



**THE UNITED REPUBLIC OF TANZANIA**

**Tanzania Mainland**

**MINISTRY OF HEALTH**

**National AIDS Control Programme**



**HIV/AIDS/STI Surveillance Report**

**January - December 2003**

**Report Number 18**

**Issued: October 2004**



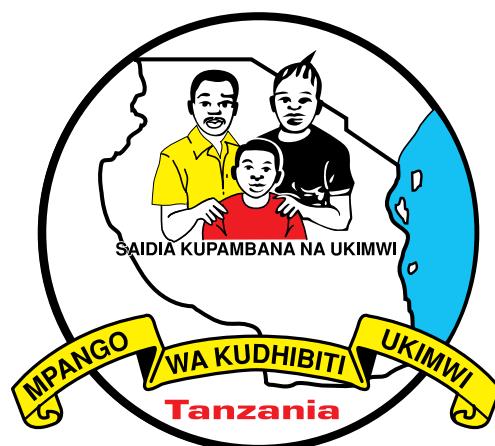


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## Abbreviations/Acronyms

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Clinics
ARV	Antiretroviral
CDC	U.S. Centers for Disease Control and Prevention
CI	Confidence Interval
DBS	Dried blood spot filter paper cards
ELISA	Enzyme Linked Immunosorbent Assay
EPTB	Extra pulmonary tuberculosis
EU	European Union
FBOs	Faith Based Organizations
GDS	Genital Discharge Syndrome
GUD	Genital Ulcer Disease
HIV	Human Immunodeficiency Virus
IDC	Infectious Diseases Clinic
MOH	Ministry of Health
MUCHS	Muhimbili University College of Health Sciences
NACP	National AIDS Control Programme
NGO	Non Government Organizations
NIMR	National Institute for Medical Research
PID	Pelvic Inflammatory Diseases
PYAR	Person-years at risk
QA	Quality Assurance
RPR	Rapid Plasma Reagins
STD	Sexually Transmitted Disease
STI	Sexually Transmitted Infection
TDHS	Tanzania Demographic and Health Survey
UN	United Nations
UNAIDS	Joint United Nations Programme on AIDS
UNDP	United Nations Development Programme
VCT	Voluntary Counseling and Testing
VDRL	Venereal Disease Research Laboratory
WHO	World Health Organisation



## Acknowledgements

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## EXECUTIVE SUMMARY

This report summarizes the magnitude and trend of HIV/AIDS/STIs in Mainland Tanzania for the annual year January to December 2003.

A total of 18,929 AIDS cases were reported to the NACP from the 21 regions during the year 2003. This resulted into a cumulative total of 176,102 reported cases since 1983 when the first 3 cases were identified in the country.

About 4% (754) of the AIDS cases reported in 2003 were below 15 years of age and most of these are likely to have acquired infection through mother to child transmission. The age group 20-49 years remained the most affected for both sexes, an observation that has remained consistent for several years since the beginning of the epidemic in the country. The observed clustering of cases in the age group 20-49 is thought to suggest that the majority of infections occur during adolescence.

As in the previous years, the predominant mode of HIV transmission has remained heterosexual constituting up to 76.8% of all reported AIDS cases during 2003. Mother to child transmission constituted 5.4% and blood transfusion 0.5%. In about 16.7% of the cases, the mode of acquisition of infection was not stated. Regarding marital status of the reported AIDS cases, there was a slight decrease in the proportions of married patients when the 2002 data was compared to that of year 2003. Of all AIDS cases reported during year 2003, 48.7% were married, while 23% were single. The marital status of the remaining cases were; divorced (5.2%), separated (1.8%), cohabiting (1%) and widowed (1%). In about 16.8% of cases, the marital status was not stated. Readers are cautioned that it is wrong to interpret the data as 48.7% of married couples in Tanzania are HIV positive.

A total of 147,377 individuals donated blood during the year 2003. All individuals were aged more than 15 years and therefore were all included in the analysis.

The majority of blood donors were males constituting 82.6% of all donors and the rest being females. As in the past year, most blood donors were relatives of patients (97.1%) and the rest were institutional and paid donors (2.4%) and (0.5%) respectively.

The overall prevalence of HIV infection among blood donors during 2003 was 8.8% (95% CI=9.7-8.9). This is a decrease of 0.9% compared to the 2002 prevalence of 9.7% ( $p<0.001$ ). This is the second year running a decrease in prevalence is noted among blood donors. A decrease was first noted in 2002. The sex specific prevalence was higher among females at 11.9% ( $N=25,610$ ) compared to that of 8.2% ( $N=121,767$ ) among males ( $p<0.001$ ).

Using estimations and projections package (EPP) and the spectrum model developed by WHO, it is estimated that, 1,810,000 people were living with HIV (840,000 males and 960,000 females) in the year 2003, in Tanzania mainland. On the basis of estimations that only 1 in 14 AIDS cases are reported, a total of 187,940 cases are likely to have occurred in year 2003 alone, females being 98,290 and males 89,650. Assuming total absence of antiretroviral (ARV) drugs, the estimated annual AIDS deaths in Tanzania mainland for the year 2003 was 186,900 (88,510 males and 98,860 females). This corresponds to different researches which observed that, from the time a person develops AIDS symptoms to his/her death, it takes about one to two years in the absence of ARV drugs.



Sexually transmitted infections (STIs) are a marker of sexual networking and give a clue to the extent of unprotected sex in a community. During the year 2003, a total of 223,388 STI episodes were reported throughout the STI clinics. Of these, 98,129 (43.9%) were genital discharge syndromes, 41,427 (18.5%) were genital ulcer diseases, 42,527 (19.0%) were pelvic inflammatory diseases, 20,694 (9.3%) were Syphilis and other syndromes constituted 20,611 (9.2%).

Regions reporting the highest number of episodes included Dodoma, Mbeya, Mara, Dar es Salaam and Tanga in decreasing order. The least number of episodes were reported from Ruvuma, Kagera, Rukwa and Singida. The number of STI episodes among females was higher (61.8%) than in males (38.2%). The most affected age groups in both sexes were those of 20-29 years, followed by the age group 30 years and above.

During 2003, VCT services continued to be provided throughout the country.

A total of 139,972 clients consented for HIV testing in 2003. The increase in the number of clients who tested in 2003 was quite remarkable compared to the trend in the past. This increase may be attributed to improved access to VCT services following opening of many VCT sites in different areas in the country during this year. It may also be a reflection of the growing awareness of the importance of VCT.

The overall HIV prevalence using data from VCT in health facility based sites was 23.6% while it was 10.6% using data from the 34 ANGAZA sites, which are distributed in some areas of the country. The prevalence of HIV infection in the health facility based sites ranged from 7.8% in Kilimanjaro to 38.1% in Lindi region. Putting together the hospital-based sites with the ANGAZA sites, the overall HIV prevalence was 18.4%. This prevalence is difficult to interpret since there may be many selection factors among clients accessing different VCT services.

In conclusion, the spread of HIV infection continued as in previous years. Data obtained from various surveys indicate high risk of HIV infection among youth and higher vulnerability to infection among women.



## 1.0 SURVEILLANCE OF AIDS CASES

### Introduction

AIDS became a notifiable disease in Tanzania since 1985. Health authorities throughout the country were therefore obliged to report AIDS cases to the Ministry of Health (MoH). In the early phase of the epidemic, surveillance of AIDS cases was the only type of data collected in the country to track the spread of the epidemic. Initially notification of AIDS cases was done using multiple approaches including special forms, telephone, and telex and telefax communication with MoH. This mixed system of reporting resulted into sets of data that lacked uniformity in terms of the parameters reported. This was later resolved by the introduction of a notification form that was adopted for use in all health care facilities in the country.

### Methods

AIDS cases diagnosed in governmental and non governmental hospitals in the country are reported to the National AIDS Control Programme (NACP), using forms distributed to all hospitals through the Regional Medical Officers (RMO). Information collected include name of reporting hospital, socio-demographic characteristics of the diagnosed case including district of usual residence, case definition criteria used to make the diagnosis, possible source of infection and whether or not an HIV test was done. Hospitals return duly-filled forms to the Regional Medical Officer (RMO) monthly, for subsequent transmission to the NACP on a quarterly basis.

### Distribution of AIDS cases

Between 1<sup>st</sup> January and 31<sup>st</sup> December 2003, a total of 18,929 cases were reported to the NACP from the 21 regions of Tanzania Mainland. This resulted into a cumulative total of 176,102 cases since 1983 when the first three AIDS cases were diagnosed in Tanzania. Table 1.1 and Figure 1.1 show the age and sex distribution of the reported AIDS cases for the year 2003. About 754 (4%) of the AIDS cases reported in 2003 were below 15 years of age and most of these are likely to have acquired infection through mother to child transmission. The age group 20-49 years remained the most affected for both sexes, an observation that has remained consistent for several years since the beginning of the epidemic. The observed clustering of cases in the age group 20-49 years is thought to suggest that the majority of infections occur during adolescence. It is evident that there were more female AIDS cases than males in the age group 20-39. The preponderance of female cases was particularly striking for age groups 20-24 and 25-29 where female cases were almost twice as many as for males.

Theoretically, voluntary counseling and testing coupled with the use of antiretroviral (ARV) drugs would be expected to alter the observed pattern of AIDS cases in the country. It would therefore be of interest to see the impact of the current care and ARV treatment initiatives on the pattern and trend of AIDS cases.

Figure 1.2 shows the age and sex specific cumulative case rates from 1987-2003. The figure, as in the previous year, shows that males generally have a higher case rate than females particularly for the age group 30 years and above. High case rates for both sexes are in the age group 25-44 years.



Table 1.1: Distribution of reported AIDS cases by age and sex, Tanzania 2003

Age group	Male		Female		Unknown		Total	
	N	%	N	%	N	%	N	%
0 - 4	171	4.1	178	3.2	43	0.5	392	2.1
5 - 9	118	2.8	84	1.5	31	0.4	233	1.2
10 - 14	55	1.3	62	1.1	12	0.1	129	0.7
15 - 19	98	2.4	187	3.4	14	0.2	299	1.6
20 - 24	248	6	675	12.2	49	0.6	972	5.1
25 - 29	545	13.1	1,096	19.8	96	1.2	1,737	9.2
30 - 34	812	19.5	1,218	22.1	120	1.5	2,150	11.4
35 - 39	670	16.1	821	14.9	101	1.2	1,592	8.4
40 - 44	573	13.8	554	10	90	1.1	1,217	6.4
45 - 49	353	8.5	281	5.1	44	0.5	678	3.6
50 - 54	216	5.2	160	2.9	34	0.4	410	2.2
55 - 59	110	2.6	76	1.4	10	0.1	196	1.0
60 - 64	83	2	61	1.1	6	0.1	150	0.8
65+	78	1.9	35	0.6	7	0.1	120	0.6
Unknown	26	0.6	35	0.6	8593	92	8654	45.7
Total	4,156	100	5,523	100	9,250	100	18,929	100

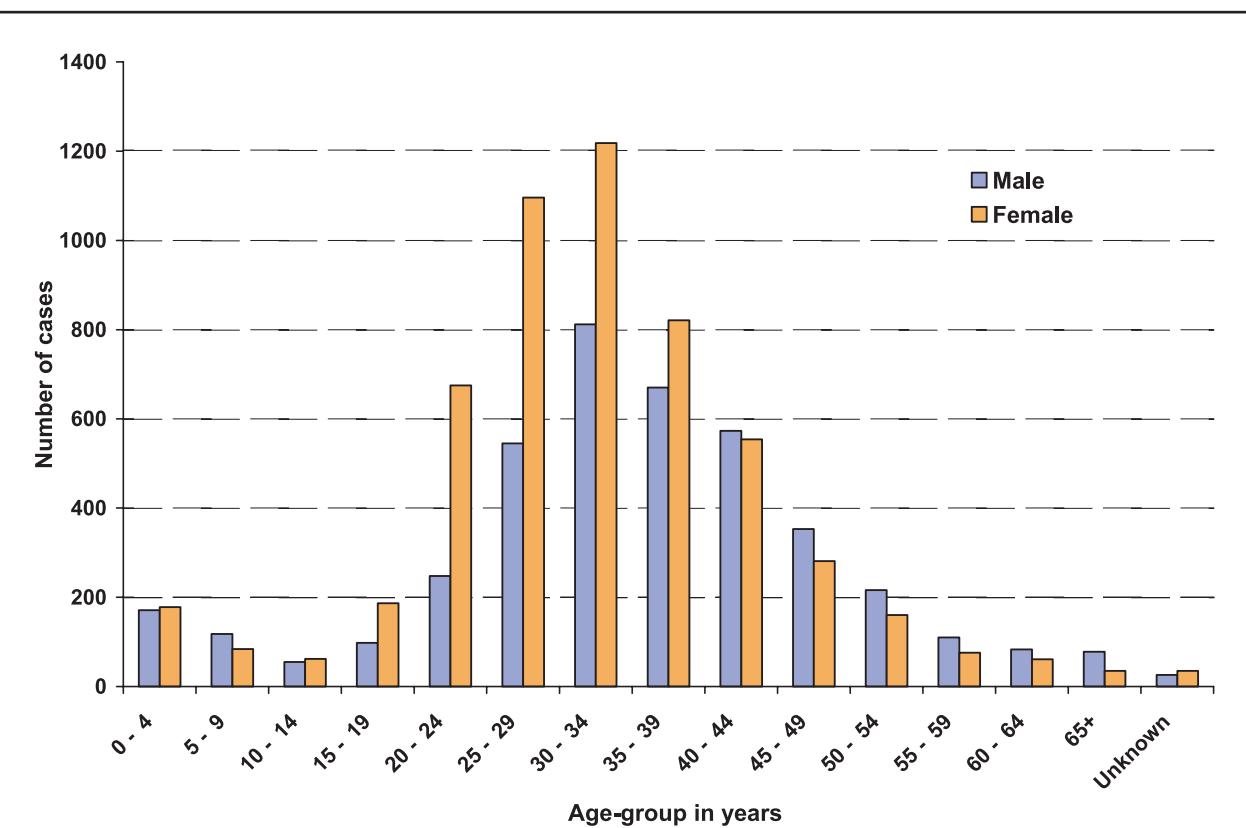


Fig 1.1: Age and sex specific distribution of reported AIDS cases, Tanzania January- December 2003

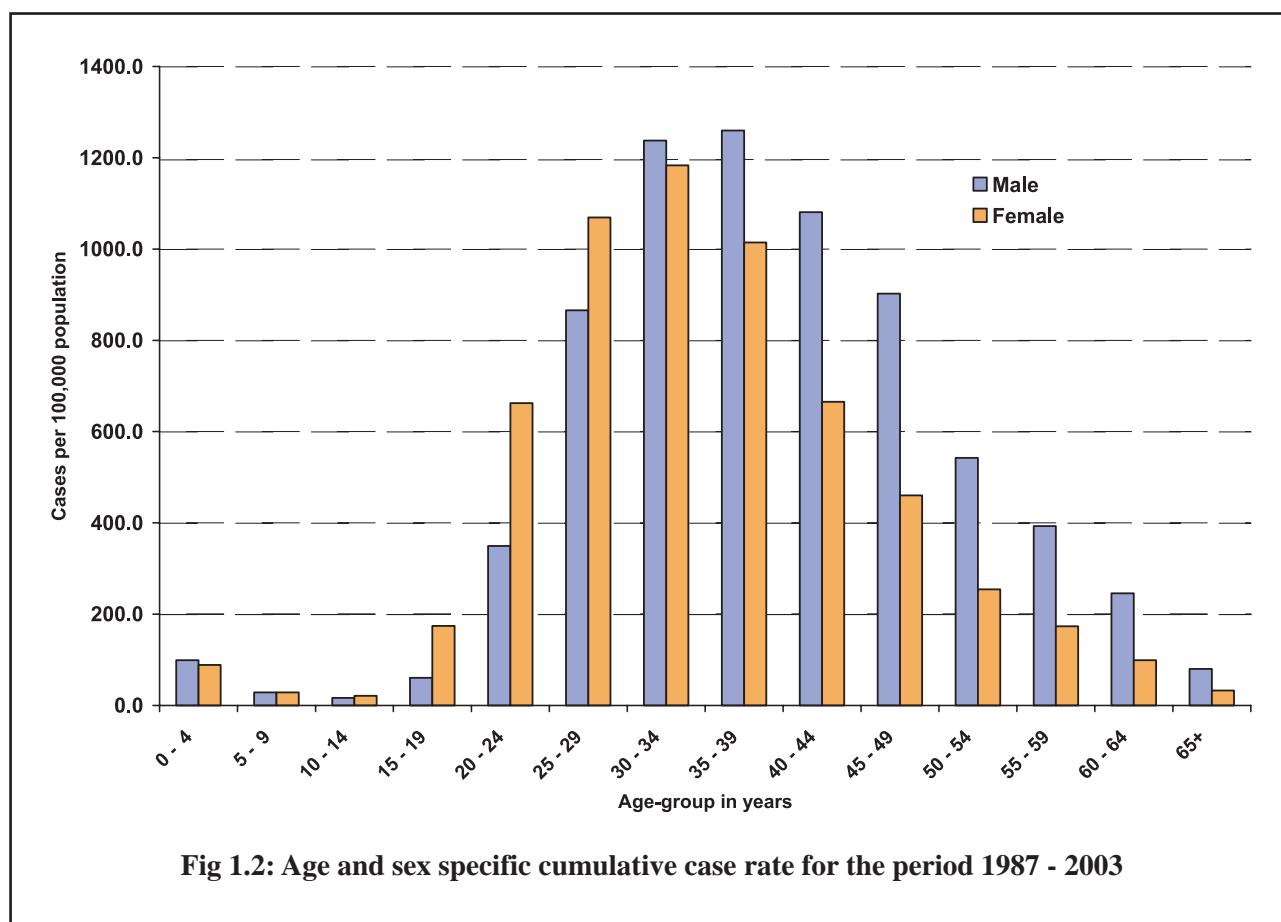


Fig 1.2: Age and sex specific cumulative case rate for the period 1987 - 2003



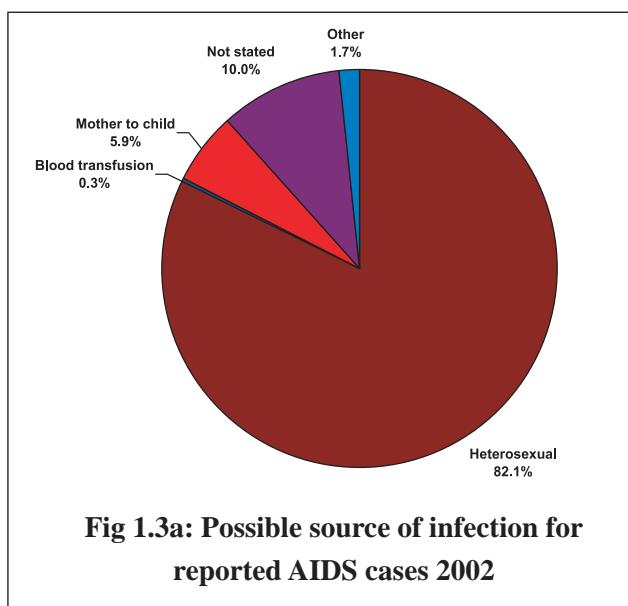
Table 1.2: Age and sex specific case rate of cumulative AIDS cases, Tanzania 1987-2003

