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National AIDS Control Programme

HIV/AIDS/STD Surveillance

Report No. 14, December 1999

Epidemiology Unit, NACP
Dar es Salaam
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Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Clinic
ELISA	Enzyme Linked Immunosorbent Assay
EPTB	Extrapulmonary tuberculosis
GDS	Genital Discharge Syndrome
GUD	Genital Ulcer Disease
HIV	Human Immunodeficiency Virus
IDC	Infectious Disease Centre
MOH	Ministry of Health
MTCT	Mother- To-Child-Transmission
MUCHS	Muhimbili University College of Health Sciences
NACP	National AIDS Control Programme (referred to as the Programme)
PID	Pelvic Inflammatory Disease
RPR	Rapid Plasma Reagin
STDs	Sexually Transmitted Diseases
TANESA	Tanzania-Netherlands Project to Support HIV/AIDS Control in Mwanza Region
TB	Tuberculosis
TPHA	*Treponema pallidum* Haemagglutination Assay
UNAIDS	Joint United Nations Programme on AIDS
UNDP	United Nations Development Programme
VDS	Vaginal Discharge syndrome
VDRL	Venereal Disease Research Laboratory
WHO	World Health Organisation

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EXECUTIVE SUMMARY

This report provides an account of HIV/AIDS/STDs in Mainland Tanzania for the period January to December 1999.

A total of 8,850 AIDS cases were reported to the NACP from the 20 regions in 1999, bringing the cumulative number of AIDS cases from 1983 to 118,713. Simulation model estimates that only 1 out of 5 AIDS cases are reported. NACP therefore estimates that 44,250 cases occurred in 1999 and 600,000 cumulative AIDS cases have occurred from 1983 to 1999.

Both males and females were equally affected but the peak number of AIDS cases in women was at the age 25-29 years compared with 30-34 years in men. However, the sex-specific case rate for 1999 was higher for males compared to females. Generally, the data indicate that females acquire HIV infection at an earlier age compared to males, assuming a similar incubation period for both sexes. The main mode of transmission remains heterosexual, accounting for 82.7% of all cases.

Antenatal clinic sentinel surveillance data were available from 17 sites. HIV prevalence in this sentinel population varied by site ranging from 7.0% in Bukoba urban to 29.5% in Kyela district. Most sites showed a stable prevalence from 1992-1999 except Kyela, Moshi rural and Morogoro urban, which had an increasing trend. Of interest is the observed decreasing trend for Bukoba urban over the same time period. Syphilis prevalence among antenatal clinic attendees in 1999 ranged from 0.4% to 32.6%.

During 1999, 119,114 persons (82.3% males, 17.7% females and 4.4% donors of unspecified sex) donated blood. Of these, majority (99%) were relatives of patients, 0.9% were institutional donors and 0.1% were paid donors. The overall HIV seroprevalence among blood donors was 9.4%. Applying sex specific prevalence of HIV among blood donors to adult population aged 15 years and above, it is estimated that 1,745,320 persons are infected with the AIDS virus. A statistically significant difference in HIV seroprevalence was observed between relative donors (9.4%; 11,023/117,400) and institutional donors (13.3%; 138/1,041). The age and sex-specific prevalence in the blood donor population showed higher prevalence among females than males in the same age groups. An increasing trend in age-specific HIV prevalence was observed for both sexes in blood donor population from 1991 - 1999

Except in Mbeya region where both Genital Ulcer Disease (GUD) and Genital Discharge Syndrome (GDS) (20318 and 21002 new episodes respectively) were the commonest STDs, GDS (29,387 new episodes) was the most common STD syndrome in other regions.

The impact of HIV on other diseases was particularly noted for tuberculosis, whereby HIV has led to a significant resurgence of TB, with atypical presentation and tendency to emergence of multidrug resistant strains. Fungal infections especially candidiasis and cryptococcosis occur frequently among HIV infected people in Tanzania.

Voluntary counselling and HIV testing (VCT) services continued in 85 districts, but data were available from only 22 of these districts. A large proportion (75.8%; 1978/2608) of those tested in VCT were seropositive, implying that possibly most of those who go for such services do so because of high suspicion of being potentially infected.

Studies conducted in Tanzania in recent years have reported findings of interest. Included are high HIV prevalence among children admitted in Muhimbili Medical Centre, high HIV incidence in an urban cohort in Dar es Salaam and the efficacy of short regimen of combined antiretroviral therapy in the prevention of mother to child transmission of HIV. The prevalent HIV subtypes circulating in Tanzania were found to be subtypes A, C, D and recombinant strains. The suitability of age-adjusted HIV prevalence among antenatal clinic attendees in estimating prevalence in the general population was also ascertained.

1.0 AIDS SITUATION IN TANZANIA

AIDS case reporting

Methods

Clinical AIDS surveillance forms are issued to the office of the Regional Medical Officer (RMO) in each region for distribution to all hospitals in the region. Information collected includes socio-demographic profiles, criterion for AIDS diagnosis in adults and children, doctors' opinion on possible source of infection, and whether or not HIV test was done. All hospitals return dully-filled forms to the office of the RMO monthly. These officers subsequently return the filled forms to the epidemiology unit of the NACP quarterly where they are processed for analysis and reporting.

Distribution of AIDS cases

Between 1st January and 31st December 1999, a total of 8,850 AIDS cases were reported to the NACP from the 20 regions of Tanzania Mainland. Thus, the cumulative number of AIDS cases since 1983 (when the first AIDS cases were reported in Tanzania) was 118,713.

The distribution of AIDS cases by age and sex during the period January through December 1999 is summarised in Figure 1. For both sexes, most cases fall within the age group 20-49 years; peak age for females being 25-29 years while that for males is 30-34 years. Generally, females acquire HIV infection at an earlier age compared to males, assuming a similar incubation period for both sexes. Distribution of cumulative AIDS cases (1987 – 1999) by age and sex is presented in Figure 2. This figure presents almost same features as those observed in figure 1 except that the peak age for both males and females is 30 – 34 years. Sex specific case rates for 1999 indicate that males have a higher case rate (28.2 per 100,000 population) compared to females (26.5 per 100,000 population).

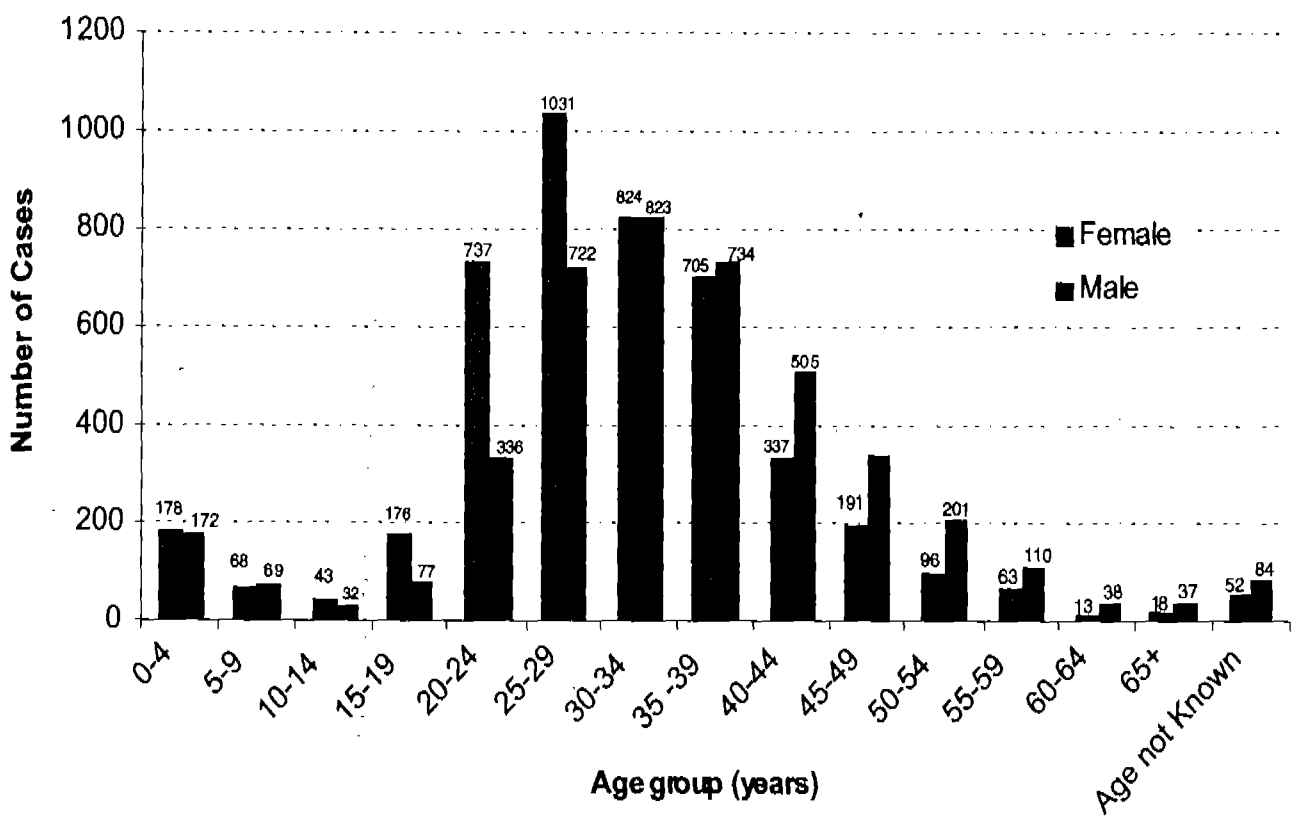


Figure 1: Age and Sex Distribution of Reported AIDS Cases
January - December 1999

