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MINISTRY OF HEALTH

Tanzania Mainland



National AIDS Control Programme

HIV/AIDS/STI Surveillance Report

January - December 2000

Report Number 15

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Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
ANC	Ante-Natal Clinic
ELISA	Enzyme Linked Immunosorbent Assay
EPTB	Extra pulmonary tuberculosis
GDS	Genital Discharge Syndrome
GUD	Genital Ulcer Disease
HIV	Human Immunodeficiency Virus
IDC	Infectious Diseases Clinic
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)
NIMR	National Institute for Medical Research
PID	Pelvic Inflammatory Disease
RPR	Rapid Plasma Reagin
STDs	Sexually Transmitted Diseases
STIs	Sexually Transmitted Infections
TANESA	Tanzania-Netherlands Project to Support HIV/AIDS Control in Mwanza Region
TB	Tuberculosis
TPHA	<i>Treponema pallidum</i> 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
PYAR	Person-years at risk

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Distribution of the report

This report is distributed for use by all sectors as well as individuals and agencies involved in the control and prevention of HIV/AIDS/STDs.

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EXECUTIVE SUMMARY

This report provides an account of the magnitude and trend of HIV/AIDS/STDs in Mainland Tanzania for the annual year January to December 2000.

A total of 11,673 AIDS cases were reported to the NACP from the 20 regions of Tanzania Mainland. This added to a cumulative total of 130,386 cases since 1983 when the first AIDS cases were diagnosed in Tanzania. NACP estimates that only 1 out of 5 AIDS cases are reported. Thus, about 60,000 AIDS cases are estimated to have occurred in 2000 alone and a cumulative total of 660,000 AIDS cases since the beginning of the epidemic in the country.

Males and females were equally affected but the peak number of AIDS cases in females was at the age 25 – 29 years while most affected males were in the age group 30 – 34 years in men. Generally, the data indicate that females acquire HIV infection at an earlier age compared to males, assuming a similar incubation period for both sexes. Also the data demonstrate that most individuals acquire infection during late adolescence assuming an incubation period of about ten years.

The main mode of transmission remains heterosexual, accounting for 77.2% of all cases. Of all cases diagnosed during the year, 44.2% were married people while 24.2% were single individuals. The marital status of the remaining cases were divorced (6.6%), separated (4.2%), cohabiting (1.9%) and widow (1.3%). For about 12.6% of cases, the marital status was not stated.

A total of 6,505 antenatal clinic attendees were recruited from 25 clinics during the reporting year. Prevalence of HIV infection among the pregnant women screened ranged from 4.2% (95% CI = 1.0-12.7) in Mwanza to 32.1% (95% CI = 24.9-40.1) in Iringa. Prevalence continued to fluctuate within sites showing no specific trend. The Bukoba Urban site, which for the past 9 years had shown a decreasing trend in prevalence, had an upward trend in 2000. However, this observation is a single event and its significance needs to be confirmed.

A total of 128,595 individuals donated blood. The overall prevalence among blood donors for the year 2000 was 9.9% (95% CI = 9.7-10.1). As in the past years, prevalence among males was significantly lower than that among females 9.2% (95% CI = 9.0-9.4) versus 13.3% (95% CI = 12.8-13.7) respectively. Prevalence among those whose sex was not specified was 15.7% (95% CI = 10.5-22.6). Extrapolating these rates to the Tanzania Mainland adult population, 1,810,353 persons aged 15 years and above, (690,779 males and 1,119,574 females) were living with HIV. Of these 1,506,703 (561,258 males and 945,445 females) were in the age group 15 to 49 years. Furthermore, out of 800,000 women who delivered in health care facilities countrywide during the reporting year, 106,400 (13.3%) were infected with HIV.

Data from IDC STD clinic in Dar Es Salaam collected from January to December 2000 indicate that prevalence of HIV infection among 552 STD patients who requested VCT services was 44.2%. Prevalence among 428 GUD patients was 46%. Of those two categories of patients, 198 were youths, 15 - 24 years old. HIV infection prevalence among them was 16.2%.