Age	MALE			FEMALE			TOTAL		
	Cases	%	Population	Case rate*	Cases	%	Population year 2003	Case rate	Population year 2003
0 - 4	2,809	4.3	2,832,886	99.2	2,514	3.6	2,837,999	88.6	115
5 - 9	741	1.1	2,572,790	28.8	734	1.1	2,554,935	28.7	69
10 - 14	372	0.6	2,228,621	16.7	460	0.7	2,205,799	20.9	15
15 - 19	1,065	1.6	1,759,602	60.5	3,186	4.6	1,830,818	174	29
20 - 24	4,893	7.5	1,399,702	349.6	11,574	16.7	1,747,362	662.4	94
25 - 29	11,335	17.4	1,309,018	865.9	15,952	23.1	1,491,777	1,069.30	170
30 - 34	13,473	20.7	1,088,566	1,237.70	13,487	19.5	1,139,713	1,183.40	199
35 - 39	10,361	15.9	822,482	1,259.70	8,541	12.4	842,022	1,014.30	158
40 - 44	7,225	11.1	668,480	1,080.80	4,509	6.5	677,466	665.6	122
45 - 49	4,310	6.6	477,556	902.5	2,332	3.4	506,861	460.1	73
50 - 54	2,324	3.6	428,286	542.6	1,158	1.7	455,239	254.4	44
55 - 59	1,142	1.8	290,436	393.2	524	0.8	301,929	173.6	16
60 - 64	707	1.1	287,582	245.8	316	0.5	318,157	99.3	12
65+	525	0.8	657,130	79.9	227	0.3	699,027	32.5	12
Unknown	3,717	5.7		3,598	5.2				
Total	64,999	100	16,823,136	386.4	69,112	100	17,609, 106	392.5	17,086
									151,197
									100
									34,432,243
									436.1

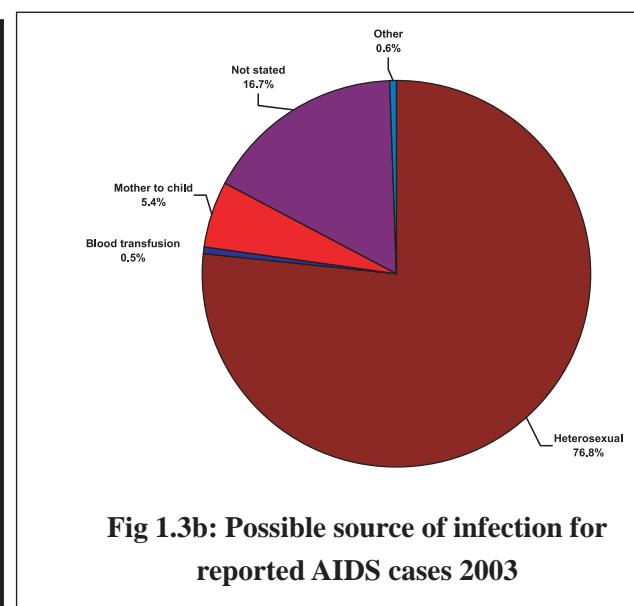
Case rate =cases/100,000 population



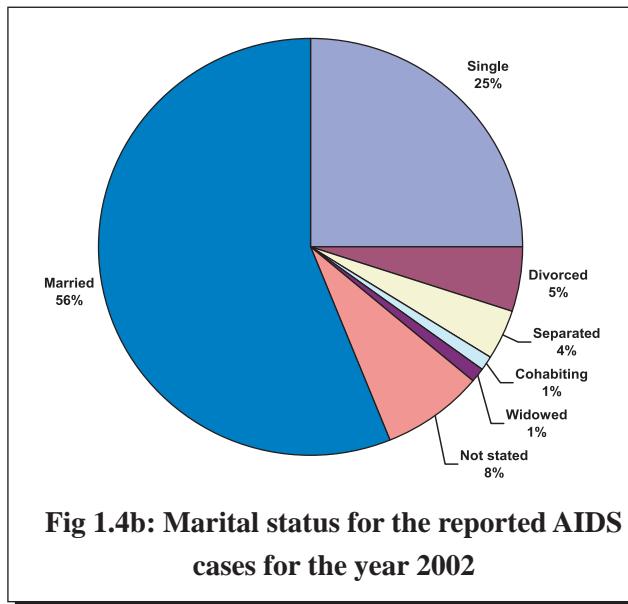
Marital status and possible sources of infection for the reported AIDS cases during the year 2003 were analysed. These findings are presented in fig 1.3b and 1.4b. As for previous years, the predominant mode of HIV transmission has remained heterosexual constituting up to 76.8% of all infections during 2003. Mother to child transmission constituted 5.4% and blood transfusion 0.5%. In about 16.7% of the cases, the mode of acquisition of infection was not stated. Figures 1.3a and 1.3b illustrate these findings. Regarding marital status of the reported AIDS cases, there was a slight decrease in the proportions of married patients when the 2002 data was compared to that of the year 2003, see figures 1.4a and 1.4b for further details. From figures 1.4a and 1.4b, 56% and 48.7% of reported AIDS cases were married in the year 2002 and 2003 respectively. This should however not be interpreted as that 56% or 48.7% of married couples in Tanzania are HIV positive.



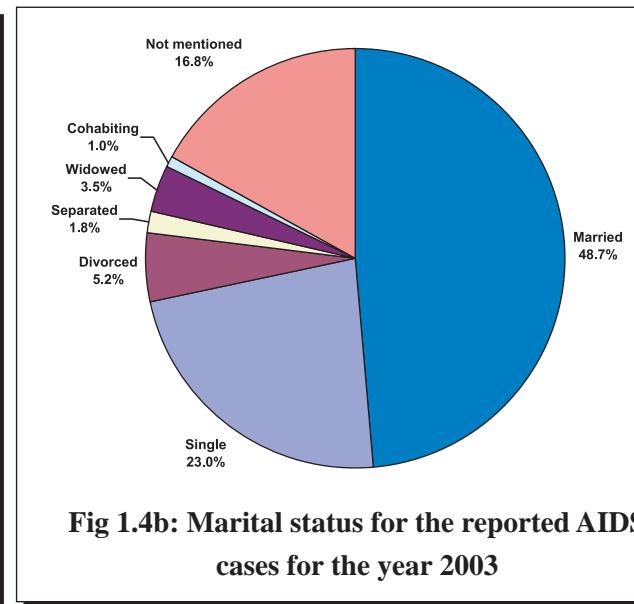
**Fig 1.3a: Possible source of infection for reported AIDS cases 2002**



**Fig 1.3b: Possible source of infection for reported AIDS cases 2003**



**Fig 1.4a: Marital status for the reported AIDS cases for the year 2002**



**Fig 1.4b: Marital status for the reported AIDS cases for the year 2003**



Tables 1.3a, 1.3b and 1.3c show the cumulative number of AIDS cases and case rate by region since the detection of the early cases in Tanzania two decades ago (1983-2003). The total population by region for the year 2003 has been projected using regional specific growth rates<sup>1</sup>. The distribution of AIDS cases by region is based on where the diagnosis was made and does not necessarily reflect the place of usual residence of the diagnosed case. The NACP estimates that only 1 out of 14 AIDS cases are reported due to underutilization of health services, under-diagnosis, under-reporting and delays in reporting. Despite these limitations, the data is believed to reflect the trend of AIDS cases in the country. The number of AIDS cases reported in 2003 was higher than that reported in any of the previous years. This is largely due to the close follow up that was mounted by NACP which entailed physical visits to a number of regions and frequent communication with regional and district medical officers.

It is worth noting that there is no uniformity in the rate of reporting of cases among regions, thus the case rates do not necessarily reflect the burden of disease in the respective regions. For example, according to the 2003 data, the region with the highest case rate was Kagera followed by Kilimanjaro and Arusha which differs from the pattern reported for 2002 whereby the three leading regions in descending order were Dar es Salaam, Kilimanjaro and Ruvuma; and that seen in 2001 where the rates were highest in Mbeya, Dar es Salaam and Ruvuma in descending order.

<sup>1</sup> National Bureau of Statistics, 2002 Population Census



Table 1.3(a): Cumulative reported AIDS cases by region, Tanzania mainland 1983 - 1992.

Region	YEARS						
	1983	1984	1985	1986	1987	1988	1989
Anusha	0	0	0	10	47	217	433
Coast	0	0	1	4	79	224	465
Dar es Salaam	0	0	51	471	1,470	3,093	5,209
Dodoma	0	0	0	7	47	105	262
Iringa	0	0	1	3	68	305	374
Kagera	3	106	322	847	1,666	2,143	2,576
Kigoma	0	0	0	3	50	109	244
Kilimanjaro	0	1	8	36	207	455	571
Lindi	0	0	0	1	10	46	113
Mara	0	0	0	3	30	99	141
Mbeya	0	0	0	16	208	751	1,077
Morogoro	0	0	0	11	88	254	364
MtWARA	0	0	1	5	26	90	199
Mwanza	0	0	15	54	171	448	667
Rukwa	0	0	0	1	5	98	94
Ruvuma	0	0	0	20	46	81	210
Shinyanga	0	0	0	8	31	144	238
Singida	0	0	0	6	74	197	284
Tabora	0	2	5	6	59	232	525
Tanga	0	0	0	13	80	210	210
Unspecified	-	-	-	-	-	-	-
<b>TANZANIA</b>	<b>3</b>	<b>109</b>	<b>404</b>	<b>1,525</b>	<b>4,462</b>	<b>9,301</b>	<b>14,256</b>
							<b>25,503</b>
							<b>44,195</b>
							<b>59,352</b>



Table 1.3(b): Cumulative reported AIDS cases by region, Tanzania mainland 1993 - 2003.

Region	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	
	YEARS	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Arusha	2,185	2,368	2,615	2,787	3,244	3,567	3,948	4,196	4,688	4,785	4,785	6,476
Coast	2,740	3,023	3,268	3,559	3,796	4,266	4,375	5,348	5,580	5,737	5,737	5,884
Dar es Salaam	10,406	11,050	11,302	12,983	13,899	14,517	14,643	16,053	18,627	24,501	24,501	26,818
Dodoma	1,028	1,294	1,608	1,938	2,517	2,641	2,748	2,941	3,170	3,565	3,565	4,306
Iringa	4,462	4,674	4,785	4,883	5,008	5,031	5,076	5,179	5,298	5,318	5,318	6,079
Kagera	6,646	7,064	7,223	7,426	7,671	7,881	8,310	8,529	8,976	9,072	9,072	12,034
Kigoma	1,920	2,070	2,257	2,280	2,426	2,481	2,613	2,732	2,815	2,860	2,860	4,040
Kilimanjaro	4,699	5,119	5,513	5,991	6,618	7,375	7,766	8,088	9,097	10,042	10,042	11,909
Lindi	1,691	1,966	2,173	2,480	2,712	3,074	3,559	4,155	4,710	5,008	5,008	5,267
Mara	1,304	1,393	1,486	1,486	1,486	1,515	1,634	2,021	2,229	2,345	2,345	2,920
Mbeya	11,439	12,214	12,371	14,685	16,835	19,949	23,688	26,952	30,320	31,172	31,172	32,705
Morogoro	4,328	4,575	4,903	5,189	5,438	5,534	5,863	6,388	6,820	7,073	7,073	7,467
Mtwara	2,090	2,201	2,267	2,444	2,569	2,843	3,000	3,262	3,638	3,886	3,886	4,130
Mwanza	5,349	5,731	5,974	6,365	7,006	7,384	7,884	8,338	8,752	9,194	9,194	9,676
Rukwa	715	777	801	882	1,227	1,359	1,621	1,997	2,382	2,706	2,706	3,246
Ruvuma	2,480	2,847	3,087	3,345	3,752	4,260	4,760	5,406	6,381	7,080	7,080	7,743
Shinyanga	2,624	3,062	3,361	3,824	4,217	4,515	4,861	5,440	6,310	7,174	7,174	7,972
Singida	1,472	1,688	1,908	2,135	2,167	2,262	2,329	2,396	2,692	2,872	2,872	3,040
Tabora	2,786	3,075	3,428	3,805	4,278	4,733	5,199	5,946	6,349	6,810	6,810	7,323
Tanga	3,207	3,475	3,793	4,062	4,278	4,632	4,792	4,975	5,620	5,819	5,819	6,711
Manyara	Unspecified	1	2	44	44	44	44	44	44	44	44	44
<b>TOTAL</b>	<b>73,572</b>	<b>79,668</b>	<b>84,167</b>	<b>92,593</b>	<b>101,188</b>	<b>109,863</b>	<b>118,713</b>	<b>130,386</b>	<b>144,498</b>	<b>157,173</b>	<b>176,102</b>	



Table 1.3(c): AIDS case rates by region, Tanzania mainland 1999 - 2003.

REGION	Cases for 1999	Case rate for 1999	Cases for 2000	Case rate for 2000	Cases for 2001	Case rate for 2001	Cases for 2002	Case rate for 2002	Cases for 2003	Case rate for 2003	Population year 2003
Arusha Coast	381	19.4	248	12.2	492	23.6	97	7.5	1691	125.8	1,344,692
Dar es Salaam	109	13.6	973	117.4	232	27.2	157	17.7	147	16.1	910,494
Dodoma	126	5.8	1,410	63.1	2,574	112.1	5874	235.2	2317	88.9	2,605,351
Iringa	107	6.7	193	11.7	229	13.5	395	23.3	741	42.6	1,738,073
Kagera	45	2.8	103	6.2	119	7	20	1.3	761	50.1	1,517,763
Kigoma	429	23.7	219	11.7	447	23.3	96	4.7	2962	141.3	2,096,939
Kilimanjaro	132	11.5	119	10.1	83	6.8	45	2.7	1180	67.1	1,759,706
Lindi	391	20.4	322	16.3	1,009	49.7	945	68.4	1867	133	1,403,247
Mara	485	60.1	596	71.6	555	64.9	298	37.7	259	32.3	802,384
Mbeya	119	9	387	28.6	208	14.9	116	8.5	575	41	1,402,817
Morogoro	3,739	183.7	3264	155.6	3,368	156.1	852	41.2	1533	72.3	2,119,727
MtWARA	329	19.9	525	30.7	432	24.6	253	14.8	394	21.8	1,805,564
Mwanza	157	14.9	262	24.1	376	33.7	248	21.9	244	21.3	1,147,708
Rukwa	500	20.2	454	17.8	414	15.8	442	15.0	482	15.9	3,036,297
Ruvuma	262	24.8	376	34.5	385	34.3	324	28.4	540	45.7	1,182,846
Shinyanga	500	45.5	646	57	975	83.7	699	62.6	663	57.9	1,145,095
Singida	346	14.4	579	23.4	870	34.2	864	30.8	798	27.5	2,898,164
Tabora	67	6.5	67	6.3	296	27	180	16.5	168	15.1	1,115,845
Tanga	466	34.7	747	54	403	28.3	461	26.8	513	28.8	1,779,753
Manyara	160	9.7	183	10.7	645	36.9	199	12.1	892	53.4	1,671,571
<b>TOTAL</b>	<b>8,850</b>	<b>28.6</b>	<b>13,673</b>	<b>36.6</b>	<b>16,113</b>	<b>43</b>	<b>12,675</b>	<b>37.9</b>	<b>18929</b>	<b>54.8</b>	<b>34,564,035</b>

Case rate = AIDS cases per 100,000 population



## 2.0 SURVEILLANCE OF HIV INFECTION AMONG BLOOD DONORS

### Introduction

Persons donating blood in health care facilities constitute the surveillance population of blood donors. After donation or before blood is given to patients, screening for HIV infection is done in order to ensure provision of safe blood. HIV screening of the potential transfusion blood has been in place since 1987. This service which was originally limited to regional and referral hospitals was later extended to cover all health care facilities providing blood transfusion services so as to ensure provision of safe blood.