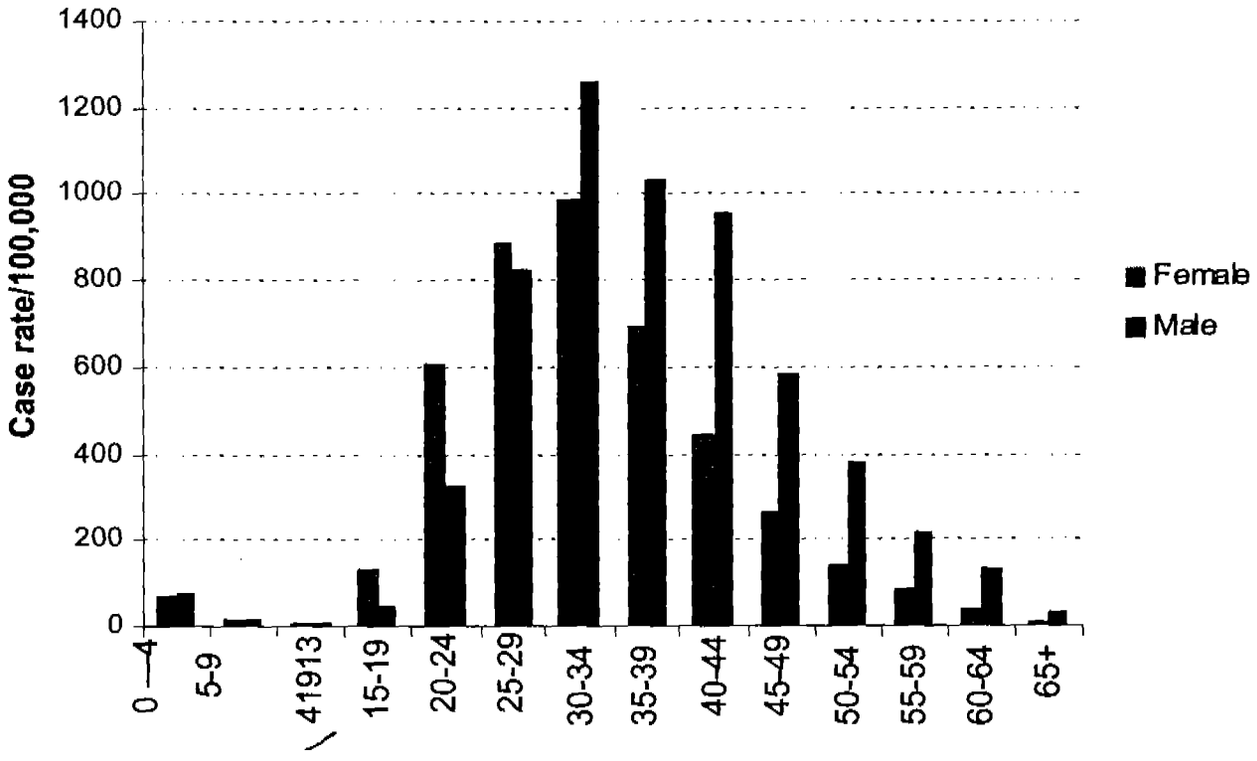


Figure 2: Age and sex distribution of cumulative AIDS cases, 1987 – 1999.

Possible source of infection for reported AIDS cases in 1999

The predominant mode of acquiring infection for the reported AIDS cases was heterosexual (4225 cases, 82.7%) followed by mother to child (286 cases, 5.6%) and blood transfussion (54 cases, 1.1%) (Figure 3). The mode of transmission was not specified for 546 (10.7%) of the reported cases. Information on possible source of infection was not available for Mbeya region. It is also worth noting that the possible source of infection was the opinion of the health care worker filling the notification form. Of those who were reported to have been infected through mother to child transmission of HIV infection, 224 (78.3%) were between 0-4 years of age, 50 (17.5%) were 5-9 years and 12 (4.2%) were 10-14 years old. Among those presumably infected through blood transfussion only 16 were below 15 years of age.

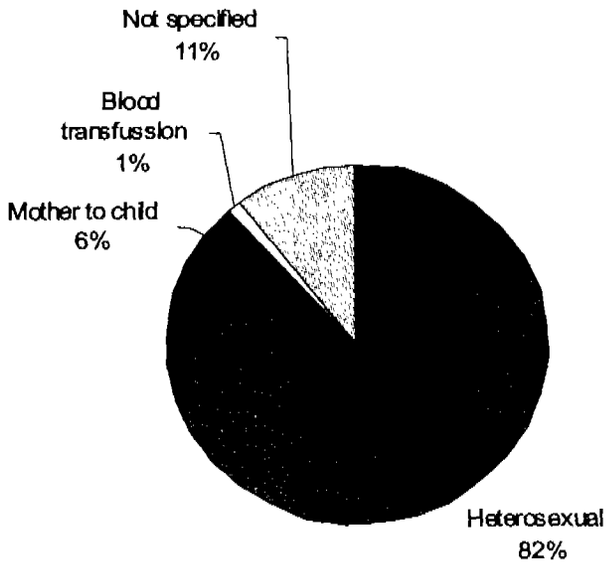


Figure 3: Possible sources of infection for the reported AIDS cases, 1999.

Table 1(a): Cumulative AIDS cases by region and year 1983-1990)

	YEAR								
Region	1983	1984	1985	1986	1987	1988	1989	1990	1991
Arusha	0	0	0	10	47	217	433	647	1117
Coast	0	0	1	4	79	224	465	938	1676
Dar es Salaam	0	0	51	471	1,470	3,093	5,209	7,246	8834
Dodoma	0	0	0	7	47	105	262	310	536
Iringa	0	0	1	3	68	305	374	728	2281
Kagera	3	106	322	847	1,666	2,143	2,576	3,472	4742
Kigoma	0	0	0	3	50	109	244	607	930
Kilimanjaro	0	1	8	36	207	455	571	966	2060
Lindi	0	0	0	1	10	46	113	484	842
Mara	0	0	0	3	30	99	141	280	639
Mbeya	0	0	0	16	208	751	1,077	3,890	6924
Morogoro	0	0	0	11	88	254	364	637	2398
Mtwara	0	0	1	5	26	90	199	479	1361
Mwanza	0	0	15	54	171	448	667	1,303	3041
Rukwa	0	0	0	1	5	98	94	140	261
Ruvuma	0	0	0	20	46	81	210	571	1197
Shinyanga	0	0	0	8	31	144	238	583	1278
Singida	0	0	0	6	74	197	284	456	763
Tabora	0	2	5	6	59	232	525	927	1400
Tanga	0	0	0	13	80	210	351	838	1914
Unspecified	-	-	-	-	-	-	-	1	1
TANZANIA	**3**	**109**	**404**	**1,525**	**4,462**	**9,301**	**14,397**	**25,503**	**44195**

Table 1(b): Cumulative AIDS cases by region and year 1991-1999)

