

Annex 4

Major determinants of heterosexual HIV transmission

In about two-thirds of all countries in the world, HIV prevalence attributable to heterosexual transmission is less than one infection for every thousand adolescents and adults 15-49 years of age. However, in almost all countries in sub-Saharan Africa, several countries in the Caribbean region, and a few countries in south and southeast Asia, HIV prevalence in heterosexual populations ranges from lows of about 1-2% to over 35%. How can such large differences in HIV prevalence attributable to heterosexual transmission between countries with high HIV prevalence (1% or greater) and most other countries be explained? Answers may be found by examining the pattern(s) and prevalence of sex partner exchange rates and the relative inefficiency of HIV transmission via unprotected sexual intercourse. From the beginning of the HIV/AIDS pandemic, the low infection rate of HIV per any single act of sexual intercourse (anal or vaginal) and the paramount importance of quantitative and qualitative parameters of HIV-risk behaviours have not been fully appreciated by most policy-makers, and many epidemiologists.

It is generally accepted that other STI, especially those that cause ulcerative lesions, such as chancroid and syphilis, increase the efficiency of HIV transmission. It is clear from many epidemiological studies that if an individual has an ulcerative genital lesion, the risk of HIV transmission is increased. However, no internationally accepted measures or indices have been developed to reliably quantify the prevalence of STI between different countries. STI prevalence surveys are difficult to conduct and data are limited to small, selected

Table 5: Estimated regional HIV and STD prevalence, end of 1999

Region	Adults 15-49 (Millions)	No. HIV (Millions)	HIV Rate (%)	No. STI (Millions)	STI Rate (%)	Index STI Index
Sub-Saharan Africa	273.53	23.40	8.56	69	25.23	11.52
Caribb & Latin Amer	269.13	1.55	0.58	38	14.12	6.45
South & SE Asia	993.47	5.40	0.54	151	15.20	6.94
“Western” countries	359.44	1.43	0.40	32	8.90	4.06
E Eur & Central Asia	197.72	0.41	0.21	22	11.13	5.08
N Africa & Mid-East	171.94	0.21	0.12	10	5.82	2.66
East Asia & Pacific	821.65	0.53	0.06	18	2.19	1.00*
Total	3086.88	32.93	1.07	340	11.01	

*This region had the lowest STD rate, and all of the other regions are multiples of this lowest rate – i.e., the STD rate in sub-Saharan Africa is 11.52 times greater than the STD rate in the East Asia and Pacific region.

**The Spearman rank difference correlation between HIV prevalence in 2000 and STD Index in 1998 for these 7 regions is: + 0.93. The standard error for this correlation is 0.02.

samples, mostly from STD clinics. These limited data suggest that the prevalence of STI, especially those associated with ulcerative lesions, is higher in populations with high heterosexual HIV prevalence than in countries with low heterosexual HIV prevalence.

Table 5 presents regional estimates of HIV prevalence, as of the end of 1999, together with a regional STD index, calculated from estimates of regional STD prevalence made in 1998⁹. This table shows a good correlation with HIV prevalence and a calculated STD index. The East Asia and Pacific region has the lowest STD prevalence rate and the lowest STD index, as well as the lowest estimated HIV prevalence rate, whereas sub-Saharan Africa has the highest STD prevalence rate, highest STD index and highest estimated HIV prevalence rate. The combination of the Caribbean and Latin America may partly obscure the probably higher STD rates in the Caribbean.