### Methods

During 2003, information was collected from a total of 160 health care facilities distributed throughout the 21 Tanzania mainland regions. Screening for HIV infection is done by using either simple/rapid tests in almost all health care facilities except a few regional, referral and some missionary hospitals where ELISA testing strategy is used. Test results and blood donor demographic information (age, sex, residence and type of donor) are filled in the blood donor HIV register forms made available to the health care facilities from the NACP through the RMOs. Duly filled forms are then returned to the NACP for data entry, analysis and reporting.

### Characteristics of blood donors

A total of 147,377 individuals donated blood during the year 2003, all individuals were aged more than 15 years and therefore were all included in the analysis. The majority of donors were males constituting up to 82.6 percent of all donors the rest being females. As in the past year, most (97.1%) blood donors were relatives of patients, the rest being institutional and paid donors at 2.4 and 0.5 percent respectively. Almost all institutional donors were from secondary schools and a few from colleges.

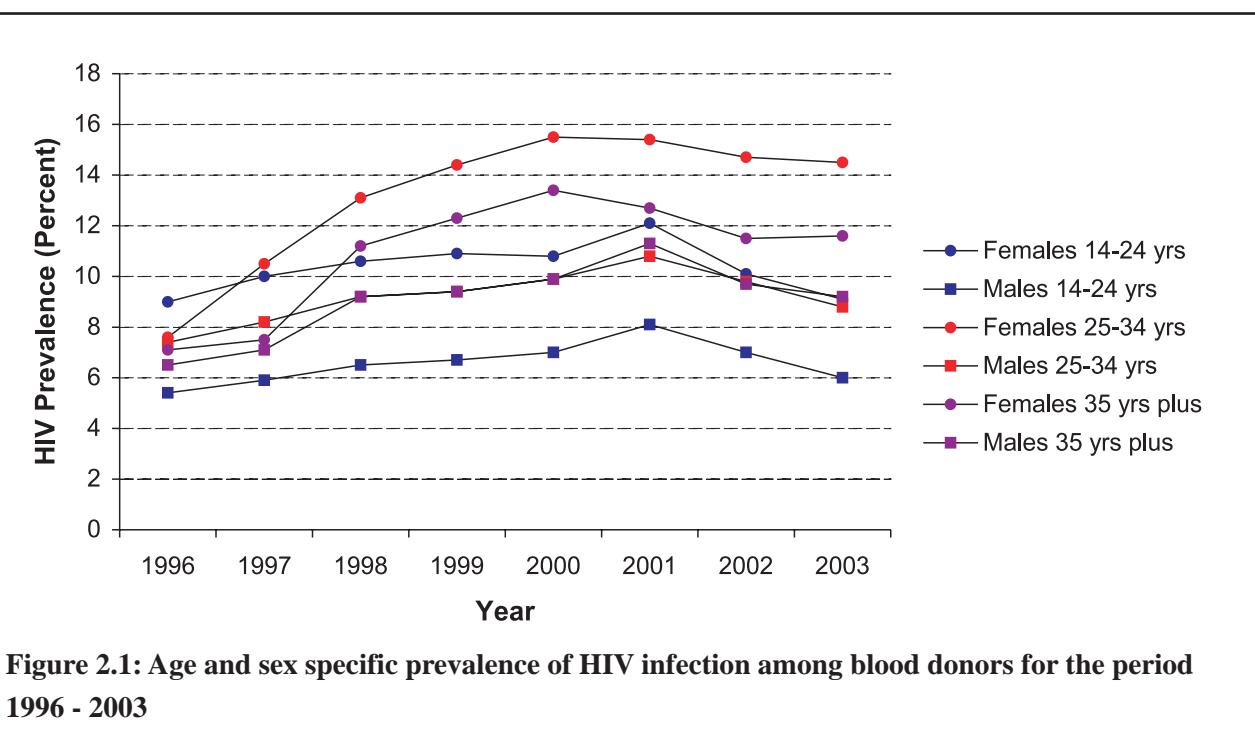
### Trends of HIV infection among blood donors

A total of 13,036 individuals were found to be HIV positive resulting into an overall prevalence of 8.8% (95% CI = 9.7-8.9). This is a decrease of 0.9% compared to the 2002 estimate of 9.7% ( $p<0.001$ ). This is the second year running since 2002; a decrease in prevalence is noted among blood donors. The decrease in prevalence may explain the decrease in epidemic, however more studies need to be done to explain this decrease. The sex specific prevalence as in the previous year was higher among females at 11.9% (N=25,610) compared to that of 8.2% (N=121,767) among males ( $p<0.001$ ).

Comparing the 2003 sex specific prevalence estimates, with those of 2002, (males 8.2 versus 9.1%) and 11.9 versus 12.3% for females respectively), a marked decrease was among males (0.9 percent) compared to females where the decrease was 0.4 percent.

### Age and sex specific HIV infection trends

The following line graph illustrates changes in the age and sex specific prevalence trends among the blood donor population for the years 1996 to 2003.



**Figure 2.1: Age and sex specific prevalence of HIV infection among blood donors for the period 1996 - 2003**

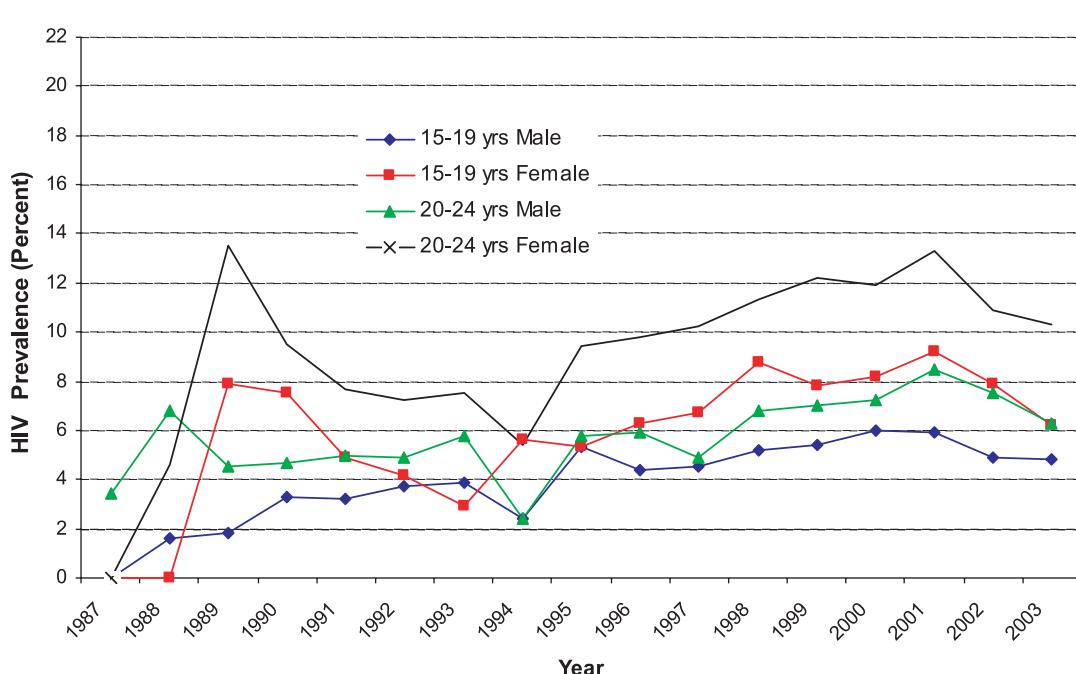
Generally, all age groups in both sex (except females aged 25 years and above) continued to exhibit a downward trend in HIV infection, an observation which was initially noted in the year 2002. The age specific prevalence among females continued to be higher when compared to males (See Figure 2.1 above). Since prevalence in the 14-24 years age-group may approximate new infections, continued reduction in this age group for both sexes may indicate falling rate of new infections.

The following figures 2.2-2.5 show the age and sex specific prevalence trends of HIV infection among blood donors for a 16 years period since 1987 to 2003. Data is presented in five year age-groups covering the age range of 15 to 54 years. For ease of presentation, each figure displays information covering a 10 year interval using a common scale to facilitate comparisons.

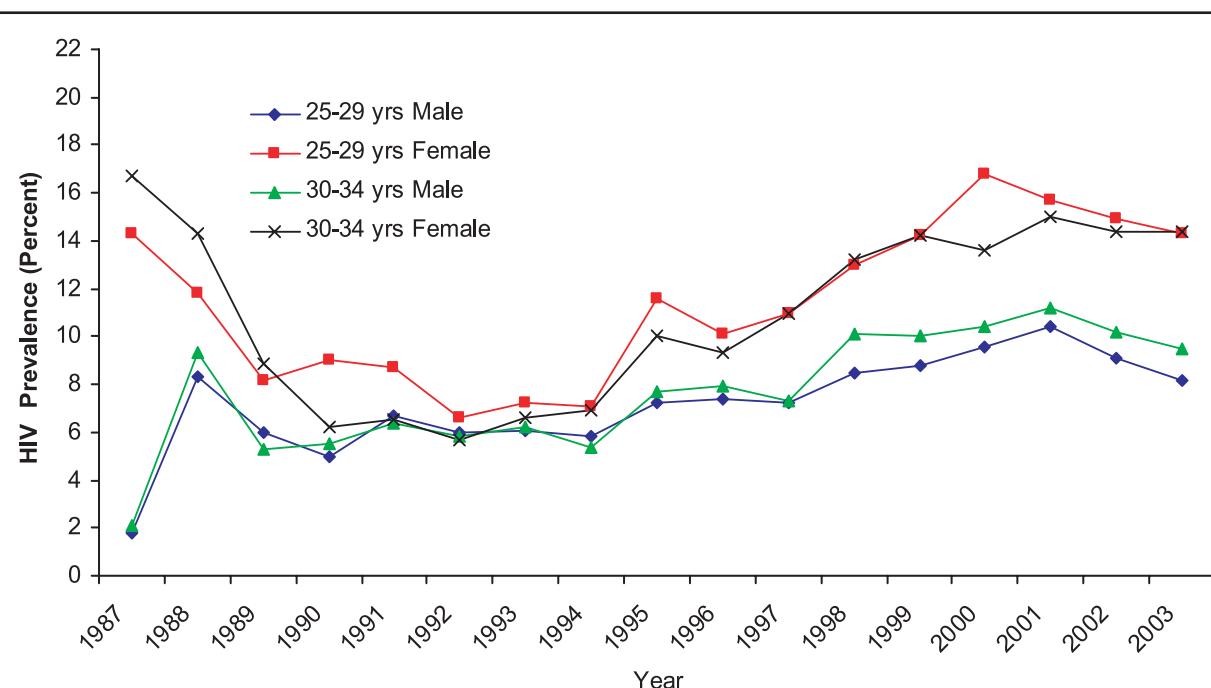
Looking back over a 16 year period, a general gradual rise in the prevalence of HIV infection is noted as age increases especially after the year 1994. However this gradual rise seems to start descending from 2002 for most age-groups as earlier noted.

Prior to 1994, the epidemic trend seems undefined. This may be due to several reasons including changes in HIV testing strategies among blood donors, inaccurate and incomplete reporting system and inconsistencies in data handling at various levels.

The general downward trend of the epidemic noted among blood donors needs to be confirmed through proper epidemiological studies which should also shed light on the possible reasons of the observed trends.



**Fig 2.2 Age and sex specific prevalence of HIV infection among blood donors aged 15-24 years, 1987-2003**



**Fig 2.3 Age and sex specific prevalence of HIV infection among blood donors aged 25-34 years, 1987-2003**

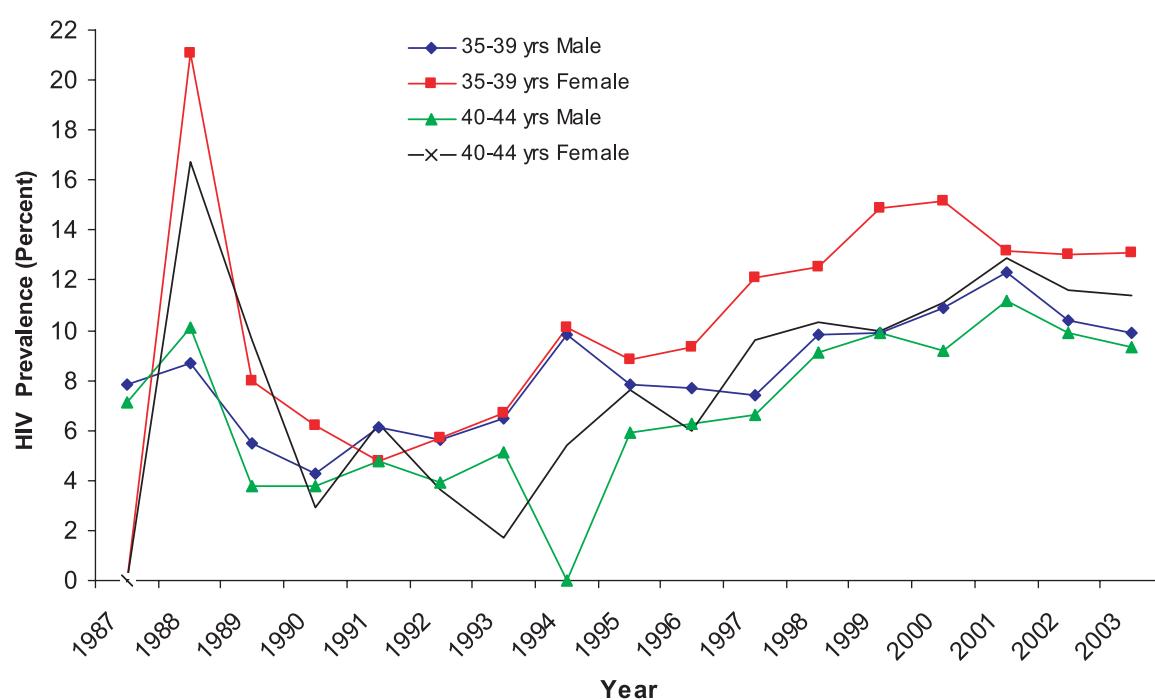


Fig 2.4 Age and sex specific prevalence of HIV infection among blood donors aged 35-44 years, 1987-2003