Region	1992	1993	1994	1995	1996	1997	1998	1999	*Population	Cumula-tive case rate **	1999 cases	Case rate for 1999
Arusha	1,637	2,185	2,368	2,615	2,787	3,244	3,567	3,948	1,967,204	200.7	381	19.4
Coast	2,215	2,740	3,023	3,268	3,559	3,796	4,266	4,375	804,025	544.1	109	13.6
DSM	9,295	10,406	11,050	11,302	12,983	13,899	14,517	14,643	2,167,075	675.7	126	5.8
Dodoma	762	1,028	1,294	1,608	1,938	2,517	2,641	2,748	1,598,835	171.9	107	6.7
Iringa	3,334	4,462	4,674	4,785	4,883	5,008	5,031	5,076	1,608,001	315.7	45	2.8
Kagera	5,813	6,646	7,064	7,223	7,426	7,671	7,881	8,310	1811690	458.7	429	23.7
Kigoma	1,556	1,920	2,070	2,257	2,280	2,426	2,481	2,613	1143673	228.5	132	11.5
Kilimanjaro	3,707	4,699	5,119	5,513	5,991	6,618	7,375	7,766	1914499	405.6	391	20.4
Lindi	1,211	1,691	1,966	2,173	2,480	2,712	3,074	3,559	807481	440.8	485	60.1
Mara	980	1,304	1,393	1,486	1,486	1,486	1,515	1,634	1314927	124.3	119	9.0
Mbeya	9,890	11,439	12,214	12,371	14,685	16,835	19,949	23,688	2035495	1163.7	3,739	183.7
Morogoro	3,598	4,328	4,575	4,903	5,189	5,438	5,534	5,863	1657063	353.8	329	19.9
Mtwara	1,968	2,090	2,201	2,267	2,444	2,569	2,843	3,000	1052499	285.0	157	14.9
Mwanza	4,207	5,349	5,731	5,974	6,365	7,006	7,384	7,884	2476731	318.3	500	20.2
Rukwa	496	715	777	801	882	1,227	1,359	1,621	1058009	153.2	262	24.8
Ruvuma	1,807	2,480	2,847	3,087	3,345	3,752	4,260	4,760	1099729	432.8	500	45.5
Shinyanga	1,874	2,624	3,062	3,361	3,824	4,217	4,515	4,861	2400932	202.5	346	14.4
Singida	1,107	1,472	1,688	1,908	2,135	2,167	2,262	2,329	1034419	225.2	67	6.5
Tabora	1,972	2,786	3,075	3,428	3,805	4,278	4,733	5,199	1341675	387.5	466	34.7
Tanga	2,636	3,207	3,475	3,793	4,062	4,278	4,632	4,792	1651440	290.2	160	9.7
Unspecified	1	1	2	44	44	44	44	44			0	
Total	60,066	73,572	79,668	84,167	92,593	101,188	109,863	118,713	30,945,402	383.6	8,850	28.6

*Projected population for 1999. Source: Planning Commission
**Per 100,000 population

Table 2: Distribution of cumulative AIDS cases by age and sex, 1987 - 1999

Age	Male				Female				Unknown sex cases	Total			
	Cases	%	Population	Rate	Cases	%	Population	Rate		Cases	%	Population	Rate
0 –4	2065	4.5%	2,553,809	80.86	1842	4.0%	2,591,235	71.09	17	3,924	4.2%	5,145,045	76.3
5-9	365	0.8%	2,395,942	15.23	408	0.9%	2,391,552	17.06	15	788	0.8%	4,787,494	16.5
10-14	169	0.4%	2,041,771	8.28	227	0.5%	2,033,468	11.16	0	396	0.4%	4,075,239	9.7
15-19	696	1.5%	1,633,818	42.60	2287	4.9%	1,727,857	132.36	7	2,990	3.2%	3,361,674	88.9
20-24	3599	7.9%	1,097,878	327.81	8453	18.2%	1,395,808	605.60	20	12,072	12.9%	2,493,686	484.1
25-29	8763	19.1%	1,064,291	823.36	11191	24.2%	1,267,238	883.10	44	19,998	21.3%	2,331,530	857.7
30-34	9734	21.3%	774,053	1,257.54	8603	18.6%	870,670	988.09	56	18,393	19.6%	1,644,723	1118.3
35-39	7162	15.6%	691,094	1,036.33	5185	11.2%	750,430	690.94	33	12,380	13.2%	1,441,524	858.8
40-44	4682	10.2%	491,206	953.16	2496	5.4%	560,563	445.27	16	7,194	7.7%	1,051,769	684.0
45-49	2778	6.1%	473,441	586.77	1294	2.8%	489,353	264.43	20	4,092	4.4%	962,795	425.0
50-54	1456	3.2%	381,666	381.49	605	1.3%	437,446	138.30	4	2,065	2.2%	819,112	252.1
55-59	693	1.5%	319,309	217.03	266	0.6%	302,125	88.04	3	962	1.0%	621,434	154.8
60-64	357	0.8%	270,551	131.95	125	0.3%	309,353	40.41	4	486	0.5%	579,905	83.8
65+	234	0.5%	674,782	34.7	88	0.2%	634,418	13.87	2	324	0.3%	1,309,200	24.7
Unknown	3013	6.6%	29,741		3252	7.0%	50,885		1479	7,744	8.3%	80,626	
Total	45,766	100.0%	14,893,354	307.29	46,322	100.0%	15,812,401	292.95	1720	93,808	100.0%	30,705,755	305.5

M:F case ratio45,766/46,322 = 0.99
M:F rate ratio307.29/292.95 = 1.05

The cumulative number of AIDS cases by region and year (1992-1999) and by age and sex (1987 – 1999) including case rates (number of cases per 100,000 population) are shown in Tables 1a,1b and 2. The case rate for 1999 is shown in Table 1b. The total population for 1999 by regions has been projected from the 1988 population census adjusted for the growth rate. The NACP estimates that only 1 out of 5 AIDS cases are reported due to under-utilisation of health services, under-diagnosis, under-reporting and delays in reporting. However, the data is believed to reflect the trend of AIDS cases in the country. Due to differences in under-reporting among the different regions, interpretation of region specific case rates should be done cautiously. Indeed, regions with high case rates are those with fairly complete and regular recording and reporting. For example, Mbeya region, which reports AIDS cases to the NACP fairly regularly and consistently, appears to have the highest case rate compared to other regions. Although it is one of the hard hit regions in the country, perhaps it wouldn't have ranked highest if reporting was regular and consistent in all regions. Lindi had the second highest AIDS case rate in 1999 while Dar es Salaam ranked second last (Figure 3 and Table 1b). Contrary to this observation, Dar es Salaam had the highest prevalence of HIV infection among male and female blood donors in 1999 while Lindi had the least prevalence (Table 8 and 9). Thus, it is wise that case rates be used to estimate the disease burden in the community and to evaluate the worthiness of AIDS reporting system in the regions (Figure 3).

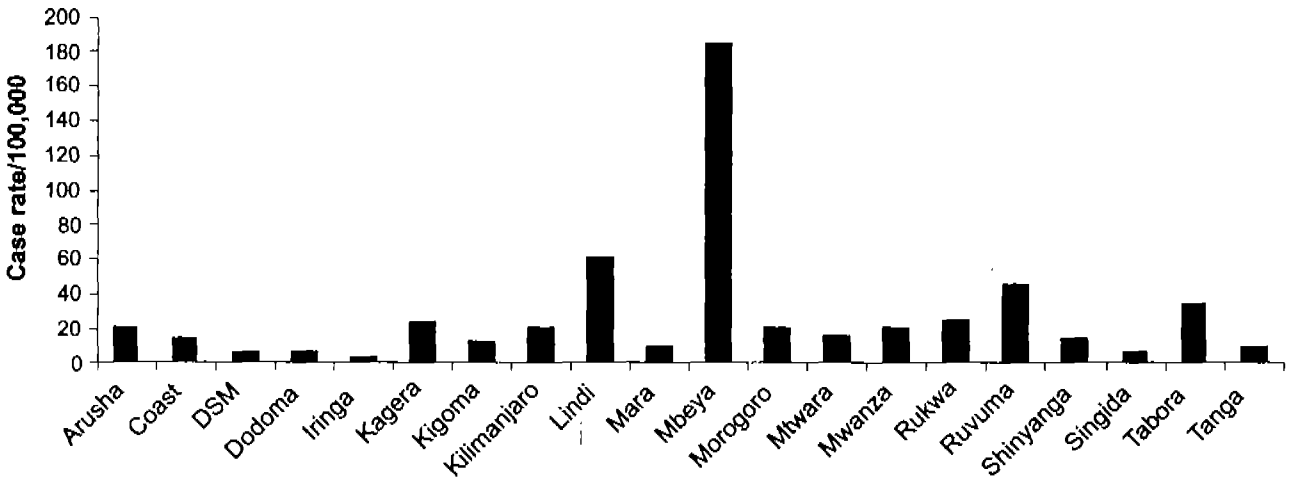


Figure 3: Region specific case rates for the AIDS cases reported in 1999.

The following table (table 3) shows reported AIDS cases by sex and marital status. Except for the divorced category, both males and females were almost equally distributed in the various marital status categories. Overall, majority of reported AIDS cases for both sexes were married. When both sexes were compared, females were likely to be single, divorced or separated as opposed to males who were likely to be married.

Table 3: Reported AIDS cases by sex and marital status in 1999

Marital status	Male		Female		Unknown		Total	
	N	%	N	%	N	%	N	%
Married	1228	57.8	1079	41.1	7	29.2	2314	48.4
Single	459	21.6	770	29.3	6	25.0	1235	25.8
Divorced	92	4.3	261	9.9	2	8.3	355	7.5
Separated	107	5.0	180	6.8	1	4.2	288	6.0
Cohabiting	40	1.9	49	1.9	1	4.2	90	1.9
Not mentioned	199	9.4	289	11.0	7	29.2	496	10.4
Total	**2125**	**100.0**	**2628**	**100.0**	**24**	**100.0**	**4778**	**100**

2.0 HIV SENTINEL SURVEILLANCE USING ANTENATAL CLINIC ATTENDEES

Methods

Sentinel surveillance was established in Tanzania since 1990, when 24 sites were established in 11 out of 20 regions of the mainland Tanzania. To allow for the national and international comparability, the NACP maintains uniformity in the procedures for sampling and HIV testing technique in line with the WHO recommendations for surveillance of HIV infection.