During the year, a total of 1974 women attending sentinel surveillance antenatal clinics for the first time for any pregnancy were screened for syphilis infection. The prevalence of syphilis ranged from 0.0% in Namanyere, Nkasi district and Umbwe in Moshi rural district to 11.5% in Kibara, Mara region. Generally, data from various sites have revealed a decreasing trend in syphilis infection over the past 10 years from 1990 to 2000.

In the year 2000, a total of 149,222 new STI episodes were reported. Genital Discharge Syndrome remained the commonest form of STI for both sexes, but it was significantly more prevalent among females compared to males. The age group 20-29 years had the highest prevalence of STIs including syphilis when compared to other age categories. The number of new clients counseled in the year 2000 was the highest for the past four years. However, only half of them were eventually tested for HIV, suggesting the need for further improvement of VCT services.

1.0 SURVEILLANCE OF AIDS CASES

Methods

AIDS cases diagnosed by hospitals in the country are reported to the National AIDS Control Programme (NACP). Reporting is done using forms distributed to all hospitals through the regional medical officers. Information collected include name of reporting hospital, district of usual residence, socio-demographic characteristics of the diagnosed case, case definition criteria used to make the diagnosis, possible source of infection and whether or not an HIV test was done. Hospitals return dully-filled forms to the RMO monthly, for subsequent transmission to the NACP quarterly.

Distribution of AIDS cases

Between 1st January and 31st December 2000, a total of 11,673 cases were reported to the NACP from the 20 regions of Tanzania Mainland. This resulted into a cumulative total of 130,386 cases since 1983 when the first AIDS cases were diagnosed in Tanzania. Table 1 and Figure 1 show the age and sex distribution of the reported AIDS cases for the year 2000. As in the previous year, most cases fall within the age group 20-49 years with highest number of reported cases in the age group 25-34 and 30-39 for females and males respectively. This pattern suggests that most individuals acquiring infection during late adolescence assuming an incubation period of around ten years. This pattern may however change with greater coverage in voluntary counseling and testing (VCT) coupled with the use of antiretroviral therapy. Figure 2 shows the age and sex specific cumulative case rates from 1987-2000. The figure, as in the previous year (1) shows that males generally have a higher case rate than females particularly for the age groups 30 years and above.

Table 1: Distribution of Reported AIDS cases by age and sex during 2000

	Male	Percents	Female	Percents	Unknown	Percents	Total	% total
0 - 4	209	3.7	182	3.2	42	15.3	433	3.7
5 - 9	69	1.2	70	1.2	16	5.8	155	1.3
10 - 14	44	0.8	52	0.9	2	0.7	98	0.8
15 - 19	81	1.4	198	3.5	2	0.7	281	2.4
20 - 24	389	6.8	812	14.2	6	2.2	1207	10.3
25 - 29	741	13.0	1236	21.6	13	4.7	1990	17.0
30 - 34	1091	19.2	1143	20.0	5	1.8	2239	19.2
35 - 39	890	15.7	868	15.2	9	3.3	1767	15.1
40 - 44	708	12.5	473	8.3	5	1.8	1186	10.2
45 - 49	425	7.5	232	4.1	4	1.5	661	5.7
50 - 54	196	3.5	120	2.1	1	0.4	317	2.7
55 - 59	99	1.7	54	0.9	1	0.4	154	1.3
60 - 64	84	1.5	42	0.7	0	0.0	126	1.1
65+	77	1.4	60	1.0	2	0.7	139	1.2
Unknown	577	10.2	177	3.1	166	60.6	920	7.9
Total	5680	48.7	5719	49	2.3	100.0	11673	100.0