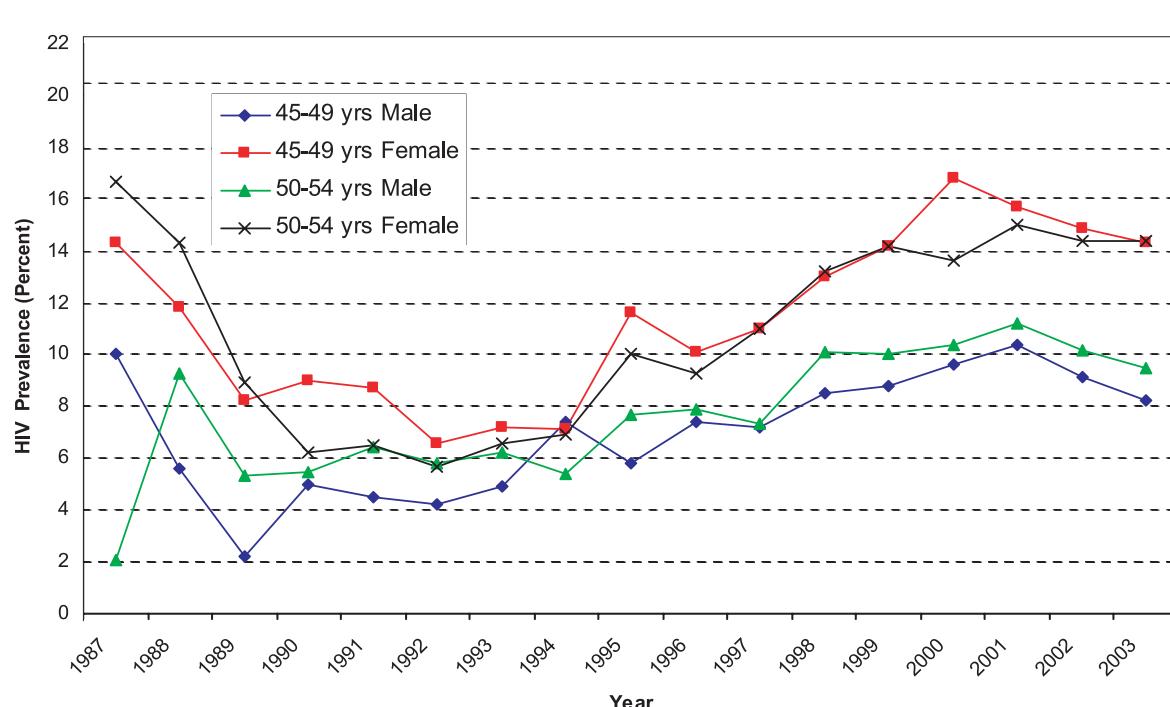
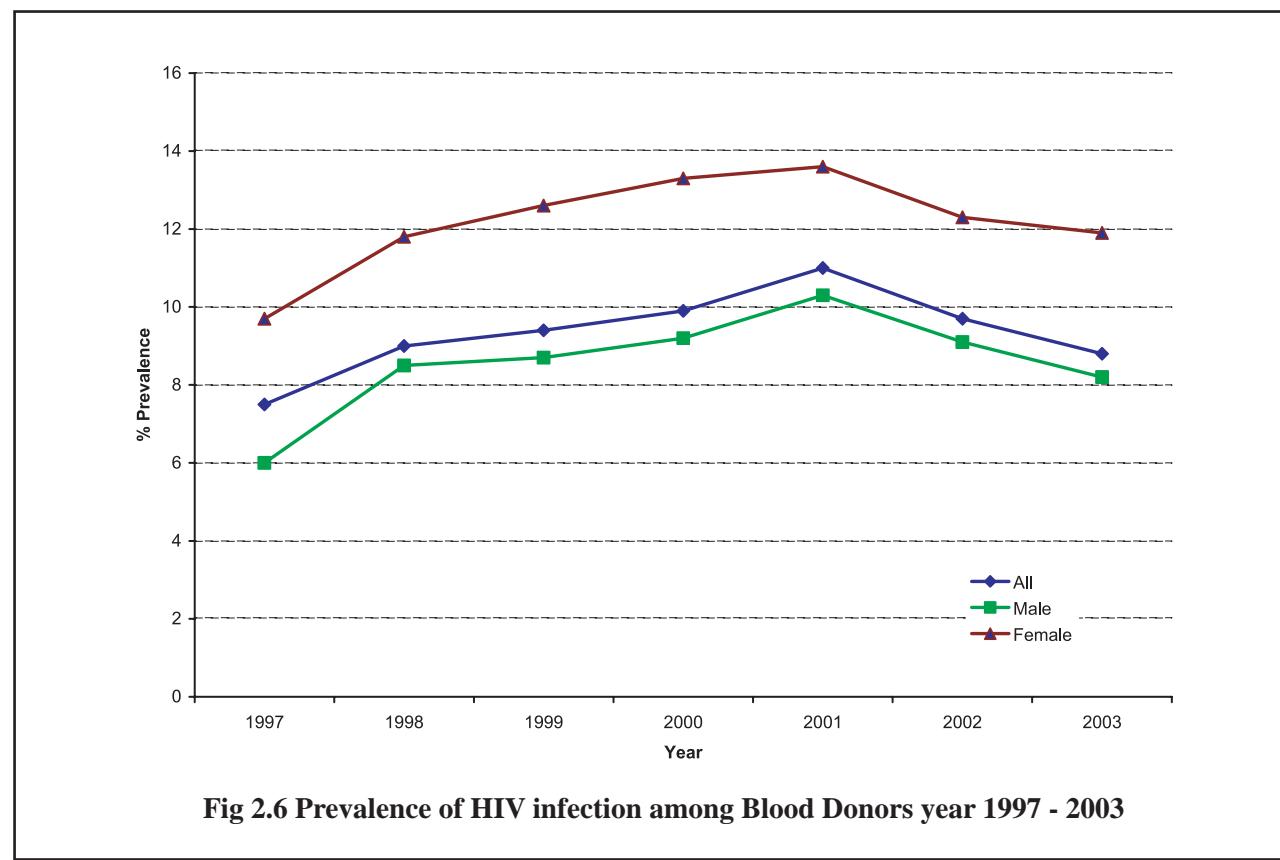


Fig 2.5 Age and sex specific prevalence of HIV infection among blood donors aged 45-54 years, 1987-2003



**Fig 2.6 Prevalence of HIV infection among Blood Donors year 1997 - 2003**

To keep track of the exact age and sex specific prevalence figures, the following tables (2.1 and 2.2 are added in this report. Similar information however may better be interpreted in the preceding graphs.

**Table 2.1 Age-specific prevalence (%) of HIV infection among male blood donors. Tanzania, 1991 - 2003**

Age	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
15 - 19	3.2	3.7	3.9	2.4	5.3	4.4	4.5	5.2	5.4	6.0	5.9	4.9	4.8
20 - 24	5.0	4.9	5.8	2.4	5.8	5.9	4.9	6.8	7.0	7.2	8.5	7.5	6.3
25 - 29	6.7	6.0	6.1	5.8	7.2	7.4	7.2	8.5	8.8	9.6	10.4	9.1	8.2
30 - 34	6.4	5.8	6.2	5.4	7.7	7.9	7.3	10.1	10.0	10.4	11.2	10.5	9.5
35 - 39	6.1	5.6	6.5	9.8	7.8	7.7	7.4	9.8	9.9	10.9	12.3	10.4	9.9
40 - 44	4.8	3.9	5.1	0.0	5.9	6.3	6.6	9.1	9.9	9.2	11.2	9.9	9.3
45 - 49	4.5	4.2	4.9	7.4	5.8	5.7	5.8	8.4	8.5	9.3	10.6	9.2	8.6
50 - 54	4.4	2.6	4.3	0.0	3.5	5.6	4.8	7.1	7.7	9.1	9.3	7.9	7.2
55+	4.0	2.3	5.2	12.5	2.5	4.4	5.9	8.2	5.5	6.8	7.6	6.3	6.7
<b>Total</b>	<b>5.8</b>	<b>5.3</b>	<b>5.9</b>	<b>4.8</b>	<b>6.7</b>	<b>6.9</b>	<b>6.0</b>	<b>8.5</b>	<b>8.7</b>	<b>9.2</b>	<b>10.3</b>	<b>9.1</b>	<b>8.2</b>

**Table 2.2 Age-specific prevalence (%) of HIV infection among female blood Donors, Tanzania 1991 - 2003**

<i>Age</i>	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
15 - 19	4.9	4.2	2.9	5.6	5.3	6.3	6.7	8.8	7.8	8.2	9.2	7.9	6.2
20 - 24	7.7	7.2	7.5	5.4	9.4	9.8	10.2	11.3	12.2	11.9	13.3	10.9	10.3
25 - 29	8.7	6.6	7.2	7.1	11.6	10.1	11.0	13	14.5	16.8	15.7	14.9	14.3
30 - 34	6.5	5.7	6.6	6.9	10.0	9.3	11.0	13.2	14.2	13.6	15.0	14.4	14.4
35 - 39	4.8	5.7	6.7	10.1	8.8	9.3	12.1	12.5	14.9	15.2	13.2	13.0	13.1
40 - 44	6.3	3.6	1.7	5.4	7.6	6.0	9.6	10.3	10.0	11.1	12.9	11.6	11.4
45 - 49	3.4	4.4	3.7	7.5	4.8	5.5	8.2	9.8	10.2	13.6	12.0	9.7	9.0
50 - 54	5.6	5.4	5.9	6.2	*6.3	5.6	11.2	8.8	7.0	9.5	11.3	6.9	10.3
55+	6.7	4.2	5.3	3.3	*16.7	7.1	7.6	7.8	8.8	9.7	10.3	5.2	9.1
<b>Total</b>	<b>7.2</b>	<b>5.9</b>	<b>6.3</b>	<b>6.9</b>	<b>9.2</b>	<b>8.7</b>	<b>9.7</b>	<b>11.8</b>	<b>12.6</b>	<b>13.3</b>	<b>13.6</b>	<b>12.3</b>	<b>11.9</b>

***HIV infection trends by regions and districts***

To enable geographical assessment of the trend of the epidemic, as in the previous reports, data has been analysed by region and district. Tables 2.3 -2.5 show findings from the analysis. The same information has been depicted graphically at region level in the following set of graphs (Figure 2.7 -2.11). The graphs bear the same scale for ease of comparison.

The regions with the highest prevalence were: Kagera (20.7%), Iringa (15.4%), Mbeya (14.5%) and Rukwa at 17.9%. Despite a general decrease in prevalence noted earlier for all blood donors combined, in these regions there was an increase in the prevalence of infection when the 2002 data are compared with the 2003 data.

The districts with the highest prevalence of HIV infection include: Muleba (29.3%), Chunya (26.5%), Karagwe (24.8%), Ngara (19.2%) and Babati (18.6%). Details as to whether there has been an increase or a decrease in HIV infection prevalence in these districts compared to the previous years; refer to Table 2.3 that follows.



Table 2.3: Prevalence of HIV infection among blood donors by region and district, Tanzania 1999-2003

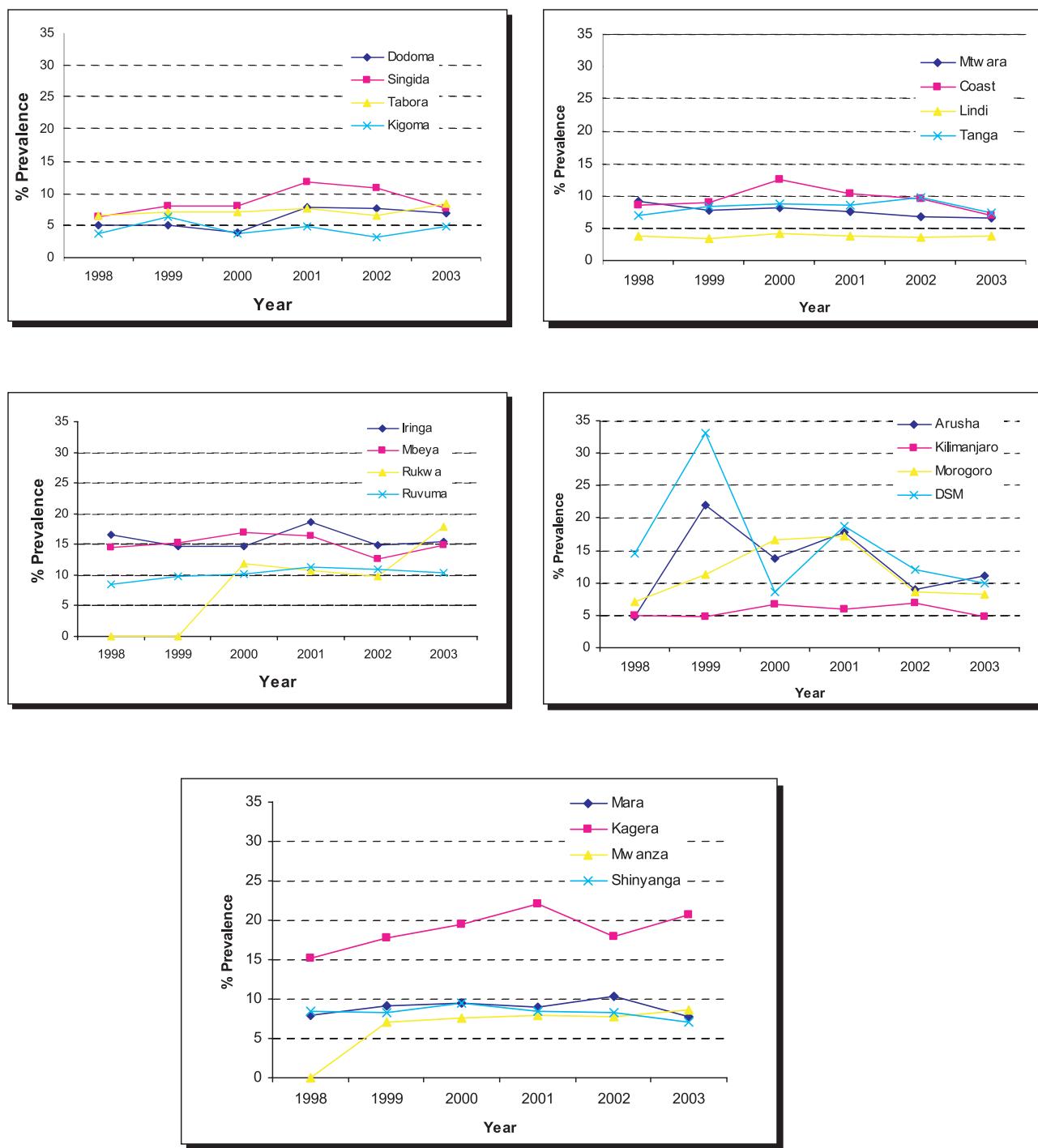
Region		Year 1999		Year 2000		Year 2001		Year 2002		Year 2003	
	District	Total donors	% prev								
Arusha		3,030	22	7,223	13.8	6,827	17.8	-	-	2,095	11.1
	Arumeru	-	-	-	-	72	-	-	-	-	-
	Arusha municipality	-	-	1,372	9.1	1,825	11.2	1,456	8.9	1,608	12.7
	Karatu	-	-	-	-	-	-	-	-	292	3.1
	Monduli	112	0	152	11.8	119	10.1	165	10.9	138	12.3
	Ngorongoro	-	-	-	-	-	-	-	-	57	5.3
Manyanra		-	-	-	-	-	-	-	-	4,780	12
	Babati	2,095	30.4	4,132	19.1	2,428	33.9	3,676	23.7	2,224	18.6
	Hanang	-	-	-	-	223	18	279	13.6	210	14.3
	Kiteto	-	-	64	10.9	266	11.7	537	10.6	579	10.5
	Mbulu	809	3.6	1,503	3.7	1,892	7.5	1,601	7.8	1,767	4
Coast		3,510	8.9	3,160	12.5	3,240	10.4	4,470	9.6	4,688	7
	Bagamoyo	320	5.9	463	7.8	236	13.6	282	14.2	692	3.3
	Kibaha	1,730	10.6	664	11.9	1,147	9.1	2,286	8.9	2,113	7
	Kisarawe	112	9.8	452	19	281	8.2	-	-	145	11
	Mafia	256	8.2	249	8	292	5.8	384	4.7	249	1.6
	Rufiji	1,092	7.1	1,318	13.1	1,284	12.5	1,518	11.1	1,489	9.3
DSM		694	33.1	1,739	8.6	1,956	18.8	3,547	12	4,923	10
	Ilala	428	45.1	1,005	9.7	1,351	14.7	1,536	6.3	2,125	6.9
	Kinondoni	162	12.4	658	5.5	153	33.3	1,295	15.1	1,833	10.3
	Temeke	-	-	-	-	452	25.9	716	18.4	965	16.3
Dodoma		2,269	5.1	3,001	3.9	8,984	7.9	4,351	7.6	3,933	7
	Dodoma municipality	1,364	4.8	1,129	5.6	4,249	13.2	2,280	6.9	2,251	4.6
	Kondoa	-	-	797	4.9	1,122	4.4	855	3.7	785	6.6
	Kongwa	-	-	-	-	441	7.3	1,216	11.7	897	13.3
	Mpwapwa	905	5.4	1,075	1.5	3,172	2.3	-	-	-	-
Iringa		4,258	14.7	2,393	14.6	5,104	18.7	3,450	14.8	2,115	15.4
	Iringa municipality	2,643	14.3	1,008	14.7	3,057	21.4	1,911	16.6	1,431	14.2
	Ludewa	280	22.1	415	15.2	534	18.4	165	17.6	-	-
	Mafinga	-	-	-	-	96	10.4	-	-	181	14.9
	Mufindi	297	8.1	301	8.9	62	3.2	318	6.6	83	3.6
	Njombe	1,038	15.7	669	16.6	1,355	13.9	1,056	13.7	420	22.1
Kagera		4,572	17.7	3,827	19.5	5,753	22	5,965	18	4,699	20.7
	Biharamulo	428	19.6	413	8.5	350	10.6	947	6.7	729	11.8