All pregnant women attending the antenatal clinic for the first time for a given pregnancy in the sentinel site constitute the surveillance population. While being provided with antenatal services, a 3-5ml venous blood is drawn for haemoglobin estimation and syphilis serology. The same sample is subjected to unlinked anonymous HIV screening using an ELISA testing algorithm.

HIV prevalence from sentinel sites

During 1999, reports were obtained from 17 sentinel surveillance sites, including 9 in Mbeya, 3 in Dar es Salaam, 2 in Morogoro 1 in Bukoba, 1 in Kilimanjaro and 1 in Mafinga. Table 4 shows prevalence of HIV infection by site for the years 1992 through 1999. Prevalence varies by site. Most sites show a stable prevalence except Isoko and Kyela in Mbeya, Moshi rural, which indicates an increasing trend. On the contrary, data from Bukoba urban indicate a decreasing trend.

Table 4: Prevalence of HIV infection among antenatal women from 1992 to 1999 (all ages)

	1992	1993	1994	1995	1996	1997	1998	1999
Dar es Salaam								
Kasorobo – Temeke		15.3		7.3				15.3
Kigamboni – Temeke								14.1
**Sinza – Kinondoni								18.1
Iringa								
Mafinga (roadside)	25.0							20.9
Mbeya region (all sites)	15.4	15.9	20.3	18.6	17.4	18.2	15.4	16.8
Mbeya rural	11.1	12.1	20.4	14.2	14.5	15.6	12.3	13.7
Isoko (rural)					7.2	8.1	10.2	19.1
Itete (rural)					5.6	14.8	11.8	11.6
Mwambani (rural)					16.0	13.7	14.5	11.0
Chimala (roadside)					17.0	15.9	12.5	12.1
Mbeya urban	19.3	17.7	19.8	20.7	18.5	19.6	17.3	18.0
Kiwanjampaka (urban)					17.0	22.5	20.5	23.0
Meta (urban)					14.6	17.9	12.5	13.5
Ruanda (urban)					24.0	18.1	18.8	17.5
Kyela(border)	26.2	27.5	21.6	33.3	25.9	25.0	24.0	29.5
Morogoro								
Morogoro reg. Hosp (urban)								18.4
Turiani DDH (rural)								9.8
Rukwa			26.5	17.4				
Namanyere(Rural)	11.3	8.33	19	11.2		11.2		
Sumbawanga(Urban)	12	23.3	31.3	22.2		21.0		
Ruvuma								
Songea(urban)	9.7	16.1	15.7	14.2		11		
Namtumbo(rural)	3.5	6.7	3.2	5.6		4		
Kilimanjaro								
Umbwe (Moshi rural)	6.4				9.1	10	20	19.2
Kagera								
Bukoba Urban		16.1			13.7			7.0

**Capillus test

Prevalence data from six sites in three regions namely Mbeya, Kilimanjaro and Kagera were broken down by age. This information is shown in Table 5 and Fig 3. Kyela, a border sentinel site shows a persistently high prevalence regardless of age group category prevalence. Age specific HIV prevalence increased five folds from 4% in 1997 to 20% in 1998 and 1999 for the Moshi rural site, particularly in the 14-24 years age group. This age group gives the idea of the rate of new infections (incidence) in the community. On the contrary, the Bukoba urban site shows a gradual decline in the prevalence of HIV infection especially in the 14-24 years age group. Prevalence in the age group 35 years and above is generally lower than other age groups in all sites except Mbeya border, which has an exceptionally high prevalence.

Data from an epidemiological study on pregnant women conducted at Haydom Lutheran Hospital and its 21 rural MCH clinics which are located in remote villages in Mbulu and Hanang districts indicate that, two of 733(0.3%) pregnant women were infected by the HIV virus in 1995/96. In 1999 two of 467(0.4%) were HIV positive. These result shows that there are still areas in Tanzania which are not yet as much affected as other communities. These areas require vigorous HIV prevention programmes to prevent escalation of the epidemic.

Table 5: Age specific prevalence of HIV infection among antenatal women from 1990-1999

	Age	1990		1991		1992		1993		1994		1995		1996		1997		1998		1999	
	group	*N	£%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
	14 – 24	298	17.1	473	17.3	838	19.9	804	18.8	327	20.5	385	20.5	359	17.8	350	18.9	374	17.6	349	16.3
Mbeya	25 – 34	243	16.0	240	14.6	465	14.2	454	18.3	236	20.8	253	21.7	211	19.9	187	23.5	232	17.2	225	22.2
Urban	35 – 49	41	12.2	41	7.3	68	13.2	67	6.0	39	7.7	42	16.7	29	17.2	35	5.7	17	11.8	26	3.8
	Total	582	16.3	754	15.9	1371	17.7	1325	18.0	602	19.8	680	20.7	599	18.5	572	19.6	623	17.3	600	18.0
	14 – 24	169	9.5	337	11.3	523	8.8	608	9.7	294	15.6	367	13.6	214	13.6	274	10.6	296	12.8	286	14.3
Mbeya	25 – 34	120	12.5	172	11.6	331	11.5	303	9.6	186	16.7	175	21.7	152	8.6	140	15.0	179	12.3	166	13.9
Rural	35 – 49	38	5.3	34	0.0	57	12.3	59	6.8	42	21.4	32	3.1	27	11.1	27	0.0	42	9.5	65	10.8
	Total	327	10.1	543	10.7	911	10.0	970	9.5	522	16.5	574	15.5	393	11.5	441	11.3	517	12.4	517	13.7
	14 – 24	122	17.2	139	19.4	455	11.9	474	13.5	227	27.8	242	14.0	239	16.7	223	19.7	247	10.9	229	10.9
Mbeya	25 – 34	93	16.1	92	9.8	239	11.3	242	12.4	110	29.1	134	11.9	131	21.4	130	22.3	124	16.9	146	14.4
Road side	35 – 49	18	16.7	20	5.0	49	4.1	57	15.8	25	20	27	3.7	30	6.7	21	23.8	28	3.6	24	16.7
	Total	233	16.7	251	14.7	743	11.2	773	13.3	362	27.6	403	12.7	400	17.5	374	20.9	399	12.3	399	12.5
	14 – 24	77	23.4	25	36.0	169	20.1	205	30.7	117	20.5	132	36.4	135	26.7	143	24.5	149	22.8	141	27.0
Mbeya	25 – 34	57	26.3	17	29.4	80	36.3	125	28.8	44	22.7	49	30.6	50	26	49	28.6	45	28.9	56	35.7
Border	35 – 49	6	33.3	2	50.0	26	26.9	22	13.6	5	40.0	11	27.3	8	12.5	8	12.5	6	16.7	3	33.3
	Total	140	25.0	44	34.1	275	25.5	352	29.0	166	21.7	192	34.4	193	25.9	200	25.0	200	24.0	200	29.5
	14 – 24	665	21.8					1560	16.1					1696	9.4					261	6.9
Bukoba	25 – 34	518	25.1					1022	20.6					997	19.2					26	7.7
Urban	35 – 49	109	18.4					234	10.7					200	13.0						
	Total	1292	22.2					2816	16.1					2893	13.7					287	7.0
	14 – 24															90	4.4	131	19.8	94	19.1
Umbwe	25 – 34															75	16	125	20	106	19.8
(Moshi	35 – 49															11	9.1	44	18.2	23	17.4
Rural)	Total															176	9.7	301	19.9	223	19.2

*N = Number tested

£% = HIV prevalence per cent

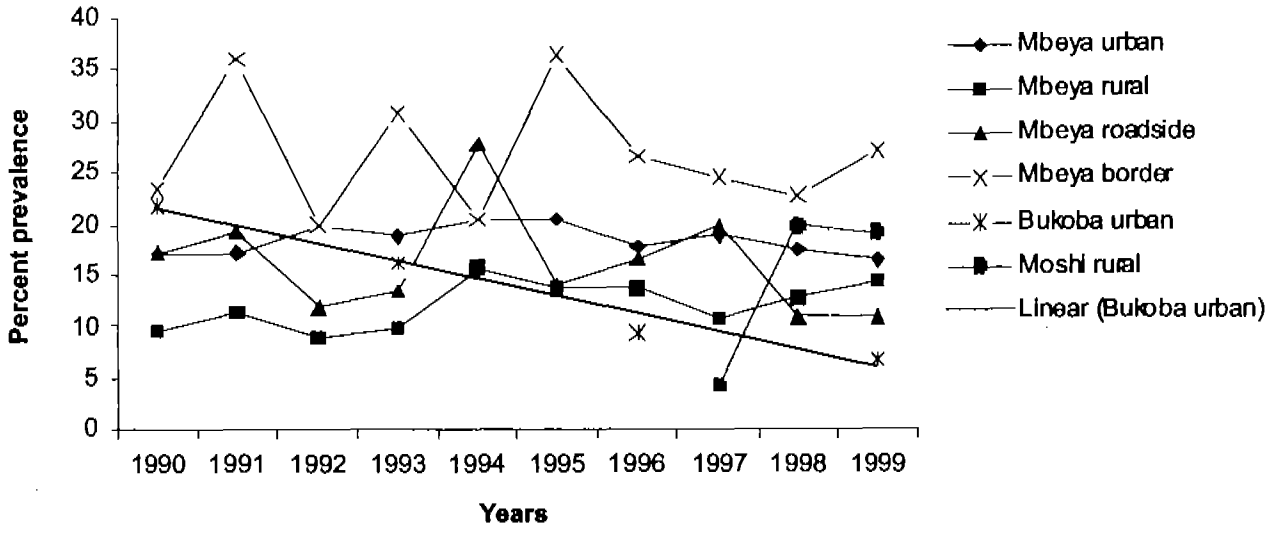


Figure 6: Prevalence of HIV-1 infection among ANC attendees fpr age-group 14-24 years -selected sites (1990-1999)