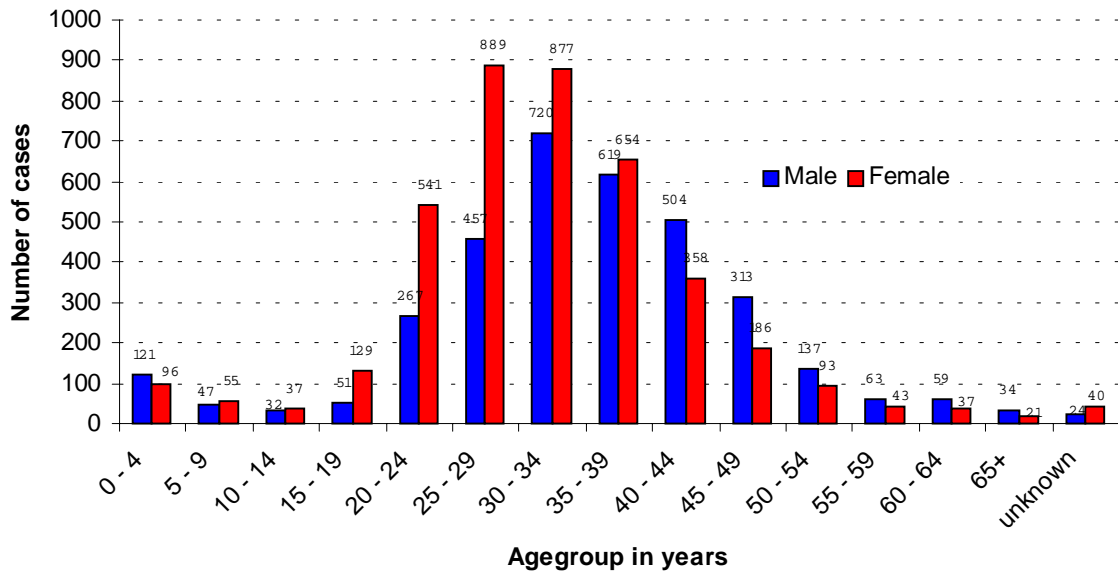


Figure 1: Age and sex distribution of the reported AIDS cases, January - December 2000