Region		Year 1999		Year 2000		Year 2001		Year 2002		Year 2003	
	District	Total donors	% prev								
	Mahenge	-	-	-	-	-	-	-	-	14	0
	Morogoro	4,440	8.2	4,072	12.1	4,964	13.5	2,887	10.4	1,685	7.1
	Mvomero	-	-	-	-	-	-	-	-	1,763	12
	Ulanga	805	3.7	540	15.4	876	6.4	849	1.9	1,546	1
Mtwara		3,030	7.8	8,665	8.2	5,767	7.5	6,476	6.8	4,833	6.5
	Mtwara urban	739	4.5	139	7.2	1,994	4.6	1,971	5.3	1,522	5.4
	Masasi	2,291	8.9	3,725	10.1	2,955	9.8	2,981	8.3	2,497	7.7
	Mtwara rural	-	-	3,182	7.2	-	-	-	-	-	-
	Newala	-	-	1,619	5.7	818	6.2	1,493	6	650	5.5
	Tandahimba	-	-	-	-	-	-	-	-	164	1.8
Mwanza		10,373	7	9,858	7.6	12,526	8	16,672	7.7	15,235	8.7
	Geita	832	8.8	1,173	7	1,942	6.2	2,228	7.2	2,289	7.3
	Kwimba	1,977	4.9	1,171	4.4	1,293	7.8	2,685	7.1	2,714	7.4
	Magu	1,436	9.5	1,243	12.6	1,539	13	2,214	12.2	2,571	14.6
	Misungwi	372	3.2	444	5.6	491	6.3	1,111	5.2	1,124	5.1
	Mwanza	2,561	5.8	2,377	8.2	3,061	7.6	3,544	6.3	4,148	5.4
	Sengerema	2,518	7.5	2,868	6.5	3,406	7.2	3,400	6.1	235	8.5
	Ukerewe	677	10.6	558	10	772	10	1,490	11.3	2,154	13.2
Rukwa		-	-	3,277	11.8	531	10.7	1,829	9.8	1,749	17.9
	Mpanda	-	-	565	12.2	341	8.8	375	7.5	-	-
	Nkasi	-	-	652	15.6	-	-	927	9.9	1,355	18.4
	Sumbawanga	-	-	2,045	10.6	190	14.2	527	11.4	394	16.2
Ruvuma		8,301	9.8	9,813	10.2	12,187	11.2	14,965	10.9	12,318	10.3
	Mbinga	3,502	7.5	3,618	9.4	3,646	11.4	5,370	10.1	3,950	8.8
	Songea	3,460	13.8	4,605	12.4	5,678	14.3	6,919	13.7	6,003	13.5
	Tunduru	1,339	5.3	1,590	6	2,863	4.8	2,663	5.3	2,365	4.4
Shinyanga		8,654	8.2	9,332	9.4	12,316	8.4	15,603	8.3	19,748	7
	Bariadi	2,676	4.2	1,580	4.8	2,569	6.2	4,045	6.1	9,754	4.9
	Kahama	2,534	10.2	2,344	9.6	3,754	8.6	5,632	7.8	4,743	9.4
	Maswa	690	9.3	908	9	1,239	10.1	1,800	9	1,059	6.6
	Meatu	426	10.3	307	10.1	569	12	799	8.1	436	12.4
	Shinyanga	2,328	9.9	4,185	11.1	4,185	8.6	3,327	11.5	3,756	9
Singida		4,187	8.1	5,326	8	6,785	11.8	5,896	10.9	4,962	7.6
	Iramba	181	5.5	1,095	12	710	5.2	737	14.2	537	8.6
	Kiomboi	-	-	-	-	14	7.1	-	-	-	-
	Manyoni	877	7.1	1,864	7.4	2,024	8.3	2,335	6.6	2,042	5.5



Region		Year 1999		Year 2000		Year 2001		Year 2002		Year 2003	
	District	Total donors	% prev								
	Singida urban	3,129	8.6	2,367	6.8	3,557	13	2,269	14.9	2,383	9.2
	Singida rural	-	-	-	-	480	27.5	552	8.3	-	-
Tabora		11,335	7.1	9,084	7.2	9,628	7.6	7,973	6.6	9,052	8.4
	Igunga	4,120	7	2,359	7.6	2,427	8.2	3,379	7.3	3,137	8.8
	Nzega	1,812	6.4	1,604	5.4	3,156	5.7	2,172	4.3	3,076	7.6
	Sikonge	892	5.7	875	5	1,043	6.7	1,210	6.4	1,317	6.1
	Tabora	2,918	7.8	2,445	7.8	1,487	8.1	-	-	-	-
	Urambo	1,593	7.7	1,801	8.8	1,515	10.8	1,197	9	1,522	11.3
Tanga		10,967	8.3	9,749	8.8	9,583	8.6	6,100	9.8	9,276	7.4
	Handeni	1,531	9.7	1,296	5.3	1,937	3.5	799	1.9	1,571	2.9
	Korogwe	1,945	9	1,034	6.1	795	6.8	-	-	1,798	6.4
	Lushoto	450	22.2	811	13.2	537	11	179	11.2	916	15.1
	Muheza	2,667	8.1	1,712	10.2	2,463	9.1	1,537	6.4	1,036	6.5
	Pangani	621	5.5	1,169	5.7	509	4.7	545	4.8	1,345	5.5
	Tanga	3,753	6.3	3,727	10.1	3,342	11.7	3,040	14.4	2,610	9.5



**Fig 2.7: Region specific trends of HIV prevalence among blood donors in the five Zones of Tanzania, 1998 - 2003**





Tables 2.4 and 2.5 show the sex specific prevalence by region. The regions with the highest prevalence of HIV infection among males in descending order were Kagera (21.0%) followed by Rukwa (17.8%) Iringa (14.9%) and Mbeya (13.5%). All the mentioned regions depicted a rise in prevalence except Iringa which observed a stable prevalence.

For females the highest prevalence was observed in the following regions in descending order: Mtwara (20.4%), Kagera (19.2%), Rukwa (19.1%), Iringa (18.2%), Arusha (18.1%), Manyara (18.0%) and Dar es Salaam (14.8%). Prevalence was stable or decreasing among women in Manyara, Iringa and Dar es Salaam while for the rest of the regions an increase was noted when the prevalence estimates of 2002 were compared to those of year 2003.

#### ***HIV infection trends among the youths aged 15-24 years by region***

Since HIV infection among the youths is recently acquired, prevalence estimates in this age group of 15-24 years approximates new infections. Changes in the magnitude of infection in this age group therefore reflect the true trend of the epidemic. To assess whether there were any changes in the trend of the epidemic among the youth during 2003, regional data was analysed by age.

Regions with the highest prevalence in this age-group in descending order included: Kagera (19.4%), Rukwa (14.8%), Iringa (12.2%), Manyara (9.8%) and Arusha (9.2%).

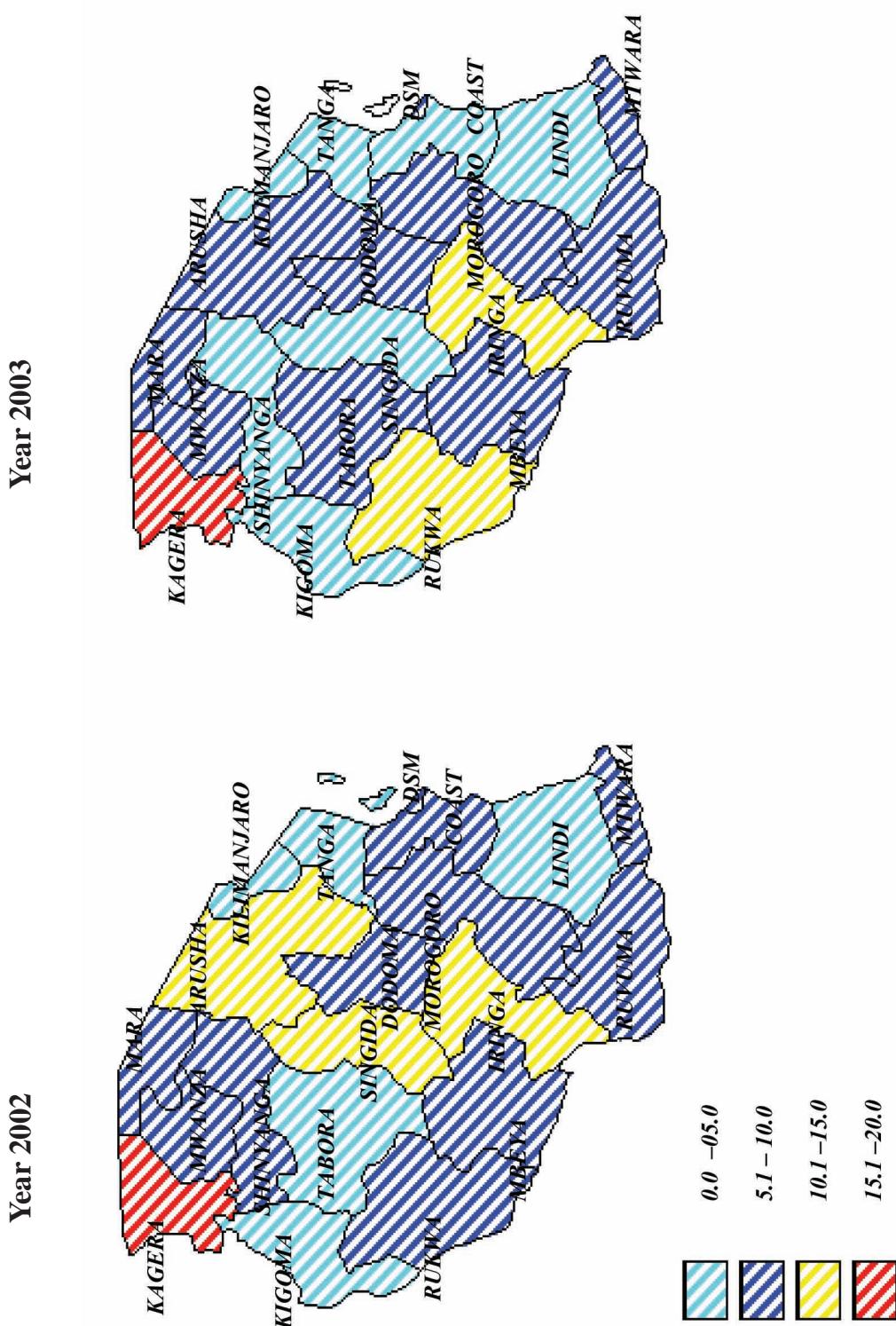
When prevalence was grouped into five and ten percent categories, the following was obtained:

- Seven regions namely Coast, Kigoma, Kilimanjaro, Lindi, Shinyanga, Singida and Tanga had a prevalence between 0-5%.
- Eleven regions namely Arusha, Dar es Salaam, Dodoma, Manyara, Mara, Mbeya, Morogoro, Mtwara, Mwanza, Ruvuma and Tabora had a prevalence ranging between 5.1 to 10%.
- Two regions namely Iringa and Rukwa had prevalence ranging between 10.1-15%
- One region namely Kagera had a prevalence above 15%, that is 19.4%.

For comparison with the previous years estimates, refer to Table 2.6 and Map 1.



Map 1: Regional prevalence (%) of HIV infection among blood donors aged 15 - 24 years, Tanzania 2002 and 2003



**Table 2.6 Age specific HIV prevalence among blood donors by region, Tanzania 1999 - 2003**

Region	Age group	Year 1999		Year 2000		Year 2001		Year 2002		Year 2003	
		Total donors	% Prevalence								
Arusha		3030	22.0	7223	13.8	6827	17.8	1705	9.0	2,095	11.1
	15 - 24	853	20.5	1834	11.3	1659	15.2	215	13.0	490	9.2
	25 - 34	1288	23.8	3365	14.7	3178	18.3	990	8.7	1,047	12.1
	35+	889	20.7	2024	14.3	1990	19.2	500	8.0	558	10.9
Coast		3510	8.9	3160	12.5	3240	10.4	4470	9.6	4,688	7.0
	15 - 24	941	7.8	606	8.2	829	7.2	1072	7.1	1,171	4.8
	25 - 34	1477	10.0	1305	13.1	1343	11.4	1964	10.8	2,044	6.7
	35+	1092	8.5	1249	13.9	1059	11.6	1434	9.8	1,473	9.2
Dar es Salaam		694	33.1	1739	8.6	1956	18.8	3547	12.0	4,923	10.0
	15 - 24	129	29.5	264	6.4	472	14.8	919	7.3	1,374	8.4
	25 - 34	267	37.5	460	10.2	987	18.7	1676	12.9	2,226	11.1
	35+	298	31.0	1015	8.4	495	22.4	952	14.7	1,323	9.7
Dodoma		2269	5.1	3001	3.9	8984	7.9	4351	7.6	3,933	7.0
	15 - 24	522	4.0	642	2.0	2026	6.6	833	7.7	926	7.3
	25 - 34	960	5.8	1275	4.3	3856	8.2	1882	8.2	1,616	7.2
	35+	787	4.8	1084	6.4	3083	8.4	1636	6.9	1,391	6.4
Iringa		4258	14.7	2393	14.6	5104	18.7	3450	14.8	2,115	15.4
	15 - 24	1207	13.2	687	11.4	1324	15.9	976	12.6	551	12.2
	25 - 34	1809	17.1	1003	16.8	2170	21.3	1386	17.7	882	18.6
	35+	1242	12.7	703	14.6	1608	17.4	1088	13.1	682	13.9
Kagera		4572	17.7	3827	19.5	5753	22.0	5965	18.0	4,699	20.7
	15 - 24	1435	12.1	1045	15.1	1601	18.2	1724	15.1	1,261	19.4
	25 - 34	1926	19.4	1694	21.2	2542	21.7	2513	18.5	2,082	20.5
	35+	1211	21.6	1088	21.1	1583	26.5	1728	20.2	1,356	22.1
Kigoma		6860	6.4	6772	3.8	7412	4.9	3935	3.2	8,124	4.8
	15 - 24	1537	4.8	1346	2.1	1811	3.9	942	2.7	1,876	3.3
	25 - 34	2964	6.4	2959	4.3	3093	5.6	1601	3.2	3,509	5.4
	35+	2359	7.4	2467	4.3	2494	4.7	1392	3.5	2,739	5.0
Kilimanjaro		5218	4.8	4435	6.8	4823	5.9	4125	6.8	3,334	4.8
	15 - 24	1438	2.8	1189	3.8	1266	4.2	1084	4.4	883	2.9
	25 - 34	2374	5.2	1938	7.4	2103	6.1	1750	7.3	1,418	5.4
	35+	1406	6.3	1308	8.6	1448	6.8	1291	8.3	1,033	5.6
Lindi		7083	3.4	5092	4.2	6046	3.8	5856	3.6	5,308	3.8
	15 - 24	1905	3.0	1208	1.2	1484	2.1	1388	2.2	1,187	3.4
	25 - 34	3110	3.2	2088	4.4	2657	3.8	2622	4.6	2,308	4.4
	35+	2068	4.3	1796	5.4	1841	4.3	1846	3.4	1,813	3.4
Manyara				0		0		6093	17.9	4,780	12.0
	15 - 24			0		0		1634	15.4	1,349	9.8