Table 6: Prevalence of HIV infection in antenatal women by site and parity in 1999

ANC Site	Parity						Overall crude prevalence
	0 - 1			>1			
	N	Crude prevalence %	Age adjusted Prevalence* %	N	Crude prevalence %	Age adjusted Prevalence Prevalence %	
Bukoba	244	5.3	5.8	43	16.3	15.0	7.0
Kasorobo	180	13.3	15.3	232	16.8	16.0	15.3
Kigamboni	238	11.8	13.3	217	16.6	20.8	14.1
Mafinga	103	22.3	23.4	184	20.1	23.0	20.9
Morogoro	243	21.0	20.2	147	16.3	20.7	18.4
Sinza**	152	5.8	14.5	124	21.0	26.0	18.1
Turiani	126	6.3	4.2	274	11.3	13.6	9.8
Umbwe	111	17.1	17.3	129	20.2	26.4	18.8

*Standard population is the combined ANC enrolees from all sites for 1999.
**Capillus test.

Clients with history of single parity had a lower HIV prevalence for all sites except Mafinga and Morogoro urban sites. Parity 0 – 1 show a lower prevalence when compared to parity 2 and above regardless of using crude or age adjusted estimates (Table 6). Analysis at the level of parity may not necessarily reflect prevalence at general population level. However, parity 0 –1 gives an idea of the rate of new infections.

Syphilis serology in sentinel sites

Together with HIV sentinel surveillance among pregnant women, testing for syphilis is routinely done for all pregnant women during their first attendance to antenatal clinics. During 1999 the prevalence of syphilis ranged between 0.4 to 32.6%. Table 7 presents the trend in the prevalence of syphilis among pregnant women in some antenatal clinics from 1990 to 1999.

Table 7: Prevalence (%) of syphilis infection among antenatal women from 1990 to 1999

ANC	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Kagera										
Bukoba		2.7	3.6							6.2
Mwanza										
Mwanza urban		7.0	8.7	6.5		7.9				
Mkula (Magu)			10.4	10.5		11.0				
Mbeya										
Mbeya rural			13.3					2.2	9.7	7.0
Chimala	4.4		10.0		14.0	8.5	2.5	6.3	8.0	7.5
Isoko	7.5	7.3	22.0		5.5	0.7	2.7	0.0	8.8	7.5
Itete			8.0		10.1	7.4	0.0	2.0	4.7	9.7
Mwambani	6.6		8.0		17.5	11.0	10.5	3.5	14.5	8.0
Kyela		4.8	17.9		7.5	1.0	4.1	0.0	5.0	1.5
Mbozi					8.0	6.2	2.5	1.5	9.0	8.0
Mbeya urban	9.1	8.6				7.3	6.8	0.8	4.8	4.0
Kiwanjampaka		26.6	10.0		13.5			0.5	3.5	6.5
Mwanjelwa		20.0	14.0		10.6			0.0		
Meta		11.9	5.0		13.0			2.0	6.5	3.0
Dar es Salaam										
Temeke Dist. Hos.			4.1							
Mwananyamala			1.6							
Aga Khan clinic			13.6							
Kasorobo– Temeke										32.6
Kigamboni										14.2
Sinza(Kinondoni)										12.1
Coast										
Coast			10.8							
Bagamoyo			12.0							
Kisarawe			6.8							
Kibaha			11.2							
Kilimanjaro										
Umbwe		1.7	3.6	0.9		1.1	0.7	4.8	0.0	0.4
Iringa										
Mafinga		19.9	21.7	28.3		1.2				17.3
Mtwara		4.2								
Nanguruwe			8.3			0.0				
Ndanda								15		
Mara										
Nyasho		1.2	7.0	3.9		5.0				
Rukwa			16.8							
Namanyere			18.0							
Sumbawanga			15.7							
Ruvuma										
Madaba		51.9	3.6				12.0	2.5		
Songea			3.3			4.0	2.1	4.0		12.1
Namtumbo			7.1			1.7	4.9	5.4		14.0
Shinyanga				5.1						
Morogoro										
Urban										17.3
Turiani										0.4

3.0 HIV SENTINEL SURVEILLANCE USING BLOOD DONORS

Methods

Screening of donor blood for HIV antibodies was introduced in the country since 1987. Initially, screening was done in regional and referral hospitals only, but since 1990 all hospitals which provide blood transfusion in the country are screening donor blood for HIV antibodies in order to ensure safe transfusion. Sets of forms entitled blood donor HIV registers are distributed through RMOs to all hospitals carrying out blood donation and transfusion services. Copies of dully-filled forms are returned to the NACP for processing and reporting.

Prevalence of HIV infection

During 1999, 119,114 persons donated blood, comprising of 98,018 (82.3%) males, 21,043 (17.7%) females and 53 (4.4%) donors of unspecified sex. Majority (99.0%) were relatives of patients, 0.9 % were institutional donors and 0.1% were paid donors. The overall prevalence of HIV infection among blood donors was 9.4%. The prevalence of HIV infection in the various donor categories was 9.4% (11,023/117,400) for relative donors, 13.3% (138/1,041) for institutional donors and 13.4% (19/142) for paid donors. The difference in HIV prevalence between relative and institutional donors was statistically significant. It was not possible to make valid comparison for the paid donor category because of the small sample size. These data suggest that inclusion of donor categories other than relative donors does not influence the overall HIV prevalence among this sentinel population. However, for the purpose of selection of safe blood donors, the relative category would be preferred than the institutional donor group.

HIV prevalence in male blood donors was 8.7% and in female blood donors the prevalence was 12.6 %. This difference is statistically significant. Extrapolating these rates to the Tanzania Mainland adult population, 1,259,539 persons aged 15 to 49 years, (1,745,320 adults aged 15 and above) were infected with the AIDS virus as of December 1999. In general, the prevalence of HIV infection in both men and women has been continuously increasing for the past eight years. As shown in Table 9 the prevalence among female blood donors in Dar es Salaam has been remarkably high from1997-1999, largely because the HIV prevalence reported from Ocean Road Hospital is very high (for 1999, 56.1% for females and 35.7% for males).

Table 8: Prevalence (%) of HIV infection among male blood donors by region, 1992-1999.

Region	1992	1993	1994	1995	1996	1997	1998	1999
Arusha	2.6	2.6	2.7	6.1	3.0	2.8	4.2	21.3
Coast	4.1	5.9	6.6	5.5	9.4	8.2	7.7	7.5
Dodoma	2.8	1.7	0.0	0.0	4.9	7.9	4.9	5.0
DSM	8.5	-	-	4.9	17.2	19.8	12.5	23.8
Iringa	11.1	13.2	7.7	13.0	14.2	14.2	14.8	14.7
Kagera	10.9	5.8	7.9	10.8	8.0	8.6	14.8	17.3
Kigoma	1.9	7.0	3.4	4.9	5.6	2.8	3.8	6.3
Kilimanjaro	2.4	3.4	1.5	10.7	4.1	4.1	4.8	4.7
Lindi	3.7	2.5	-	3.0	3.7	3.0	3.3	3.3
Mara	6.9	5.0	3.7	5.8	7.6	8.0	7.6	8.6
Mbeya	15.1	0.0	-	9.0	11.1	12.6	13	13.6
Morogoro	4.6	5.7	-	-	4.1	5.5	7.4	10.3
Mtwara	5.2	9.5	15.2	10.1	9.7	4.5	8	7.0
Mwanza	5.1	4.0	2.9	12.5	7.6	9.5	6.9	6.2
Rukwa	6.7	-	-	-	8.0	7.9	-	
Ruvuma	6.2	7.3	2.0	3.3	8.1	7.7	7.4	9.8
Shinyanga	6.1	6.4	14.7	11.7	8.5	8.5	8	7.7
Singida	2.7	2.8	0.0	-	5.6	3.6	6.2	7.7
Tabora	2.8	4.4	2.5	6.2	3.2	6.1	5.9	6.8
Tanga	7.1	4.4	-	10.4	5.5	8.0	7.3	7.9
Total	**5.3**	**5.9**	**6.9**	**7.8**	**6.8**	**7.6**	**8.5**	**8.7**