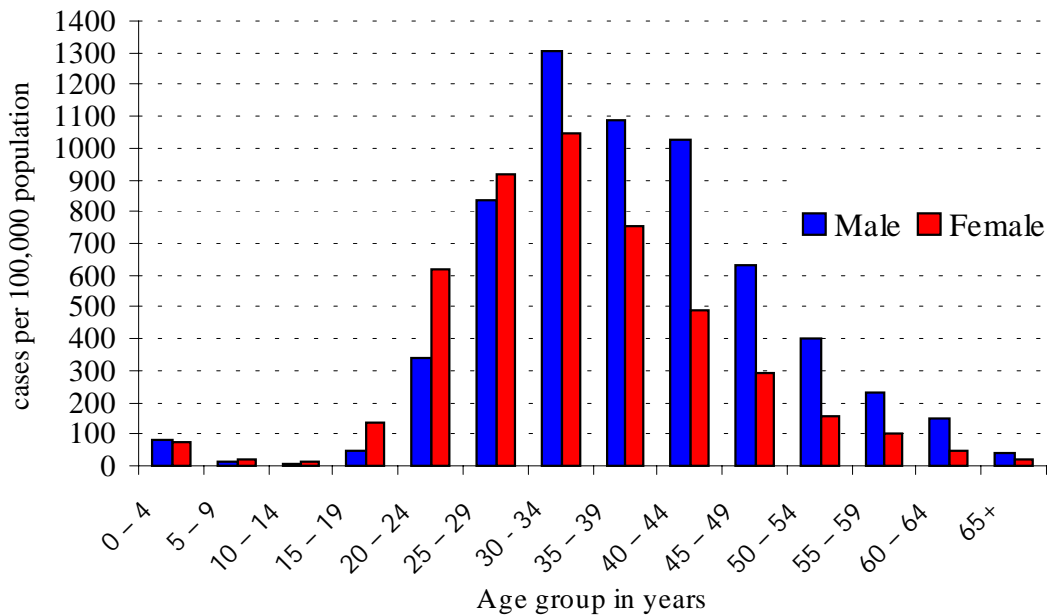


Fig 2: Age and Sex Distribution of Cumulative AIDS cases, 1987 -2000

Table 2: Distribution of cumulative AIDS cases by age and sex, 1987 – 2000

Age	MALE				FEMALE				TOTAL				
	Cases	%	Population Year 2000 estimates	Case rate*	Cases	%	Population Year 2000 estimates	Case rate	Unknown sex cases	Cases	%	Population Year 2000 estimates	Case rate
0 – 4	2274	4.4	2743829	82.9	2024	3.9	2788203	72.6	59	4,357	4.13	5532032	78.8
5 – 9	434	0.8	2571073	16.9	478	0.9	2570298	18.6	31	943	0.89	5141371	18.3
10 – 14	213	0.4	2186105	9.7	279	0.5	2177319	12.8	2	494	0.47	4363424	11.3
15 – 19	777	1.5	1748916	44.4	2485	4.8	1854316	134.0	9	3,271	3.10	3603232	90.8
20 – 24	3988	7.8	1175663	339.2	9265	17.8	1497572	618.7	26	13,279	12.59	2673235	496.7
25 – 29	9504	18.5	1141430	832.6	12427	23.9	1359226	914.3	57	21,988	20.85	2500656	879.3
30 - 34	10825	21.0	828312	1306.9	9746	18.7	932765	1044.9	61	20,632	19.56	1761077	1171.6
35 – 39	8052	15.7	739082	1089.5	6053	11.6	802932	753.9	42	14,147	13.41	1542014	917.4
40 – 44	5390	10.5	525279	1026.1	2969	5.7	602542	492.7	21	8,380	7.94	1127821	743.0
45 – 49	3203	6.2	506111	632.9	1526	2.9	522402	292.1	24	4,753	4.51	1028513	462.1
50 – 54	1652	3.2	409690	403.2	725	1.4	470175	154.2	5	2,382	2.26	879865	270.7
55 – 59	792	1.5	341411	232.0	320	0.6	321567	99.5	4	1,116	1.06	662978	168.3
60 – 64	441	0.9	292776	150.6	167	0.3	332997	50.2	4	612	0.58	625773	97.8
65+	311	0.6	722266	43.1	148	0.3	680091	21.8	4	463	0.44	1402357	33.0
Unknown	3590	7.0			3429	6.6			1645	8,664	8.21		
Total	51,446	100.0	15,931,943	322.9	52,041	100.0	16,912,405	307.7	1,994	105,481	100.00	32,844,348	321.2

Case rate = cases/100,000

Marital status and possible sources of infection for the reported AIDS cases during the year 2000 were analysed. Figure 3 shows marital status of the reported cases. Most cases reported to be married, a quarter of the cases were reported to be single and those divorced or separated add up 10% of the total cases. Married individuals were likely to become patients than any other marital status category. Heterosexual transmission (77.2%) remained the major mode of acquisition of HIV infection among the reported cases. Ninety-four percent of cases were above 15 years of age.

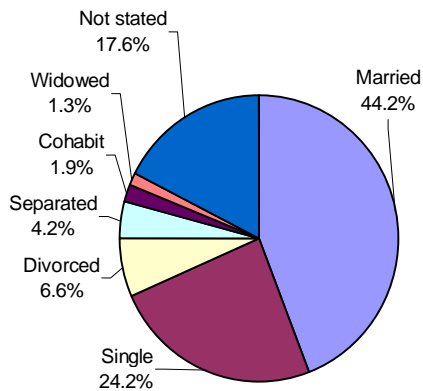


Figure 3: Marital status of reported AIDS cases for the year 2000

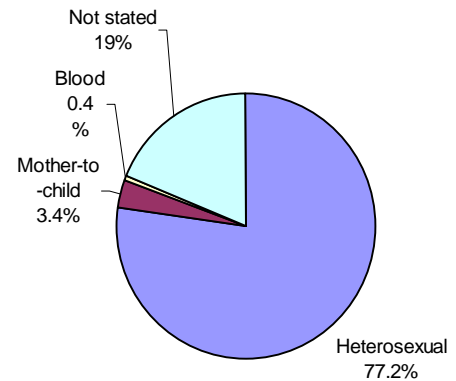


Figure 4: Possible sources of infection for the reported AIDS cases for the year 2000.