Region	Age group	Year 1999		Year 2000		Year 2001		Year 2002		Year 2003	
		Total donors	% Prevalence								
	25 - 34			0		0		2575	19.1	2,013	11.5
	35+			0		0		1887	18.5	1,418	14.9
Mara		5151	9.2	10676	9.4	9277	9.0	10709	10.3	8,108	7.8
	15 - 24	1870	7.9	3274	6.6	2928	7.8	3497	8.2	2,694	5.9
	25 - 34	2028	11.4	4261	10.8	4002	9.6	4440	11.1	3,390	8.6
	35+	1253	7.5	3141	10.3	2308	9.3	2772	11.7	2,024	9.1
Mbeya		6691	15.2	7338	17.0	10618	16.4	7462	12.7	7,957	14.8
	15 - 24	1922	10.8	2102	12.2	3118	12.7	2117	9.4	2,568	8.5
	25 - 34	2767	18.5	3051	20.1	4359	19.0	3054	15.3	3,028	18.0
	35+	2002	15.0	2185	17.3	3105	16.3	2291	12.4	2,361	17.4
Morogoro		12389	11.3	7606	16.6	12755	17.2	9764	8.6	10,140	8.3
	15 - 24	2980	10.2	1676	16.6	2881	16.7	2206	8.9	2,386	8.5
	25 - 34	5602	11.2	3430	16.2	5675	17.3	4270	8.7	4,556	8.2
	35+	3807	12.4	2500	17.0	4068	16.9	3288	8.1	3,198	8.3
Mtwara		3030	7.8	8665	8.2	5767	7.5	6476	6.8	4,833	6.5
	15 - 24	752	6.8	2084	7.0	1460	6.0	1583	5.5	1,090	5.5
	25 - 34	1409	8.4	3827	8.8	2589	7.4	3016	6.9	2,202	6.7
	35+	869	7.8	2754	8.2	1706	8.8	1877	7.8	1,541	6.9
Mwanza		10273	7.0	9858	7.6	12515	8.0	16672	7.7	15,235	8.7
	15 - 24	3081	5.6	2627	5.4	3783	5.6	4902	5.1	4,962	5.1
	25 - 34	4190	8.3	4059	8.5	5068	9.3	6777	9.1	6,110	10.3
	35+	3102	6.8	3172	8.4	3643	8.8	4993	8.2	4,163	10.6
Rukwa				3277	11.8	531	10.7	1829	9.8	1,749	17.9
	15 - 24			968	7.8	134	10.4	567	7.2	559	14.8
	25 - 34			1321	14.5	215	9.8	776	11.3	726	19.3
	35+			988	12.3	182	12.1	486	10.5	464	19.4
Ruvuma		8301	9.8	9813	10.2	12187	11.2	14965	10.9	12,318	10.3
	15 - 24	2240	10.0	2688	8.4	3391	10.5	4232	8.1	3,569	8.0
	25 - 34	3689	10.6	4277	10.8	5342	11.5	6755	12.3	5,385	11.5
	35+	2372	8.3	2848	11.1	3327	11.5	3978	11.5	3,364	10.6
Shinyanga		8654	8.2	9332	9.4	12305	8.4	15603	8.3	19,748	7.0
	15 - 24	2167	6.6	2170	7.5	2759	6.4	3595	6.8	5,015	4.7
	25 - 34	3987	8.6	4217	10.0	5950	9.1	7439	8.8	8,999	7.9
	35+	2500	8.7	2945	10.0	3568	8.8	4569	8.7	5,734	7.7
Singida		4187	8.1	5326	8.0	6785	11.8	6209	11.9	4,962	7.6
	15 - 24	947	5.7	1195	7.7	1462	9.5	1394	10.6	1,027	4.4
	25 - 34	1868	8.9	2266	8.4	3049	12.7	2691	13.9	2,074	8.4
	35+	1372	8.7	1865	7.9	2241	12.1	2124	10.1	1,861	8.5
Tabora		11335	7.1	9084	7.2	9628	7.6	7973	6.6	9,052	8.4
	15 - 24	2877	5.3	2187	4.8	2464	6.0	1826	5.0	2,195	5.6
	25 - 34	5121	7.6	4084	7.4	4369	8.3	3692	7.2	4,151	9.7
	35+	3337	7.9	2813	8.4	2795	8.0	2455	6.8	2,706	8.7
Tanga		10967	8.3	9749	8.8	9583	7.2	6101	7.3	9,276	7.4
	15 - 24	2747	6.2	2383	8.7	2374	8.7	1,574	7.3	2,066	4.8
	25 - 34	5122	8.6	4540	9.0	4436	9.5	2,836	10.5	4,481	8.2
	35+	3098	9.8	2826	8.5	2745	7.1	1,691	10.9	2,729	8.1



## 3.0 NATIONAL HIV/AIDS ESTIMATES AND PROJECTIONS

### Background

UNAIDS and WHO have developed a new procedure and computer software for making estimates and projections of HIV/AIDS magnitude and its impact. This endeavor provides a standardized approach to estimations that could be applied in all countries. The model consists of two computer software; the estimations and projections package (EPP) and the spectrum. The EPP software fits an epidemic curve on the ANC HIV surveillance data which have been collected over time to generate prevalence estimations both numerically and by curves. These prevalence estimations, together with various additional assumptions are then applied into the second software, the spectrum, to estimate and project impacts of the HIV/AIDS epidemic over time. In order for the model to work and generate plausible output, a number of inputs are required.

### Methods

A three day HIV/AIDS estimations and projections consensus workshop involving technical partners and policy makers was organized in Dar es Salaam in February 2004. The objectives of the workshop were to introduce EPP and Spectrum models, discuss and agree on model inputs and assess the available antenatal clinic (ANC) HIV surveillance data.

During the workshop, origin of estimation and projection package and spectrum models, rationale, inputs and the outputs were presented in a plenary followed by demonstration of necessary steps in the application of the models from inputting data to generating output.

To initiate discussion, facilitators presented draft inputs for the EPP and spectrum. Two sets of draft inputs were taken to the workgroups for further improvement. One group worked on the ANC HIV prevalence data set covering the period from 1985 to 2002. The group did categorization of ANC where data was originating into urban and rural following standard national definitions of urban and rural areas. It also cleaned the data set by removing implausible prevalence estimates and estimates that were suspected to have been collected without following the national protocol for ANC HIV surveillance. At the completion of data cleaning, HIV prevalence data from 26 urban and 19 rural ANC were approved for inclusion in a data set for inputting in the EPP model.

Another workgroup collected various data for inputting in the spectrum model. Principles used were that as much as possible data should originate from Tanzania, and even those originating from Tanzania preference should be that originating from wider area or population groups, such that a more recent data could be left out when there is a previous data which covers a wider area or population group.

At the end of group discussion sessions, both workgroups presented their output at a plenary for final discussion and consensus.

### Model inputs

The following data with sources in parenthesis were agreed set of spectrum input to generate impact estimates



and projections. As much as possible data that is locally generated were preferred, otherwise UN estimates were used:

- Base year population estimates (UN, 2002).
- Age distribution of fertility (TRCHS, 1999)
- Total fertility rate—5.6 (TRCHS, 1999)
- Sex ratio at birth—96 (Census, 2002)
- Life expectancy at birth: Male 46.8, Females 49.1 (UNDP, 1999).
- Percent of women 15-19 never married—72.8% (TRCHS, 1999)
- Percent of women in monogamous union—71% (TDHS, 1997)
- Infant mortality rate—107 (UN, 2002).
- Crude death rate—17 per 1,000 (UN, 2002) 107 per 10,000.
- Net International Migration is assumed to be zero.
- HIV prevalence among ANC attendees (9.6%)
- Start year of epidemic—1983.
- Infants with AIDS dying in the first year (%)—67 (UN, 2002).
- Life expectancy after AIDS onset (years)—1 (UN, 2002).
- Percent reduction in fertility among HIV positive women—50% (15-19 years), 20% (20-49 years) [UN, 2002].
- Prenatal transmission (%)—32 percent (UN, 2002).
- HIV incubation period (%)—assumed slow pattern.
- Expenditure per AIDS patient—TZS 223,000 (ESRF, 2003)
- Percent of AIDS patients hospitalized per year—66 percent (ESRF, 2003).
- Ministry of Health Budget—243 billion in FY2002/03 (MoH, 2003) Tshs.
- Number of hospital beds—29,616 in 1998 (MoH, 1999).
- Bed capacity factor—80 percent (ESRF, 2003).
- Bed days per AIDS patient—40 days (ESRF, 2003); 25 days (NIMR, 2001).



Table 3.1 HIV/AIDS estimates

	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>
<b>HIV population (thousands)</b>											
Total	1,660	1,700	1,720	1,740	1,750	1,770	1,780	1,810	1,840	1,870	1,910
Males	760	780	800	810	820	830	840	860	880	900	900
Females	900	920	930	940	950	960	980	1,000	1,020	1,020	9.22
<i>Adult prevalence (%)</i>	10.51	10.39	10.21	10	9.8	9.63	9.48	9.36	9.29	9.24	9.22
<b>New AIDS cases</b>											
Total	142,990	156,420	167,510	175,880	181,710	185,290	187,220	187,940	188,140	188,400	189,160
Males	70,640	75,900	80,170	83,390	85,800	87,480	88,730	89,650	90,450	91,270	92,240
Females	72,360	80,530	87,340	92,490	95,910	97,810	98,490	98,290	97,690	97,130	96,930
<b>Annual HIV+ births</b>											
Total	46,430	46,510	46,280	45,720	44,960	44,320	43,900	43,540	43,310	43,290	43,350
Percent	3.56	3.52	3.47	3.41	3.35	3.29	3.25	3.22	3.19	3.17	3.17
<b>Annual AIDS deaths</b>											
Total	128,480	143,830	157,250	168,210	176,350	181,950	185,280	186,900	187,350	187,350	187,470
Males	64,780	71,010	76,260	80,470	83,570	85,870	87,420	88,510	89,300	90,000	90,750
Females	63,700	72,820	80,980	87,740	92,780	96,080	97,860	98,380	98,040	97,350	96,720
Per thousand	4.23	4.63	4.94	5.17	5.3	5.36	5.35	5.29	5.2	5.1	5.01
<b>Cumulative AIDS deaths (thousands)</b>											
Total	610	750	910	1,080	1,260	1,440	1,620	1,810	2,000	2,190	2,370
Males	330	400	470	560	640	720	810	900	990	1,080	1,170
Females	280	360	440	520	620	710	810	910	1,010	1,110	1,200
<i>Adult HIV incidence (%)</i>	1.5	1.45	1.43	1.44	1.45	1.47	1.48	1.49	1.5	1.5	1.49
<i>Annual new TB cases</i>	100,430	102,530	104,240	105,750	107,260	108,900	110,760	112,910	115,350	118,100	121,110

**Table 3.2 Estimated male (thousands) living with HIV/AIDS by age groups, Tanzania 2000 - 2006**

Year	2000	2001	2002	2003	2004	2005	2006
0-4	50	50	50	50	50	50	50
5 - 9	30	30	30	30	30	30	30
10 - 14	0	0	0	0	0	0	0
15 - 19	40	40	40	40	40	40	40
20 - 24	80	80	80	80	80	80	90
25 - 29	160	160	160	170	170	170	180
30 - 34	160	160	160	170	170	180	180
35 - 39	120	120	130	130	130	130	140
40 - 44	80	80	80	80	90	90	90
45 - 49	50	50	50	50	50	50	50
50 - 54	30	30	30	30	30	30	30
55 - 59	10	10	10	10	10	10	10
60 - 64	0	0	0	0	0	0	0
65 - 69	0	0	0	0	0	0	0
70 - 74	0	0	0	0	0	0	0
75 - 79	0	0	0	0	0	0	0
80+	0	0	0	0	0	0	0
Total	810	820	830	840	860	880	900

**Table 3.3 Estimated female (thousands) living with HIV/AIDS by age groups, Tanzania 2000 - 2006**

Age	Year						
	2000	2001	2002	2003	2004	2005	2006
0 - 4	50	50	50	50	50	50	5
5 - 9	30	30	30	30	30	30	30
10 - 14	0	0	0	0	0	0	0
15 - 19	100	100	100	100	100	110	110
20 - 24	210	210	210	210	220	230	230
25 - 29	200	200	200	200	200	210	210
30 - 34	130	130	140	140	140	150	150
35 - 39	90	90	90	90	90	100	100
40 - 44	60	60	60	60	60	60	70
45 - 49	40	40	40	40	40	40	40
50 - 54	20	20	20	20	20	20	20
55 - 59	10	10	10	10	10	10	10
60 - 64	0	0	0	0	0	0	0
65 - 69	0	0	0	0	0	0	0
70 - 74	0	0	0	0	0	0	0
75 - 79	0	0	0	0	0	0	0
80+	0	0	0	0	0	0	0
<b>Total</b>	<b>940</b>	<b>950</b>	<b>950</b>	<b>960</b>	<b>980</b>	<b>1000</b>	<b>1020</b>

**Table 3.4: Estimated cause and type specific orphans in Tanzania 1985 - 2006.**

<i>Year</i>	<i>Maternal AIDS</i>	<i>Paternal AIDS</i>	<i>Dual AIDS</i>	<i>All AIDS</i>	<i>Total Orphans (all causes) (thousands)</i>
1996	255,500	282,780	265,770	272,520	1,480
1997	320,710	338,770	328,100	331,380	1,560
1998	389,020	394,750	392,560	391,210	1,640
1999	457,260	448,680	455,940	450,000	1,720
2000	522,200	498,660	514,660	506,200	1,800
2001	580,880	543,320	565,890	558,310	1,870
2002	631,050	581,620	607,850	604,820	1,940
2003	671,400	613,150	639,590	644,950	1,990
2004	701,640	637,980	661,210	678,410	2,040
2005	722,390	656,550	673,740	705,190	2,080
2006	734,840	669,460	678,860	725,450	2,110



## 4.0 SURVEILLANCE OF OTHER STIs

### Introduction

Sexually transmitted infections (STIs) are a major public health problem, which cause acute illness, infertility, long-term disability and death, with severe social, economic, psychological and health consequences for millions of people. STIs are a marker of sexual networking and may provide clues on the extent of unprotected sex in a community. STIs are also known to facilitate sexual transmission and spread of HIV infection. While control of STIs has been recognized as one of the key strategies in the control and prevention of HIV infection, effective STI management is an important cornerstone of STI control. The latter prevents the development of complications, decreases the spread of these infections in the community and provides opportunity for provision of health education about HIV prevention. Consequently, systematic surveillance for the STIs through a National Programme may provide the needed environment for their eventual control.

### History of STI control

This started as a pilot in 22 urban based facilities in few districts during late 1980s, followed by 12 regions under the support of European Union (EU). The EU supported regions included Dar es Salaam, Dodoma, Iringa, Kigoma, Mara, Mbeya, Morogoro, Shinyanga and Tanga. Subsequently the programme was expanded to more regions. Plans are underway to increase coverage to all regions by 2004. Despite these developments, implementation in many clinics is hampered by irregular supply of adequate STI drugs, laboratory reagents and other medical supplies. Also there are inadequate work forces of well trained personnel to provide STI services.

### Methods

Specially designed STI form are distributed to all hospitals, health centres and dispensaries that provide comprehensive STI care to allow them to collect aggregate information. The information includes, number of new episodes of STI syndromes, number of treated cases by type and location of facility, type of STI and by age group (<20, 20-29 and 30+years). The data collection form also reports re-treatment and contacts traced. The aggregated information is recorded by specified age groups, which limits further analysis at the national level. The aggregated information is reported at quarterly intervals by submitting the duly-filled forms to NACP through the respective District and Regional Medical Officers for compilation at the end of each year.

### Results

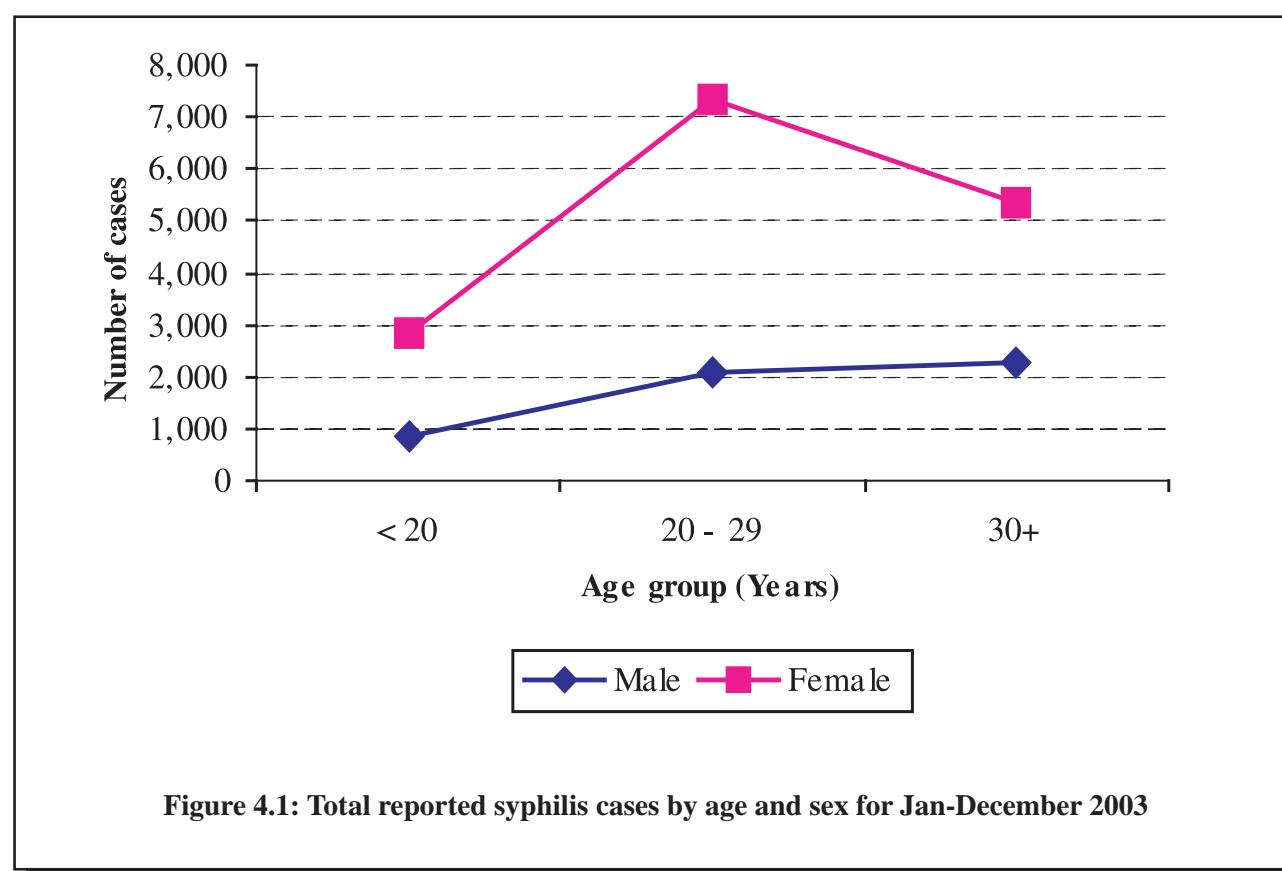
During the year 2003, a total of 223,388 STI episodes were reported throughout the STI clinics. Of these, 98,129 (43.9%) were genital discharge syndromes, 41,427 (18.5%) were genital ulcer diseases, 42,527 (19.0%) were pelvic inflammatory diseases, 20,694 (9.3%) were Syphilis and other syndromes constituted the rest 20,611 (9.2%).