Table 9: Prevalence (%) of HIV infection among female blood donors by region, 1992 – 1999

Region	1992	1993	1994	1995	1996	1997	1998	1999
Arusha	2.2	3.9	-	15.6	4.4	6.0	7.6	25.2
Coast	5.0	10.2	11.8	9.2	-	8.0	13.1	15.8
Dodoma	4.8	-	-	0.0	-	9.2	6.2	6.7
DSM	7.7		-	6.7	-	40.6	32.1	55.0
Iringa	8.1	17.6	20.0	7.8	12.4	16.4	15.1	14.4
Kagera	11.0	8.6	8.3	14.3	7.4	11.3	14.3	19.0
Kigoma	4.1	5.8	5.1	0.0	6.1	2.6	2.6	6.6
Kilimanjaro	2.2	1.8	2.9	0.0	5.9	8.1	8.1	6.6
Lindi	.3	1.9	-	1.6	3.6	4.9	5.2	4.3
Mara	8.2	2.9	10.0	9.4	10.1	13.1	7.7	10.2
Mbeya	20.3	-	-	11.4	13.8	14.4	15.1	19.3
Morogoro	5.7	10.8	-	-	6.0	9.1	8.8	16.0
Mtwara	10.5	5.7	0.0	5.6	10.5	-	23	21.3
Mwanza	5.7	8.0	5.0	0.0	8.5	11.8	9.5	10.6
Rukwa	0.0	-	-	-	8.8	-	-	-
Ruvuma	6.4	6.7	2.1	6.1	10.5	12.7	12.2	11.8
Shinyanga	10.0	21.6	33.3	0.0	14.9	14.9	14.6	12.9
Singida	4.5	4.6	0.0	-	5.8	5.2	7	9.4
Tabora	2.7	5.8	0.0	12.9	3.2	7.7	9.5	8.8
Tanga	7.0	5.9	-	20.8	7.0	13.6	11.9	14.0
Total	**5.9**	**6.2**	**4.8**	**9.4**	**8.2**	**11.6**	**11.8**	**12.6**

Table 10: Age-specific prevalence (%) of HIV infection among male blood donors (1991-1999)

Age	1991	1992	1993	1994	1995	1996	1997	1998	1999
15-19	3.2	3.7	3.9	2.4	5.3	4.4	4.5	5.2	5.4
20-24	5.0	4.9	5.8	2.4	5.8	5.9	4.9	6.8	7.0
25-29	6.7	6.0	6.1	5.8	7.2	7.4	7.2	8.5	8.8
30-34	6.4	5.8	6.2	5.4	7.7	7.9	7.3	10.1	10.0
35-39	6.1	5.6	6.5	9.8	7.8	7.7	7.4	9.8	9.9
40-44	4.8	3.9	5.1	0.0	5.9	6.3	6.6	9.1	9.9
45-49	4.5	4.2	4.9	7.4	5.8	5.7	5.8	8.4	8.5
50-54	4.4	2.6	4.3	0.0	3.5	5.6	4.8	7.1	7.7
55+	4.0	2.3	5.2	12.5	2.5	4.4	5.9	8.2	5.5
Total	**5.8**	**5.3**	**5.9**	**4.8**	**6.7**	**6.9**	**6.0**	**8.5**	**8.7**

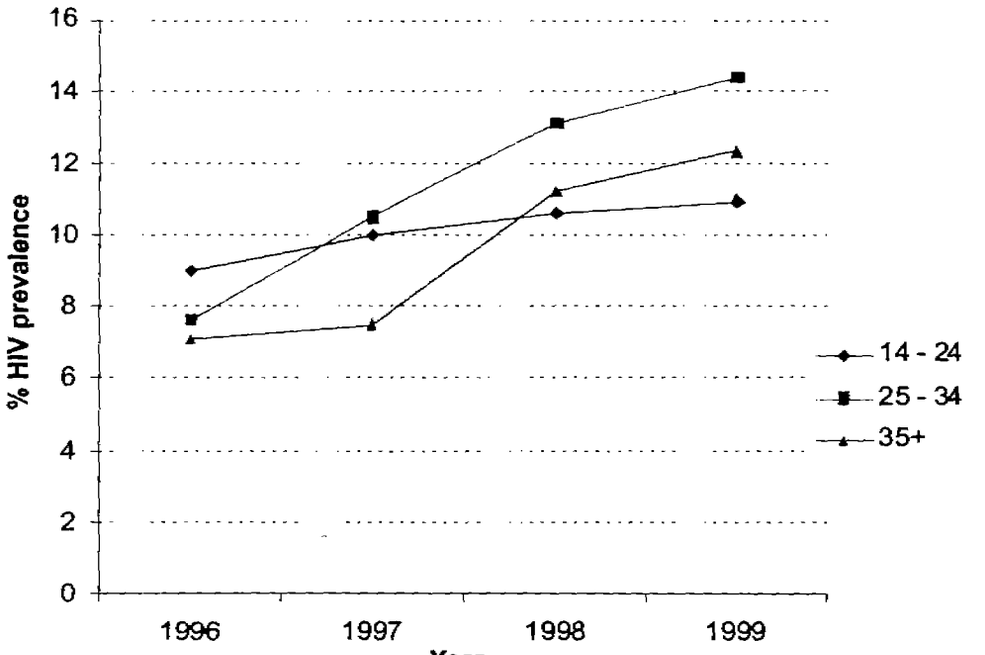


Figure 4: Age specific HIV prevelance among female blood donors 1996 - 1999

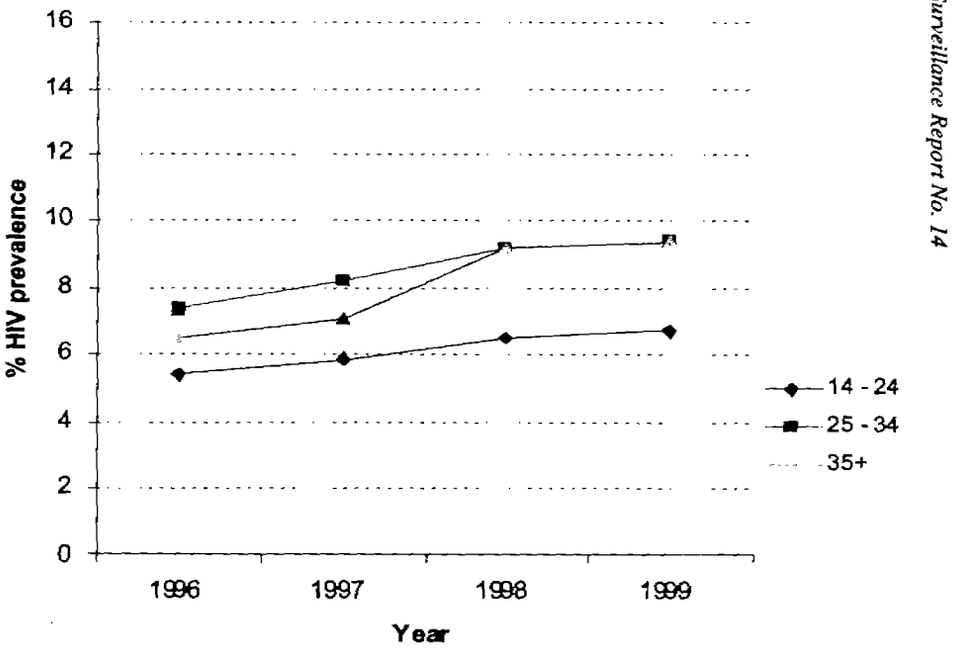


Figure 5: Age specific HIV prevalence among male blood donors 1996 - 1999

As shown in the age specific HIV prevalence among female blood donors from 1996-1999 (Figure 4), the prevalence for the age group 14-24 was initially higher compared to other age groups in 1996, but has increased at a slower pace compared to the age specific prevalences for older age groups. In contrast, the age specific HIV prevalence for the 14-24 age group in males has remained persistently lower compared to that in older age group since 1996 (Figure 5).