Tables 3a, b and c show the cumulative number of cases and case rate by region for the past 17 years (1983-2000). The total population by region for the year 2000 has been projected from the 1988 population census adjusted for growth rate (2). 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 5 AIDS cases are reported due to underutilization of health services, under-diagnosis, under-reporting and delays in reporting. Despite these limitations however, the data is believed to reflect the trend of AIDS cases in the country. According to the 2000 data, the region with the highest cumulative case rate was Mbeya followed by Dar Es Salaam and Coast in that descending order. The region with the lowest case rate was Mara. In contrast to the observed regional distribution of reported AIDS cases, regions showing the highest seroprevalence among blood donors were Kagera, Mbeya and Morogoro with rates of 19.9%, 10% and 16.6%, respectively.

Table 3(a): Cumulative AIDS Cases by region and year 1983 – 1992

<i>Region</i>	<i>YEARS</i>									
	<i>1983</i>	<i>1984</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>
Arusha	0	0	0	10	47	217	433	647	1,117	1,637
Coast	0	0	1	4	79	224	465	938	1,676	2,215
Dar Es Salaam	0	0	51	471	1,470	3,093	5,209	7,246	8,834	9,259
Dodoma	0	0	0	7	47	105	262	310	536	762
Iringa	0	0	1	3	68	305	374	728	2,281	3,334
Kagera	3	106	322	847	1,666	2,143	2,576	3,472	4,742	5,813
Kigoma	0	0	0	3	50	109	244	607	930	1,556
Kilimanjaro	0	1	8	36	207	455	571	966	2,060	3,707
Lindi	0	0	0	1	10	46	113	484	842	1,211
Mara	0	0	0	3	30	99	141	280	639	980
Mbeya	0	0	0	16	208	751	1,077	3,890	6,924	9,890
Morogoro	0	0	0	11	88	254	364	637	2,398	3,598
Mtwara	0	0	1	5	26	90	199	479	1,361	1,968
Mwanza	0	0	15	54	171	448	667	1,303	3,041	4,207
Rukwa	0	0	0	1	5	98	94	140	261	496
Ruvuma	0	0	0	20	46	81	210	571	1,197	1,807
Shinyanga	0	0	0	8	31	144	238	583	1,278	496
Singida	0	0	0	6	74	197	284	456	763	1,807
Tabora	0	2	5	6	59	232	525	927	1,400	1,972
Tanga	0	0	0	13	80	210	210	838	1,914	2,636
Unspecified	-	-	-	-	-	-	-	1	1	1
TANZANIA	3	109	404	1,525	4,462	4,462	9,301	25,503	44,195	60,066