Regions reporting the highest number of episodes include Dodoma, Mbeya, Mara, Dar es Salaam and Tanga in decreasing order. The least number of episodes were reported from Ruvuma, Kagera, Rukwa and Singida. The number of STI episodes among females was higher (61.8%) than in males (38.2). The most affected age groups in both sexes were those of 20-29 years, followed by the age group 30 years and above (See table 4.1 for details)

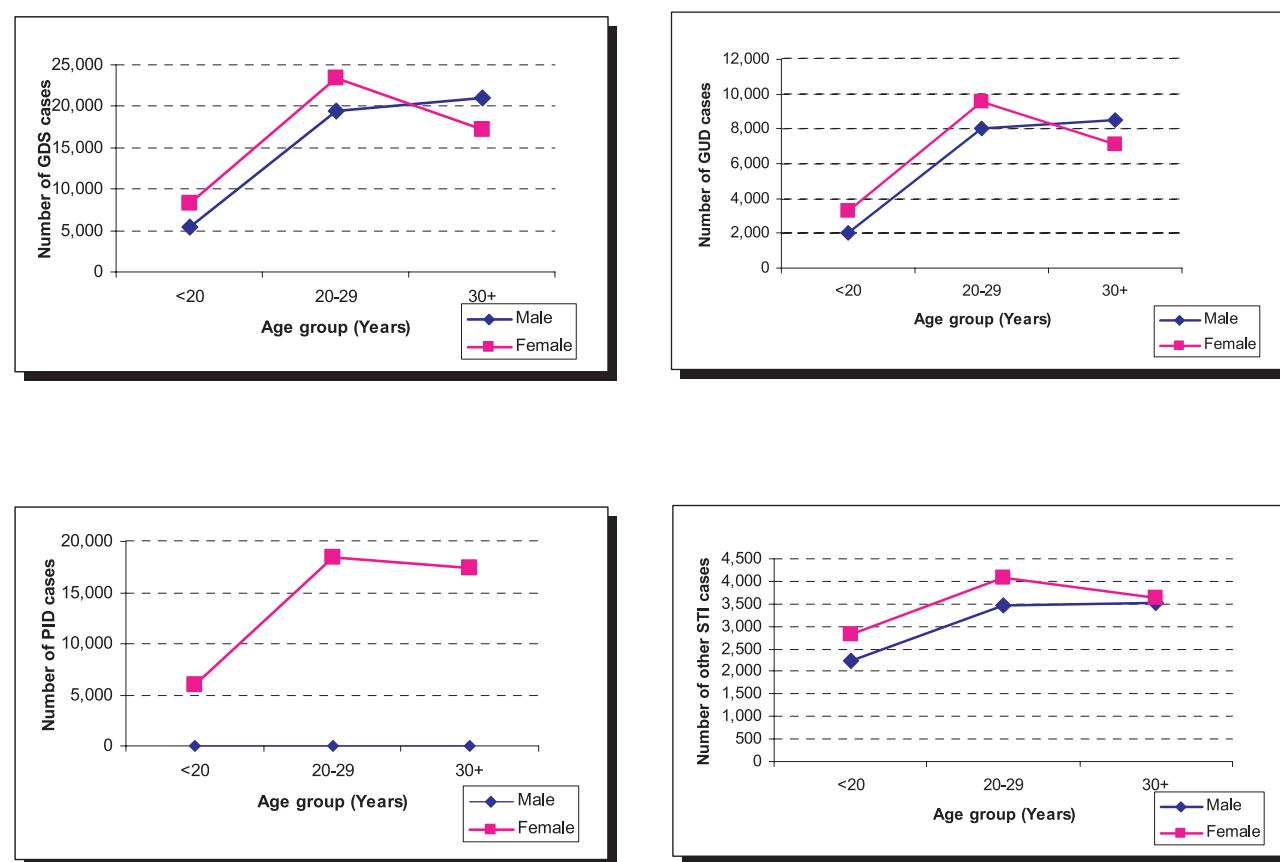
Figure 4.1-4.5 summarizes the pattern of age and sex distribution of STI episodes by syndromes. The number of reported episodes in 2003 is still small compared to those reported in the year 2001. This observation might be due to either insufficient recording in health facilities or under reporting of STI cases from the general population.



Among the cases which reported STI episodes, 29,187(14.4%) were given re-treatment, possibly due to drug resistance, re-infection, non compliance and treatment interruption for various reasons. Assuming that each case had one contact, altogether about 29.6% of the contacts (59,927cases) were traced and treated. This reflects a low yield, emphasizing the need for strengthening for contact tracing strategies.



**Figure 4.1: Total reported syphilis cases by age and sex for Jan-December 2003**



**Figure 4.2-4.5 Distribution of reported new STI episodes by age groups, sex and syndromes, Jan-Dec 2003**



Table 4.1 Distribution of new syndromes, re-treatments and contacts by sex and regions, Tanzania, Jan-Dec 2003.

Region	Sex	GDS	GUD	PID	Others	Total	Re-Treated	Contacts
ARUSHA	Male	3,488	729		383	4,600	425	1,009
	Female	4,626	825	2,346	324	8,121	882	1,583
COAST	Male	435	135		136	706	42	316
	Female	858	181	1,052	138	2,229	156	184
DODOMA	Male	8,351	3,318		2,282	13,951	3,303	5,904
	Female	7,282	4,011	7,224	2,505	21,022	4,378	7,344
DSM	Male	3,517	1,987		830	6,334	757	1,649
	Female	5,594	2,249	4,964	1,295	14,102	1,171	1,860
IRINGA	Male	914	810		354	2,078	50	246
	Female	1,239	846	807	549	3,441	63	346
KAGERA	Male	122	18		59	199	38	61
	Female	94	9	155	34	292	17	90
KIGOMA	Male	1,771	298		161	2,230	289	1,124
	Female	1,512	288	731	167	2,698	443	966
KILIMANJARO	Male	115	382		262	759	11	217
	Female	750	354	987	148	2,239	44	66
LINDI	Male	778	138		109	1,025	169	
	Female	1,405	179	581	109	2,274	256	582
MANYARA	Male	1,768	862		1,077	3,707	356	758
	Female	3,818	975	3,108	1,064	8,965	577	563
MARA	Male	2,853	5,220		1,131	9,204	828	1,938
	Female	6,117	4,815	5,193	1,176	17,301	1,082	1,698
MBEYA	Male	6,807	2,483		1,441	10,731	1,721	4,054
	Female	5,430	2,474	4,090	602	12,596	2,100	5,722
MOROGORO	Male	2,590	280		142	3,012	853	2,173
	Female	724	285	652	112	1,773	1,512	1,957
MTWARA	Male	1,447	826		334	2,607	455	1,066
	Female	3,211	921	2,654	463	7,249	641	931
MWANZA	Male	1,860	19		19	1,898	346	1,898
	Female	86	12	203	131	432	1,338	978
RUKWA	Male	144	152		132	428	62	343
	Female	189	202	114	164	669	67	489
RUVUMA	Male	36	3		0	39	3	9
	Female	23	3	14	1	41	1	13
SHINYANGA	Male	3,178	383		128	3,689	609	1,955
	Female	917	374	1,104	130	2,525	849	1,665
SINGIDA	Male	270	59		33	362	43	121
	Female	376	100	401	57	934	49	170
TABORA	Male	2,094	1,063		428		281	905
	Female	2,109	1,418	2,031	765	6,323	512	942
TANGA	Male	4,827	872		640	6,339	948	2,916
	Female	4,404	869	4,116	596	9,985	1,460	2,558
TOTAL		98,129	41,427	42,527	20,611	202,694	29,187	59,924



## 5.0 VOLUNTARY COUNSELING AND HIV TESTING SERVICES

### Introduction

In 1989, Voluntary counseling and Testing (VCT) services for HIV prevention was recommended by World Health Organization (WHO) as a routine service in the Health facilities. In 1995 the Ministry of Health, initiated an improved VCT pilot project in four regions (Dar es Salaam, Morogoro, Coast and Dodoma). Gradually, the Programme expanded to provide comprehensive VCT services to the general public and by 1997, a total of 59 sites had been established in 19 regions. To date (2003), there are 255 sites that are managed by public hospitals and faith based organizations, and 34 sites that are managed by African Medical Research Foundation (AMREF) and other significant number of sites that are managed by other non governmental organizations (NGOs), Faith Based organizations (FBOs) and private health facilities

Majority of VCT services are provided in sites that have been established and run by trained counselors. The Ministry of Health (MOH) provides training to its counselors using the National VCT training guidelines and curriculum. The curricular are also distributed to other institutions for training their counselors. The official counselors' training period lasts for six continuous weeks and is usually run by National Counselor trainers. There are two types of counseling sites. Those located and managed by public health facilities (hospitals, health centers and dispensaries which may be government, faith based or private) and those managed by NGOs or private institutions as stand alone sites. Health facility-based sites are largely accessed by referred suspected HIV infected patients, while the stand alone sites are accessed largely by apparently healthy members of the general public who are curious about their sero-status for various reasons including pre-marital testing, testing as a requirement for traveling abroad for studies, etc. Government health facility-based sites provide free services while the stand alone sites provide services at subsidized fees.

### Methods

Specially designed VCT forms are distributed to all sites that provide VCT services to collect quarterly aggregated information which includes number of new clients counseled, number of clients tested for HIV and number of HIV positives. Dully-filled forms are forwarded to NACP for compilation.

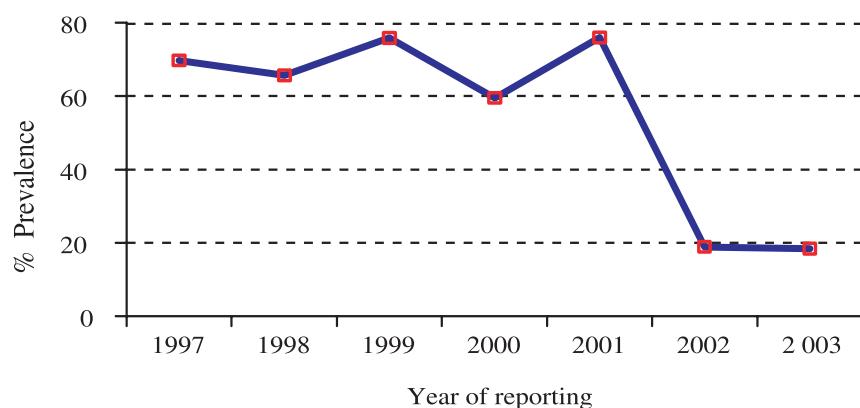
### Results

Between 1997 and 2001 the overall HIV prevalence for all VCT sites ranged between 59.5 and 76%. In 2002, the overall HIV prevalence dropped to 18.9%, and in 2003 it further dropped to 18.4% (Figure 5.1). This observation may be a reflection of the differences in the populations accessing the two types of counseling sites, the health facility based, which tend to be used mostly by patients and stand alone VCT sites, which tend to be used mostly by apparently healthy members of the general public. Until 2001, the proportion of HIV infected suspects who were being tested for HIV infection in health facility-based VCT sites was higher. Subsequently, the proportion of VCT clients from the general public increased parallel to the increase in the number of stand alone VCT sites and community sensitization on the importance of using VCT services.

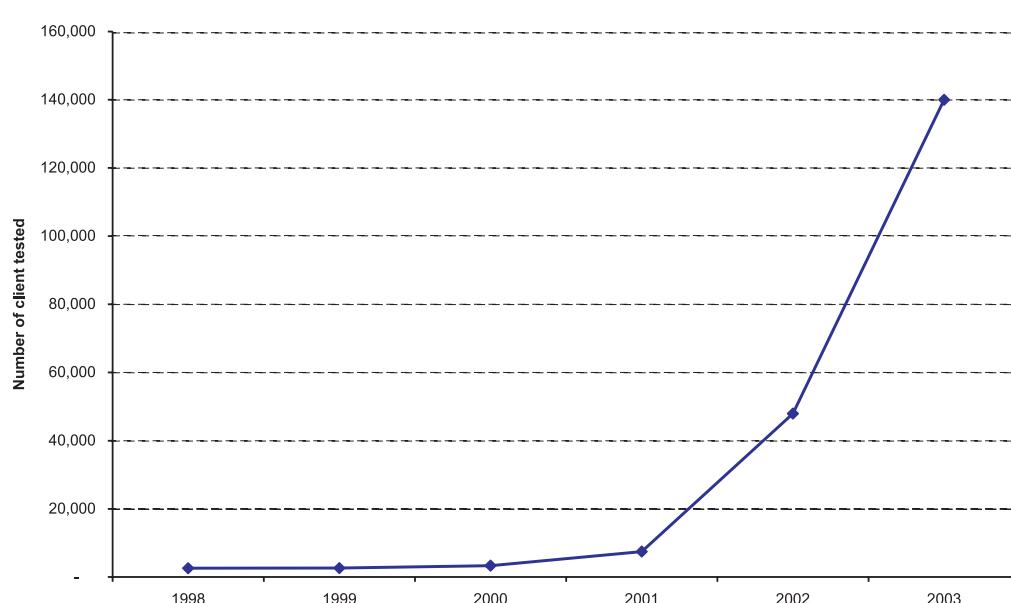
Of the 114 hospital-based VCT sites which reported to NACP in 2003, a total of 72 (63%) sites reported for all four quarters of the year, 14 (12%) reported for 3 quarters of the year, 27 (24%) reported for two quarters and only one site reported for one quarter.



Table 5.1 shows the number of new VCT clients, those consenting for HIV testing and the overall HIV prevalence among VCT clients by regions for the five-year period from 1999 to 2003. A total of 139,972 clients consented for HIV testing in 2003 compared to 47,956 clients in the year 2002. As shown in Figure 5.2 the increase in the number of clients who tested in 2003 was quite remarkable compared to the trend in the past. This increase may be due to various reasons including improved access to VCT services following opening of many VCT sites in different areas in the country, growing awareness on the importance of using VCT services as a result of the ongoing public sensitization and improvements in data collection and reporting.



**Figure 5.1 The trend of HIV prevalence in VCT sites, Tanzania, 1997 - 2003**



**Figure 5.2 Number of people tested for HIV at VCT sites in Tanzania 1998 - 2003**

The overall HIV prevalence among users of health facility-based VCT sites was 23.6% while it was 10.6% among clients of 34 AMREF managed (ANGAZA) sites, which are mainly stand alone. The prevalence of HIV infection in health facility-based sites ranged from 7.8% in Kilimanjaro to 38.1% in Lindi region. Putting together the health facility-based sites with the ANGAZA sites, the overall HIV prevalence was 18.4%.