Table 11: Age-specific prevalence (%) of HIV infection among female blood donors (1991-1999)

Age	1991	1992	1993	1994	1995	1996	1997	1998	1999
15-19	4.9	4.2	2.9	5.6	5.3	6.3	6.7	8.8	7.8
20-24	7.7	7.2	7.5	5.4	9.4	9.8	10.2	11.3	12.2
25-29	8.7	6.6	7.2	7.1	11.6	10.1	11.0	13	14.5
30-34	6.5	5.7	6.6	6.9	10.0	9.3	11.0	13.2	14.2
35-39	4.8	5.7	6.7	10.1	8.8	9.3	12.1	12.5	14.9
40-44	6.3	3.6	1.7	5.4	7.6	6.0	9.6	10.3	10.0
45-49	3.4	4.4	3.7	7.5	4.8	5.5	8.2	9.8	10.2
50-54	5.6	5.4	5.9	6.2	*6.3	5.6	11.2	8.8	7.0
55+	6.7	4.2	5.3	3.3	*16.7	7.1	7.6	7.8	8.8
Total	**7.2**	**5.9**	**6.3**	**6.9**	**9.2**	**8.7**	**9.7**	**11.8**	**12.6**

As shown in Tables 10 and 11, prevalence of HIV infection among blood donors shows some specific difference with regard to age and sex. In 1999, as in previous years, higher prevalence of HIV infection was seen among females than in males of the same age group. The prevalence across the age groups for male ranged between 5.4 % for the age group 15 - 19 and 10.0% for the age group 30 - 34. For females, the range was 7.0% and 14.9% for the age groups 50-54 and 35 – 39 years respectively.

4.0 CURABLE STDs

Methods

Comprehensive STDs services have been established in about 50% of health facilities in 11 regions namely Mara, Mwanza, Shinynga, Kigoma, Dodoma, Iringa, Morogoro, Arusha, Tanga, Lindi and Mbeya. More than 75% health facilities in all districts of Mbeya region provides STD services. Also one to four STD Centres are operating in each of the following regions: Kagera, Coast, Kilimanjaro and Tabora.

The NACP distributes data collection forms to RMOs, who in turn distributes them to health care facilities that provide sexually transmitted diseases (STI) services. The forms are designed to collect information about demographic characteristics of clients, type and location of health facility, new STI syndromes, re-treatment episodes and contacts treated. Duly filled forms are returned to the RMO for subsequent forwarding to the NACP, Ministry of Health.

Findings for 1999

In 1999, genital discharge syndrome (GDS) was the commonest new STDs reported from regions other than Mbeya (Tables 12, 13, 14). This was true for both sexes, however there was a tendency of this observation been more common among females compared to males. In contrast, both GDS and GUD were the commonest STD syndromes reported in Mbeya region (Table 14). In regions other than Mbeya male female ratio of reported contacts was 0.91 (2945 males and 3221 females) the ratio for Mbeya was 0.87, suggesting that there were more female (7328) contacts compared to males (6366). Episodes retreated in regions other than Mbeya were 4307 females and 1853 males. Generally new STD episodes were reported more in females than males.

Table 12:Distribution of reported new STD episodes in regions other than Mbeya by syndromes, age and sex; Jan to Dec 1999.

Diagnosis	Under 20		20 – 29		30 and above		Total		TOTAL
	Male	Female	Male	Female	Male	Female	Male	Female	
Genital Discharge	1041	2146	3501	5769	3419	3189	7961	11104	19065
Genital Ulcers	319	560	1458	1501	1403	867	3180	2928	6108
PID		1275		4143		3007		8425	8425
VDRL/RPR +ve	58	326	192	1081	242	527	492	1934	2426
Other STDs	442	490	573	786	536	534	1551	1810	3361
TOTAL	**1860**	**4797**	**5724**	**13280**	**5600**	**8124**	**13184**	**26201**	**39385**

Table 13: Distribution of STD syndromes, VDRL, contacts and re-treatment by age and region; Jan – Dec 1999

Region	GDS			GUD			PID			VDRL			OTHER Syndromes			RETREATED		CONTACTS	
	< 20	20-29	30+	< 20	20-29	30+	< 20	20-29	30+	< 20	20-29	30+	< 20	20-29	30+	M	F	M	F
Coast	55	27	20	4	10	6	11	37	30	3	7	9	5	11	10	12	7	6	15
DSM	1057	2240	1558	200	744	460	461	1053	650	61	217	114	283	419	287	291	360	673	549
Iringa	97	213	163	61	114	118	26	60	50	28	78	49	26	30	17	44	72	111	73
Kagera	45	266	279	22	30	42	23	102	89	3	44	62	52	63	53	108	142	237	1145
Kigoma	279	1059	780	57	209	186	67	326	266	9	47	49	110	92	157	263	532	507	457
Mara	23	106	34	12	37	32	1	12	3	6	0	3	2	8	5	43	41	48	60
Morogoro	187	619	352	54	219	126	69	262	168	31	81	52	34	40	40	296	155	37	107
Mtwara	7	40	22	1	7	9	3	18	11	1	6	2	1	0	6	1	7	5	6
Mwanza	672	2188	1422	233	689	533	286	988	801	171	513	244	149	270	194	381	650	1234	605
Ruvuma	26	65	69	20	43	34	7	24	28	8	27	14	12	12	18	6	8	46	45
Shinyanga	525	1837	1364	171	662	571	177	943	536	47	132	88	209	330	194	594	950	929	869
Tabora	8	35	29	4	24	24	7	13	3	0	2	1	8	0	7	0	0	3	8
Tanga	206	570	511	40	170	127	137	305	372	16	56	82	41	84	82	66	60	181	201
Total	***3186***	***9263***	***6600***	***879***	***2958***	***2268***	***1275***	***4143***	***3007***	***384***	***1210***	***769***	***932***	***1359***	***1070***	***2105***	***2984***	***4017***	***4140***

Mbeya, Arusha, Dodoma, Singida, Lindi, Rukwa and Kilimanjaro are not included.

Table 14: Distribution of reported new STD episodes by syndromes and sex; Jan – Dec 1999

Region	GDS		GUD		PID	VDRL		OTHER Syndromes		RETREATED		CONTACTS	
	Male	Female	Male	Female	Female	Female	Male	Male	Female	Male	Female	Male	Female
Arusha	583	632	81	38	358			84	52				
Coast	84	18	13	7	78	6	13	11	15	12	7	6	15
DSM	1875	2953	573	829	2163	81	311	424	564	291	360	673	549
Iringa	199	274	168	125	136	26	129	44	29	44	72	111	73
Kagera	288	365	51	65	236	48	61	97	106	108	142	237	1145
Kigoma	1691	2611	409	403	1225	35	70	221	249	263	532	507	457
Kilimanjaro	62	240	53	27	183			23	22				
Mara	1493	2205	754	632	1093	4	5	163	134	43	41	48	60
Morogoro	421	737	174	225	499	62	102	62	52	296	155	37	107
Mtwara	37	32	9	8	32	3	6	0	7	1	7	5	6
Mwanza	2159	2724	1026	703	2394	42	886	297	386	381	650	1234	605
Ruvuma	84	76	51	46	59	28	21	16	26	6	8	46	45
Shinyanga	2297	2754	1131	805	2277	83	184	490	405	594	950	929	869
Tabora	459	747	278	204	600	1	2	266	550	0	0	3	8
Tanga	510	777	173	164	814	73	81	89	118	66	60	181	201
Total	***12242***	***17145***	***4944***	***4281***	***12147***	***492***	***1871***	***2287***	***2715***	***2105***	***2984***	***4017***	***4140***

Note: Mbeya, Rukwa,Lindi, Dodoma and Singida regions are not included.

Table 15: Distribution of reported new STD episodes by sex and districts; Mbeya region January – Dec 1999.

District	GUD		GDS		PID	OTHER Syndromes		RPR + VE		CONTACTS		TOTAL	
	Male	Female	Male	Female	Female	Female	Male	Male	Female	Male	Female	Male	Female
Ileje	548	387	278	402	224	22	28	24	45	212	279	1084	1365
Mbeya Urban	2655	2503	2487	3196	2680	906	695	691	903	1351	1209	8090	11186
Kyela	1255	1310	1449	1403	1330	318	239	86	136	830	1005	3938	5423
Mbarali	944	758	949	992	708	212	198	128	230	611	658	2844	3544
Mbozi	1651	1192	1522	1781	1718	361	318	209	298	1392	1807	5135	7114
Rungwe	1618	1287	1504	1510	1570	452	335	637	603	794	1005	5005	6310
Chunya	1100	963	593	1166	872	321	253	270	436	767	835	3051	4525
Mbeya rural	1265	882	899	871	918	215	185	180	175	409	530	2968	3561
Total	***11036***	***9282***	***9681***	***11321***	***10020***	***2807***	***2251***	***2225***	***2826***	***6366***	***7328***	***32,115***	***43028***

