400 (20%)	1 (0.3%)	200 (20%)	1 (0.5%)
C	400 (20%)	2 (0.5%)	200 (20%)	0
D	400 (20%)	5 (1.3%)	200 (20%)	0
E	400 (20%)	0	200 (20%)	0

* Percentage do not always total 100% due to missing data for some variables.

the same national survey, the median rate among blood donors in 71 provinces nationwide was 0.8% (Ungchusak *et al*, 1991).

Our finding of 0.1% HIV prevalence among pregnant women in elite hospitals is appreciably lower than rates reported at this same time from public antenatal clinics in Bangkok (AIDS Working Group, 1992; International Programs Center, 1994; Roongpisuthipong *et al*, 1993; Siriwasin *et al*, 1993), indicating the HIV epidemic in Thailand may be far more advanced among lower socioeconomic groups. This contrasts with an opposite finding in Malawi, Africa, where women in higher economic strata tended to have higher HIV rates (Dallabetta *et al*, 1993). The Thai national sentinel surveys found rates among public antenatal clinic attendees of 1.21% (16/1,317) in June 1992 and 1.14% (18/1,575) in December 1992 (AIDS Working Group, 1992; International Programs Center, 1994). In a public university teaching hospital in Bangkok, the HIV rate was 1.4% (67/4,689) and 1.7% (77/4,629) in the third and fourth quarters, respectively, of 1992 (Roongpisuthipong *et al*, 1993). A similarly large public government hospital in Bangkok found rates of 1.3% and 1.4% in the last two quarters of 1992 among women who had received prenatal care, and 3.1% and 4.4% among those who had not (Siriwasin *et al*, 1993).

In 1993, only 20% of HIV-infected pregnant women in Bangkok had an evident risk factor for HIV infection, such as commercial sex work (CSW) or multiple sex partners (Mangclaviraj *et al*, 1994). Most were probably infected from husbands who patronized CSWs, a phenomenon common in much

of Asia (Brown and Xenos, 1994) that represents a major public health challenge in preventing the spread of HIV among married partners.

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REFERENCES

St Louis ME, Rauch KJ, Petersen LR, *et al.* Seroprevalence rates of human immunodeficiency virus infection at sentinel hospitals in the United States. *N Engl J Med* 1990; 323 : 213-8.

Weniger BG, Limpakarnjanarat K, Ungchusak K, *et al.* The epidemiology of HIV infection and AIDS in Thailand. AIDS 1991; 5 (suppl 2): s71-s85 [errata corrected in 1993; 7 : following 147].

Brown T, Sittitrai W, Vanichseni S, Thisyakorn U. The recent epidemiology of HIV and AIDS in Thailand. *AIDS* 1994; 8 (suppl 2): s131-s41.

Ungchusak K, Thavicharchart T, Juntasiriyarkorn S, Sangwonloy O, Thonghong A. Trend of HIV spreading in Thailand at the end of 1991. *Thai AIDS J* 1992; 4 : 80-91.

Kitayaporn D, Bejrachandra S, Chongkolwatana V, Chandanayingyong D, Weniger BG. Potential deferral criteria predictive for HIV-positivity in blood donors in Thailand. *Transfusion* 1994; 34 : 152-7.

AIDS Working Group, Division of Epidemiology, Office of the Permanent Secretary. [AIDS situation in Thailand, June 1992], Bangkok: Thailand Ministry of Public Health. 1992 : 1-55.

International Programs Center, Population Division, US Bureau of the Census. HIV/AIDS surveillance database, December 1994. Washington: US Bureau of the Census, 1994.

Roongpisuthipong A, Chaisilwattana P, Wasi C, Chearskul S, Pokapanichwong W, Shaffer N. Rapid rise in maternal HIV-1 seroprevalence, Siriraj Hospital, Bangkok, Thailand. Berlin: IX International Conference on AIDS/IV STD World Congress, [Abstract WS-C04-4], 6-11 June, 1993.

Siriwasin W, Singhaneti S, Kaewchaiyo G, Chotpitayasunondh T, Pokapanichwong W, Shaffer N. Rapid rise in maternal HIV-1 seroprevalence, Bangkok, Thailand. Berlin: IX International Conference on AIDS/IV STD World Congress, [Abstract PO-C08-2767], 6-11 June, 1993.

Dallabetta GA, Miotti PG, Chiphangwi JD, *et al.* High socioeconomic status is a risk factor for human immunodeficiency virus type 1 (HIV-1) infection but not for sexually transmitted diseases in women in Malawi: implications for HIV-1 control. *J Infect Dis* 1993; 167 : 36-42.

Mangclaviraj Y, Chaisilwattana P, Siriwasin W, Roongpisuthipong A, Shaffer N. Bangkok perinatal HIV transmission study. Yokohama: X International Conference on AIDS/International Conference on STD [Abstract PC0162], 7-12 August, 1994.

Brown T, Xenos P. AIDS in Asia: the gathering storm. Asia Pacific Issues: Analysis from the East-West Center, No. 16. Honolulu, Hawaii: East-West Center, 1994: 1-15.