Table 3(b): Cumulative AIDS Cases by region and year, 1993 – 2000

<i>Region</i>	<i>YEARS</i>								<i>Population</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>	
Arusha	2,185	2,368	2,615	2,787	3,244	3,567	3,948	4,196	2027878
Coast	2,740	3,023	3,268	3,559	3,796	4,266	4,375	5,348	828823
Dar Es Salaam	10,406	11,050	11,302	12,983	13,899	14,517	14,643	16,053	2233914
Dodoma	1,028	1,294	1,608	1,938	2,517	2,641	2,748	2,941	1648148
Iringa	4,462	4,674	4,785	4,883	5,008	5,031	5,076	5,179	1657596
Kagera	6,646	7,064	7,223	7,426	7,671	7,881	8,310	8,529	1867568
Kigoma	1,920	2,070	2,257	2,280	2,426	2,481	2,613	2,732	1178947
Kilimanjaro	4,699	5,119	5,513	5,991	6,618	7,375	7,766	8,088	1973548
Lindi	1,691	1,966	2,173	2,480	2,712	3,074	3,559	4,155	832386
Mara	1,304	1,393	1,486	1,486	1,486	1,515	1,634	2,021	1355483
Mbeya	11,439	12,214	12,371	14,685	16,835	19,949	23,688	26,952	2098276
Morogoro	4,328	4,575	4,903	5,189	5,438	5,534	5,863	6,388	1708172
Mtwara	2,090	2,201	2,267	2,444	2,569	2,843	3,000	3,262	1084961
Mwanza	5,349	5,731	5,974	6,365	7,006	7,384	7,884	8,338	2553121
Rukwa	715	777	801	882	1,227	1,359	1,621	1,997	1090641
Ruvuma	2,480	2,847	3,087	3,345	3,752	4,260	4,760	5,406	1133648
Shinyanga	2,624	3,062	3,361	3,824	4,217	4,515	4,861	5,440	2474984
Singida	1,472	1,688	1,908	2,135	2,167	2,262	2,329	2,396	1066324
Tabora	2,786	3,075	3,428	3,805	4,278	4,733	5,199	5,946	1383056
Tanga	3,207	3,475	3,793	4,062	4,278	4,632	4,792	4,975	1702375
Unspecified	1	2	44	44	44	44	44	44	
TOTAL	73,572	79,668	84,167	92,593	101,188	109,863	118,713	130,386	31,899,849

Table 3(c): Cumulative AIDS Cases by region and year 1999 – 2000

REGION	Cumulative case rate **	1999 cases	Case rate for 1999	Cases for 2000	Case rate for 2000
Arusha	206.9	381	19.4	248	12.2
Coast	645.3	109	13.6	973	117.4
Dar Es Salaam	718.6	126	5.8	1,410	63.1
Dodoma	178.4	107	6.7	193	11.7
Iringa	312.4	45	2.8	103	6.2
Kagera	456.7	429	23.7	219	11.7
Kigoma	231.7	132	11.5	119	10.1
Kilimanjaro	409.8	391	20.4	322	16.3
Lindi	499.2	485	60.1	596	71.6
Mara	149.1	119	9.0	387	28.6
Mbeya	1284.5	3,739	183.7	3264	155.6
Morogoro	374.0	329	19.9	525	30.7
Mtwara	300.7	157	14.9	262	24.1
Mwanza	326.6	500	20.2	454	17.8
Rukwa	183.1	262	24.8	376	34.5
Ruvuma	476.9	500	45.5	646	57.0
Shinyanga	219.8	346	14.4	579	23.4
Singida	224.7	67	6.5	67	6.3
Tabora	429.9	466	34.7	747	54.0
Tanga	292.2	160	9.7	183	10.7
TOTAL	408.7	8,850	28.6	11,673	36.6

2.0 SURVEILLANCE OF HIV INFECTION

2.1 SURVEILLANCE POPULATION I: ANTENATAL CLINIC ATTENDEES

Methods

Sentinel surveillance utilizing antenatal clinic attendees was established in 1990 when 24 sites were established in 11 out of the 20 regions of Tanzania mainland. Currently most of these sites are no longer in operation and have been replaced by new ones. In order to strengthen this form of surveillance the NACP with effect from the year 2001 will establish four sentinel sites in each of the six selected regions in the country. These regions will be sampled to represent various geographical areas of the country. Four sites in every region will be selected to represent one urban site, one semi-urban or roadside site and two rural sites. Sites already in existence in the selected areas will continue to collect this information, and new ones will be established in areas where no such services exist. To allow for national and international comparability, the NACP maintains uniformity in the procedures for sampling and HIV testing technique in line with the World Health Organization (WHO) recommendations for surveillance of HIV infection.