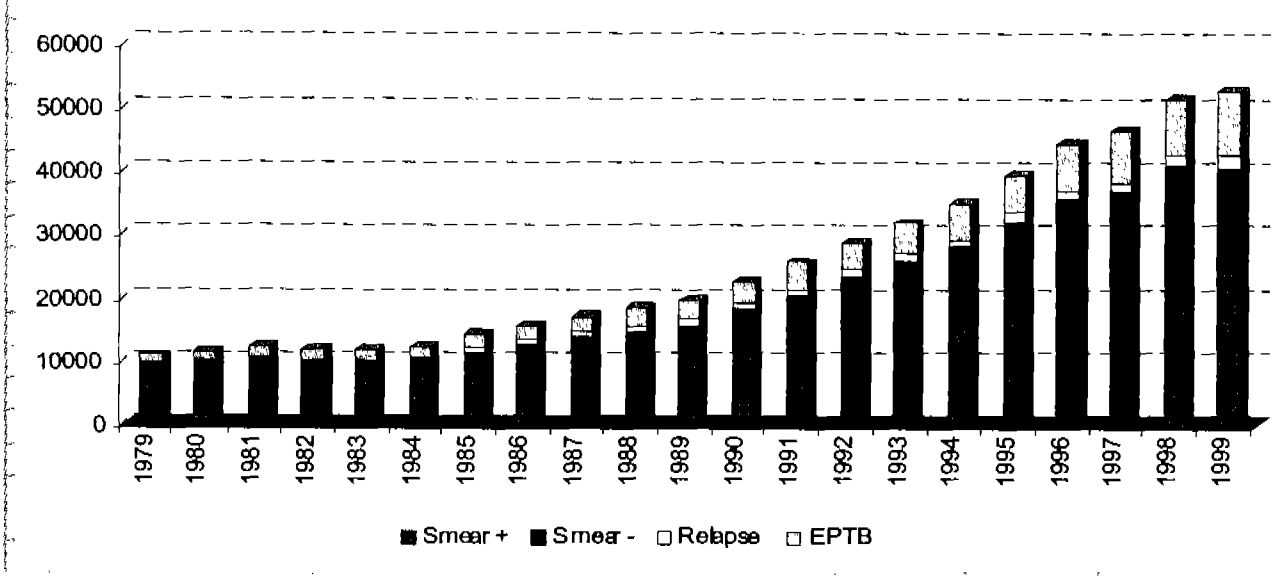
5.0 Impact of HIV on other diseases

Mycobacterial infections

Susceptibility of HIV-infected patients to mycobacterial infection has been reported in all countries affected by the epidemic. This has led to the resurgence of tuberculosis (TB) in many countries, including those where a declining trend had been recorded after many years. In Tanzania, the good efforts of the National Tuberculosis and Leprosy control programme (NTLP) had been rewarded by a declining trend of TB cases until 1983 when a rapidly rising trend of new cases was recorded (Figure 6). Important aspects of association between HIV and TB include:

- It is currently estimated that in Tanzania up to 40% of all tuberculosis cases are HIV-associated
- There is a high tendency to extrapulmonary infection
- There is a high rate of smear negative pulmonary infection
- Recurrence after cure is common
- Emergence of multi-drug-resistant strains is a growing problem
- HIV infected patients with TB have a high risk of hypersensitivity reactions to anti-TB drugs

Figure 6: Trend of notified cases of tuberculosis in Tanzania, 1979 - 1999



Other bacterial infections

These include:
Pneumonia due to Streptococcus pneumoniae
Deep-seated bacterial diseases such as pyomyositis due to *Staphylococcus aureus* and meningitis due to *Neisseria meningitidis* have been reported at an increased rate among HIV-infected hospitalised patients in Tanzania (Pallangyo et al., 1992)

Fungal infections

In Tanzania, as elsewhere in the world, disseminated candida infection is an important clinical marker of HIV infection. The magnitude of candidiasis in Tanzania is scantly documented but anecdotal evidence as well as experience in clinical management of HIV/AIDS cases suggests that it occurs in the majority of patients with HIV/AIDS. For example, from annual reports of the department of Microbiology/Immunology, Muhimbili Medical Centre, the number of *Candida albicans* isolates from blood per year has been increasing from 1 between June 1980 - June 1981 (before the first cases of AIDS were described in Tanzania) to 8 in the period

June 1991 - June 1992, 6 between June 1996 - June 1997 and 10 between June 1997 - June 1998 (Departmental Annual reports, 1980/81, 1991/92, 1996/97 and 1997/98).

HIV-associated *Cryptococcus neoformans* infection is a growing problem in Tanzania. Based on reports from Muhimbili Medical Centre, the rate of isolation of *Cryptococcus neoformans* from cerebrospinal fluid has remarkably been increasing, from 0 in the period June 1980 - June 1981 to 11 in the period June 1991 - June 1992, 12 between June 1996 - June 1997 and 36 between June 1997 - June 1998 (Departmental Annual reports, 1980/81, 1991/92, 1996/97 and 1997/98).

Viral infections

Human herpes virus (HHV) infections, especially reactivation of herpes zoster
Human papilloma virus (HPV) infection.

HIV-associated malignancies

Those reported frequently in Tanzania include:
Epidemic Kaposi's sarcoma (EKS) and high grade malignant lymphomas

6.0 Voluntary Counselling and HIV testing

Up to December 1999, Voluntary Counselling and HIV testing (VCT) services continued in 85 districts. Report from 22/85 (25.9%) of the districts is presented in Table 16. Of the total 4719 clients counselled, 2472 were new, 2608 of which agreed to HIV testing. Among those who were tested, 1978/2608 (75.8%) were found to be HIV seropositive.

Table 16: Voluntary Counselling and HIV Testing Services January – December 1999

Region	1997			1998			1999		
	New clients	Clients tested	HIV positive %	New clients	Clients tested	HIV positive %	New clients	Clients tested	HIV positive %
Arusha	162	72	47.2	187	98	65.3	457	100	76.0
Coast	100	57	73.7	162	84	75.0	310	119	63.0
Dodoma	151	51	74.5	120	51	76.5	-	-	-
Dsm	880	642	80.5	643	685	75.0	119	1109	86.6
Iringa	186	122	76.2	335	198	69.7	568	356	73.6
Kagera	20	16	62.5	38	32	21.9	-	-	-
Kigoma	130	40	57.5	35	27	25.9	76	33	72.7
Kilimanjaro	114	82	63.4	149	98	54.1	-	-	-
Lindi	75	56	26.8	112	58	56.9	-	-	-
Mara	48	17	88.2	149	28	96.4	-	-	-
Morogoro	43	36	77.8	108	34	88.2	115	89	65.2
Mtwara	38	23	30.4	141	71	85.9	191	70	72.9
Mwanza	508	134	65.7	499	463	62.4	429	682	64.5
Rukwa	104	40	87.5	113	46	67.4	17	13	38.5
Ruvuma	75	23	73.9	153	34	70.6	157	20	90.0
Singida	244	78	71.8	164	127	63.0	15	9	66.7
Shinyanga	281	196	69.4	218	114	50.9	-	-	-
Tanga	138	71	71.8	233	157	70.1	58	41	65.9
Tabora	168	142	46.5	61	174	33.9	36	0	-
Total	**3465**	**1898**	**69.7**	**3620**	**2570**	**65.6**	**2548**	**2641**	**75.8**

7.0 Highlights of findings from recent research activities conducted in Tanzania

- High prevalence of HIV infection (19.2%, 386/2015) was found among unselected children admitted at Muhimbili Medical Centre (Kawo et al., in press).

- High incidence (19.9/1000 person years at risk) and prevalence (13.8%, 378/2733) of HIV was reported in a Dar es Salaam cohort studied for its potential suitability for possible future HIV vaccine trial (Bakari et al., 1999).

- A clinical trial of combined zidovudine and lamivudine conducted in five sites in Africa including Dar es Salaam in Tanzania; Johanesburg and Durban in South Africa; and Mulago and Nsambya in Uganda has been shown to reduce mother – to – child transmission of HIV by 50% when given to pregnant women near to or during labour and delivery and to the neonate for one week (Saba et al., 1999).

- HIV-1 subtypes circulating in Tanzania have been identified as subtypes A, C, D and recombinant strains (Lyamuya et al., 1998; Hoelscher et al., 1998; Renjifo et al., 1998).

- Analysis of data from antenatal clinic based sentinel surveillance system in Bukoba showed that the age-adjusted prevalence among antenatal clinic attendees decreased from 22.4% (95% CI, 20.6-25.2) in 1990 to 16.1% (95% CI, 15.9-18.8) in 1993 and to 13.7% (95% CI, 11.8-14.3) in 1996. These results were found to closely resemble those of the general population of adult women in the clinics' catchment area (Bukoba). It was thus concluded that the currently used sentinel surveillance of HIV-1 among antenatal clinic attendees provides age-adjusted prevalence rates which reflect the prevalence in the general population (Kwesigabo et al., 2000).

8.0 Recent Publications.

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7. Kawo G, Karlsson K, Lyamuya E, Fataki M, Kazimoto T, Kalokola F, Kitundu J, Msaky H, Munubhi C, Östborn A, Bredberg-Rådén U, Swai A, Mbise R, Msengi A, Mhalu F, Biberfeld G. Prevalence of HIV-1 infection, associated clinical features and mortality among hospitalized children in Dar es Salaam, Tanzania. Scand J Inf Dis, in press.

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