Table 5.1 Voluntary Counseling and HIV Testing Services by region, Tanzania 1999-2003

Region	1999			2000			2001			2002			2003				
	New clients tested	HIV positive %	New clients	New client tested	HIV positive %	New clients	Clients counseled	% +Ve tested	New clients	client tested	% +Ve	Clients counseled	New clients	client tested	% +Ve		
Arusha	457	100	76	34	20	30	717	272	51	2282	1118	1031	42.8	2576	1775	1843	
Coast	310	119	63	317	40	80	821	416	81	721	204	108	47.2	853	609	556	
Dodoma	-	-	0	-	-	-	310	91	71	-	-	-	-	3855	3699	3716	
Dar es Salaam	119	1109	86.6	3042	1799	58.8	3240	2989	89	34831	33460	33696	11.7	22867	11340	17007	
Iringa	568	356	73.6	857	412	61.9	1010	617	73	1965	1635	1635	50.5	10719	6501	6894	
Kagera	-	-	0	-	-	-	516	260	61	1058	1058	731	36.1	632	594	617	
Kigoma	76	33	72.7	227	170	59.4	468	332	62	1901	781	737	23.6	3437	2680	2767	
Kilimanjaro	-	-	0	-	-	-	461	301	64.4	1583	916	666	22.3	7830	1096	5714	
Lindi	-	-	0	153	71	56.3	301	214	54.9	750	542	646	48.7	531	481	485	
Manyara	-	-	-	-	-	-	-	-	4	4	4	0	1555	1168	1552	9.0	
Mara	-	-	0	478	310	53.9	724	432	57.6	2809	2637	-	-	2459	2205	2198	
Mbeya	-	-	-	-	-	-	-	-	-	2649	42	-	-	24000	0	23500	
Motogoro	115	89	65.2	85	11	72.7	291	136	73	269	142	177	35.5	1184	1041	1076	
MtWARA	191	70	72.9	152	-	-	192	91	81	611	524	329	32.8	2816	2614	2679	
Mwanza	429	682	64.5	788	412	62.1	928	592	73	2734	1688	1689	36.4	1679	1478	1523	
Rukwa	17	13	38.5	92	32	59.4	103	74	63	528	402	352	28.6	1029	846	911	
Ruvuma	157	20	90	76	17	88.2	132	101	89	4162	2042	2709	22.5	3248	2947	3021	
Singida	15	9	66.7	-	-	-	344	179	74	687	304	479	22.7	2698	2677	2691	
Shinyanga	-	-	0	155	-	-	381	156	68	247	130	247	40.4	3563	2279	1816	
Tanga	58	41	65.9	83	44	70.5	159	71	72	81	69	71	70.4	1082	965	954	
Tabora	36	0	0	-	-	-	403	149	56	-	-	-	-	1715	1022	1685	
<b>Total</b>	<b>2548</b>	<b>2641</b>	<b>75.8</b>	<b>6539</b>	<b>3338</b>	<b>59.5</b>	<b>11501</b>	<b>7473</b>	<b>76</b>	<b>57223</b>	<b>47656</b>	<b>47956</b>	<b>18.9</b>	<b>100328</b>	<b>48017</b>	<b>83205</b>	<b>23.6</b>
Angaza Total														56767	10.7		
Overall Total														139,972	18.4		



## 6.0 HIGHLIGHTES OF RESERCH PUBLICATIONS IN TANZANIA

### 01.0 Title: Baseline Survey of Sexually transmitted infections in a cohort of female bar workers in Mbeya Region, Tanzania.

**Authors:** G. Reidener, M. Rusizoka., O. Hoffmann., F Nichombe., E. Lyamuya., D. Mmbando., P. Hay., J. Todd., R. Hayes., M. Hoelscher, H. Grosskurth.

**Source:** *Sex Transm Infect 2003, 79: 283 – 387.*

#### **Objective:**

To determine baseline prevalence of sexually transmitted infections (STI) and other reproductive tract infections (RTI) and their association with HIV as well as sociodemographic and behavioural characteristics in a newly recruited cohort of female bar workers in Mbeya region, Tanzania.

#### **Methodology:**

During September to November, 2000 a Cohort of 600 female bar workers were recruited from 17 different communities and underwent gynaecological examination, laboratory testing for HIV/STI and interviews using structured questionnaires

#### **Results:**

HIV-1 seroprevalence was 68% STI/RTI. Problems identified were syphilis herpes simplex virus type 2 Chlamydia, gonorrhea, Trichomoniasis and bacterial vaginosis. HIV infection was associated with clinically diagnosed genital ulcers, blisters and warts. Reported high-risk sexual behaviour during the past year (having multiple casual partners) was associated with prevalent STI.

#### **Conclusion:**

Female bar workers in Mbeya are at high risk of STI and HIV infection. Targeted STI/HIV prevention interventions for these women and their sexual partners need to be reinforced. Methods should be sought to improve health care seeking and to provide easily accessible and affordable STI Care Services.

#### **Recommendation:**

Since STI are known to facilitate HIV transmission the Tanzania policy regarding hotel and bar workers requires the licensing authority to issue business license only after presentation of medical certificates for workers of the hotel/bar. It is therefore imperative to intensify this policy so that workers in such establishment are thoroughly examined and treated for STI and other conditions before allowed to provide services to customers.



## 2.0.TITLE: Male Condom use in Tanzania: results from a National Survey

**Authors:** Kapiga S.H. and Lugalla, J.L.P.

**Source:** East Africa Medical Journal 2003; 80 (4): 181 - 190

### **Objective:**

To determine factors associated with male condom use in Tanzania.

### **Methodology:**

Data from the 1996 Tanzania Demographic and Health Survey (TDHS) was used. In this survey, a national representative sample of 1898 sexually active men and 7,027 women were interviewed to obtain information about potential predictors of sexual practices and condom use

### **Results:**

Two hundred and ninety (4.1%) women and 290 (15.2%) men had used condoms during their last sexual encounter. Men aged 20 – 24 years and women aged 15 – 19 years reported the highest rate of condom use. In both men and women, condom use increased with increasing level of education. Condom use was significantly increased among women and men practicing high risk sexual behaviour. Similarly, condom use was significantly increased among men who were never married and those who had ever tested for AIDS.

### **Conclusions:**

Promotion activities have been less successful in Tanzania.

### **Recommendation:**

Additional efforts to improve the distribution of condoms and increase condom acceptability and use are urgently needed.

## 03.0 Title: Estimates of HIV– prevalence from national population – based surveys as a new gold standard.

**Authors:** Ties Boerma., Peter D., Ghys., Neff Walker.

**Source:** The Lancet, vol.362, December 6, 2003

### **Objectives:**

- (1) Use a curve fitting approach with all available data overtime to develop an estimate of prevalence for pregnant women in urban and rural areas.
- (2) Adjust the median HIV-1 prevalence in non-urban sites down by 20% because of under representation of remote rural clinics.
- (3) Assume that HIV – 1 prevalence in pregnant women is a good proxy for prevalence in all adults aged 15 – 49 years.
- (4) Calculate the national estimates of HIV-1 prevalence by weighting urban and rural estimates.
- (5) Assume that the female to male ratio of HIV – 1 prevalence is 1.2 to 1
- (6) Calculate HIV-1 prevalence in men and women from the national estimate.



**Methodology:**

Estimates were based on data generated by surveillance systems that focus on pregnant women attending sentinel antenatal clinics. The six step method and documentary review was also used to estimate HIV-1 prevalence in adults from 3 national surveys and compare the findings with those from the sentinel surveillance.

**Results:**

**There were discrepancies in estimates in three countries due to the representatives of the sample used and the existence of non-responses to a large extent.**

**Conclusion:**

There is no gold standard methodology to estimate or measure national HIV – prevalence since national based surveys represent a much wider proportion of the population than do antenatal clinics, since such surveys include men and non-pregnant women.

**Recommendation:**

Both general population surveys and sentinel surveys are complimentary approaches used for HIV –1 estimate.

**04.0 Title: The Contribution of Reproductive Health Services to the Fight against HIV/AIDS: A Review.**

*Authors: Ian Askew; Marge Berer*

*Source: Reproductive Health Matters 2003;11(22): 51-73.*

**Objective:**

To review and assess the contributions made to date by sexual and reproductive health services to HIV/AIDS prevention and treatment mainly by services for family planning, sexually transmitted infections and antenatal and delivery care.

**Methodology:**

Review and assessment of the health sector to its contribution to sexual and reproductive health programmes was conducted. Especially in leadership and guidance in providing information and counseling to prevent these forms of transmission and more recently to undertake some aspects of treatment.

**Results:**

Approximately 80% of HIV cases are transmitted sexually and a further 10% perinatally or during breastfeeding. Other sexual and reproductive health problems experienced by HIV-positive women were the need for abortion services, infertility services and cervical cancer screening and treatment.

**Conclusion:**

This paper show that sexual and reproductive health programmes can make an important contribution to HIV prevention and treatment and that STI control is important both in sexual and reproductive health and HIV control.

**Recommendation:**

More integrated programmes of sexual and reproductive health care and STI/HIV/AIDS control should be



developed jointly to offer required services. Hence expand outreach to new population groups and create well-functioning referral links to optimize the outreach and impact of what are to date essentially vertical programmes.

## **05.0 Prevalence and Clinical Presentation of HIV Infection Among Newly Hospitalised Surgical Patients At Muhimbili National Hospital, Dar es salaam.**

*Authors:* C. Mkony, G. Kwasigabo, G., E. Lyamuya, F. Mhalu

*Source:* East African Medical Journal 2003 December; 80 (12): 640 -645

### **Objective:**

To determine the prevalence of HIV infection and associated clinical and demographic features among hospitalized surgical patients at Muhimbili National Hospital

### **Methodology:**

Consecutive newly admitted patients were tested for HIV antibodies using Elisa algorithm after pre-test counseling. Data were coded, entered, cleaned and analyzed to determine the prevalence of HIV infection and relationships of sero-status with clinical and socio-demographic characteristics.

### **Results:**

A total of 1,534 patients were admitted to surgical wards during the study. Of these 1031(67.2%) consented to HIV testing after pre-test counselling. The overall age-adjusted HIV prevalence was 10.5%. The highest age-specific HIV prevalence was in the age group 35–44 years at 27.9%. No one was infected in the age group 0–4 years. Difference in prevalence between age groups were statistically significant ( $P<0.0001$ ). Patients with granulomatous and supportive infections had HIV prevalence of 28.3% Twenty of 124 sero-positive patients (16.1%) died in hospital compared to 58 of 907 (6.4%) of sero-negative patients ( $p =0.0001$ ).

### **Conclusion**

The overall HIV prevalence in hospitalized surgical patients with infective conditions had the highest HIV prevalence. HIV sero-positive patients were associated with higher hospital mortality than sero-negative patients.

### **Recommendation:**

Counselling should be intensified and adopted in all hospitals in order to provide adequate services to patients.

## **06.0. TITLE: A review of studies of sexual behaviors of school students in sub – Saharan Africa.**

*Authors:* Kaaya S.F., Flisher A.J., Mbwambo J.K., Schaalma H., Aaro L. E., Klepp K.I.

*Source:* Scand J. Public Health, 2002; 30 (2): 148 – 60

### **Objective:**

To describe what is known in sexual behaviour among school students in Sub- Saharan Africa and identify gaps in Knowledge.

**Methodology:**

Literature search using electronic databases and a thumb search of relevant journals reporting sexual behaviors of school – based young persons aged between 14 and 24 years.

**Results:**

The findings indicate a relatively low number of articles when one considers the scope of the problems related to adolescent sexual behavior in the region; high prevalence rates of sexual intercourse; infrequent use of condoms and other contraceptives; and significant proportions of adolescents who have two or more lifetime sexual partners.

**Conclusion:**

Adequate information is needed with regard to cultural influences on behaviors, the sensitivity of such research in adolescent populations and the opportunity afforded by school systems for intervention addressing sexual behaviors of school students.

**Recommendations:**

There is a need for additional exploratory and methodological studies on sexual behavior of school students. Placing such information firmly within socio – cultural contexts in which young people are raised with better information effective intervention that both delay the on set of sexual intercourse and encourage use of risk reduction strategies is needed.

**07.0 Title: Dropouts in a long-term follow-up study involving voluntary counseling and HIV testing: Experience from a cohort of police officers in Dar es Salaam Tanzania.**

**Authors:** Mugusi FM., Josiah R. Moshi A., Chale S., Bakari M., Aris E., Magao P., Pallangyo N., Sandstrom E., Biberfed G., Mhalu F., Pallangyo K.

**Source:** J Acquir Immune Defic Syndr 2002 May 1; 30 (1): 119 – 23.

**Objectives:**

- To determine characteristics of study participants who withdrew from ongoing study of police officers, which involved counselling and HIV testing and to determine reasons for their discontinued participation.

**Methods:**

Demographic characteristics of a cohort of police officers who had been participating in a study to determine their suitability for HIV vaccine trials were analyzed. Characteristics of those who did not return for the second survey of appointments for HIV testing were compared with those who continued their participation.

**Results:**

Of eligible police officers, 2087 (72.1%) responded to the call for follow up appointments, where as 807 (27.9%) did not return. Those who did not return to participate in the 2nd survey had significantly higher rate of HIV. The rate of return in unmarried participants was worse than the rate among married participants. Reason for dropping out of the study included fear of knowing results of HIV testing in 54.6%, lack of time to continue in 34.5% and fears about job security in 3.6%



**Conclusion:**

Fears of finding out that one might be seropositive need to be answered at recruitment and practical arrangements must be made to facilitate further follow up.

**Recommendation:**

A bias for lower incidence might be introduced in vaccine trials if participants thought to be at highest risk for HIV infection discontinues participation.

**08.0 Title: A Study Report on Youth/Adolescents perceptions on reproductive services and rights: Iringa Municipality, Tanzania**

**Authors:** G. K. Lwihula, John Simbawaka., Nelson Cheiza., Useli Kisese.

**Source:** Consultancy Report to UMATI Youth/Reproductive Rights Advocacy Project (ARRA), 2001.

**Objectives:**

To conduct a survey on adolescents, assessing the hampered by lack of primary health care (PHC) facilities which would act as centres for Sexual Reproductive Health (SRH).

**Methodology:**

Participatory learning approaches methods on Adolescent Reproductive Rights and advocacy was used that may assist in implementing monitoring and evaluation.

**Results:**

The findings indicated that, youth had little knowledge and skills towards their sexual reproductive rights. Also Youth-friendly services were lacking because some service providers have no specific skills about the SRH..

**Conclusion:**

SRH services among the youth are still not optimum

**Recommendations:**

More interventions are required to improve SRH services and skills among youth.



## Annex 1: Prevalence of HIV infection among pregnant women attending ANC

<i>Site</i>	<i>1985</i>	<i>1986</i>	<i>1987</i>	<i>1988</i>	<i>1989</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>
Kagera (Bukoba Town)						22.20	20.00	27.70	16.10	17.30	13.70			7.00	12.50		8.50	
Magomeni (Dar es Salaam)	3.70		7.80	8.90	9.00	10.30	11.00	16.10	13.80	12.20	13.00	13.70						
Dar-es-Salaam (Kasorobo-Temeke)						10.30		15.30	7.30				15.30	14.30	10.00			
Dar-es-Salaam (Kigamboni-Temeke)														14.10	10.10	12.00		
Dar es Salaam (Buguruni - Ilala)																	16.40	
Dar es Salaam (Oysterbay - Kinondoni)																	11.00	
Kilimanjaro (Majengo)																	7.60	
Musoma regional hospital (Mara)						5.90	6.50	7.70										
Mara (Nyasho)						9.00	7.00	8.00			7.20							
Mbeya (Kwanjampaka)	7.00	10.60				17.00	22.30	19.50	17.00	22.50	20.50	23.00	23.30			17.90		
Mbeya (Kyela)		21.20	14.60	17.50	30.40	27.20	27.50	33.30	25.90	25.00	24.00	29.50	21.60			17.20		
Mbeya (Mbazi)								15.00	13.90	17.00	24.00					19.00		
Mbeya (Metta)		10.30	16.90			25.00	13.70	16.00	14.60	17.90	12.50	13.50	17.00					
Mbeya(Ruanda)									24.00	18.10	18.80	17.50	20.70					
Mbeya (Mwanjelwa)		11.00	7.30			11.00	23.30	19.60										
Mtwarra (Ligula)																12.50		
Mtwarra (Tandahimba)																4.00		
Mwanza (Igomia)																13.80		
Mwanza (Kisesa)																10.80		
Mwanza (Makongoro)	8.00	11.70	12.30	11.20	10.00	12.30	11.70	8.90								16.40		
Rukwa (Sumbaw anga)							12.00	23.30		22.20	21.00							
Rukwa (Namanyere)							11.30	8.30	19.00	11.20	11.20							
Ruvuma (Songea)							9.70	16.10	15.70	14.20	11.00							
Dodoma (Makole)																9.80		
Iringa (Mafinga)							21.00	25.00										
Ruvuma (Namtumbo)							3.50	6.70	3.20	5.60	4.00							
Dodoma (Handali)																0.50		

**Annex 1: Prevalence of HIV infection among pregnant women attending ANC (continued)**

Site	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Mbeya (Chimala)			4.20	6.30	8.80	9.50	8.00	10.80	16.00	10.50	17.00	15.90	12.50	12.10	15.20		17.10	
Kagera (Katoro)																	3.00	
Kagera (Kimoya)																	6.10	
Kagera (Nkwendwa)																	3.90	
Dodoma (Bahi)																	1.20	
Dodoma (Kibaigwa)																	11.00	
Kilimanjaro (Umbwe)							2.30	6.40					9.10	10.00	20.00	19.20	16.60	
Kilimanjaro (Masama)																	8.80	
Kilimanjaro (Hedaru)																	2.30	
Mbeya (Ilembo)																	5.50	
Mbeya (Isoko)			2.90	2.00	2.40	6.60	18.00	8.50	8.00	10.30	7.20	8.10	10.20	19.10	13.50		7.10	
Mbeya (Itele)			1.70	9.10	6.40	3.90	5.30	15.50	5.10	14.80	5.60	14.80	11.80	11.60	23.30			
Mbeya (Mwanbani)						12.00	8.50	12.90	8.00	10.70	13.00	17.50	16.00	13.70	14.50	11.00	13.00	
Mtwarra (Mangaka)																	4.30	
Mtwarra (Nany amba)																	4.00	
Mwanza (Igekemaja)																	4.20	
Mwanza (Mkula)																		
Ruvuma (Madaba)																		