Pregnant women attending the antenatal clinic for the first time for a particular pregnancy at a sentinel site constitute the surveillance population. A blood sample drawn for routine estimation of haemoglobin and syphilis screening is subjected to unlinked anonymous HIV testing using an ELISA testing algorithm.

HIV prevalence from Antenatal Clinic Sentinel Sites

A total of 6,505 antenatal clinic attendees were recruited from 25 sites for the year 2000. Table 4 shows the prevalence of HIV infection from various antenatal clinic sentinel surveillance sites throughout the country for the period of 1992 to 2000. Prevalence for the year 2000 ranged from 4.2% (95% CI = 1.0-12.7) in one site in Mwanza to 32.1% (95% CI = 24.9-40.1) in Iringa (Ipogoro site). Of the 28 reporting sites countrywide, 22 (78.6%) had HIV prevalence of >10%. Prevalence continues to fluctuate within sites showing no specific trend. The Bukoba Urban site which for the past 9 years had a decreasing trend, registered an upward surge in the year 2000. The relevance of this single observation of an upward tendency in 2000 needs to be ascertained by further studies. As shown in Table 5, the age specific HIV prevalence among antenatal clinic attendees for the year 2000 was highest in the younger age groups 14-24 years and 25-34 years. The high age specific prevalence in the age group 14-24 years is an indicator of high incidence of HIV infection in the respective surveillance communities.

Table 4: Prevalence (%) of HIV infection among antenatal women from 1992 to 2000 (all ages)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	95% C.I
Dar Es Salaam										
Kasorobo – Temeke		15.3		7.3				15.3	14.3	10.5-19.1
Kigamboni – Temeke								14.1	10.1	7.4-13.6
** Sinza - Kinondoni								18.1		
Iringa										
Mafinga (roadside)	25.0							20.9	16.8	13.8-20.1
Ipogoro (Peri-Urban)									32.1	24.9-40.1
Iringa Reg Hospital							24.9	40.1	4.6	1.5-12.1
Mwanza										
Igekemaja									4.2	1.1-12.7
Kiseso									10.8	6.9-16.4
Welama-songa									5.0	1.6-12.8
Igoma									13.8	10.8-13.6
Makongoro									16.4	13.6-19.7
Mbeya Region (All sites)										
Mbeya rural	11.1	12.1	20.4	14.2	14.5	15.6	12.3	13.7	15.6	12.6-19.0
Isoko (Rural)					7.2	8.1	10.2	19.1	13.5	9.2-19.2
Itete (Rural)					5.6	14.8	11.8	11.6	23.3	16.3-32.1
Mwambani (Rural)					16.0	13.7	14.5	11.0	13.0	8.8-18.6
Chimala (Roadside)					17.0	15.9	12.5	12.1	15.2	10.9-21.4
Mbeya Urban	19.3	17.7	19.8	20.7	18.5	19.6	17.3	18.0	20.4	17.8-23.2
Kiwanja-Mpaka (U)					17.0	22.5	20.5	23.0	23.3	18.7-28.6
Meta (Urban)					14.6	17.9	12.5	13.5	17.0	13.1-21.9
Ruanda (Urban)					24.0	18.1	18.8	17.5	20.7	16.3-25.8
Kyela (border)					25.9	25.0	24.0	29.5	21.6	16.2-28.1
Mbozi					17.0	24.0			19.0	13.9-25.3
Morogoro										
Morogoro Reg.Hosp (Urban)									18.4	
Turiani DDH (Rural)									9.8	
Rukwa (All sites)										
Namanyere (Rural)	11.3	8.33	19.0	11.2		11.2				
Sumbawanga	12.0	23.3	31.3	22.2		21.0				
Ruvuma										
Songea (Urban)	9.7	16.1	15.7	14.2		11.0				
Namtumbo (Rural)	3.5	6.7	3.2	5.6		4.0				
Kilimanjaro										
Umbwe (Moshi Rural)	6.4				9.1	10.0	20.0	19.2	16.6	13.0-20.8
Kagera										
Bukoba Urban		16.1			13.7			7.0	12.5	9.0-17.0
Tanga										
Mlalo									2.7	1.0-6.6
Korogwe									9.3	6.1-13.6
Makorora									11.1	7.8-15.6
Maramba									6.0	3.5-9.9

Table 5: Age specific prevalence (%) of HIV infection among antenatal women from 1990-2000

	Age group	1990		1991		1992		1993		1994		1995		1996		1997		1998		1999		2000	
		N	£%	N	£%	N	£%	N	£%	N	£%	N	£%	N	£%	N	£%	N	£%	N	£%	N	£%
Mbeya Urban	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	494	18.4
	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	358	24.3
	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	47	10.6
	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	899	20.4
Mbeya Rural	14 - 24	169	9.5	337	11.3	532	8.8	608	9.7	294	15.6	367	13.6	214	13.6	274	10.6	296	12.8	286	14.3	291	11.7
	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	179	12.3	166	13.9	178	23.6
	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	51	9.8
	Total	327	10.1	543	10.7	911	10	970	9.5	522	16.5	574	15.5	393	11.5	441	11.3	517	12.4	517	13.7	520	15.6
Mbeya Roadside	14 - 24	122	17.2	139	19.4	455	11.9	474	13.5	227	27.8	242	14	239	16.7	223	19.7	247	10.9	229	10.9	208	12.5
	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	172	23.8
	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	3.9	24	16.7	20	10
	Total	223	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	400	17.3
Mbeya Boarder	14 - 24	77	23.4	25	36	169	20.1	205	30.7	117	20.5	132	36.4	135	26.7	143	24.5	149	22.8	141	27.0	134	20.2
	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	59	25.4
	35 - 49	6.0	33.3	2.0	50	26	26.9	22	13.6	5.0	40	11	27.3	8.0	12.5	8.0	12.5	6.0	16.7	3.0	33.3	6	16.7
	Total	140	25.0	44	34.1	275	25.5	352	29	166	21.7	192	34.4	193	25.9	200	25.0	200	24.0	200	29.5	199	21.6
Bukoba Urban	14 - 24	665	21.8					1560	16.1					1696	9.4					261	6.9	262	11.1
	25 - 34	518	25.1					1022	20.6					997	19.2					26	7.7	26	26.9
	35 - 49	109	18.4					234	10.7					200	13								
	Total	1292	22.2					2816	16.1					2893	13.7					287	7.0	288	12.5
Umbwe Moshi Rural	14 - 24														90	4.4	131	19.8		94	19.1	172	17.4
	25 - 34														75	16	125	20		106	19.8	159	16.4
	35 - 49														11	9.1	44	18.2		23	17.4	37	13.5
	Total														176	9.7	301	19.9		223	19.2	368	16.6

2.2 SURVEILLANCE POPULATION II: BLOOD DONORS

Methods

Blood donor screening was introduced in the country in 1987. Initially screening was done at regional and referral hospitals only, however in 1990 this activity was extended to all hospitals providing blood transfusion services in the country in order to ensure provision of safe blood. Donors are screened using either simple/ rapid tests in peripheral hospitals or ELISA test strategy in regional and referral hospitals. Test results are filled in blood donor HIV register forms made available to the hospitals from the Ministry through the regional medical office. Copies of duly filled forms are returned to the NACP for processing and reporting.

Prevalence of HIV infection

During the year 2000, a total of 128,595 individuals donated blood. Persons with age less than 15 years and those whose information on HIV test results was missing were excluded from the analysis resulting into 128,366 individuals as a basis for subsequent analysis. Of these, 107,593 (83.8%) were males, 20,619 (16.1%) were females and for 153 individuals the sex was not specified. The overall prevalence among blood donors for the year 2000 was 9.9% (95% CI = 9.7-10.1). As in the past years, prevalence among males was significantly lower than that among females 9.2% (95% CI = 9.0-9.4) versus 13.3% (95% CI = 12.8-13.7) respectively. Prevalence among those whose sex was not specified was 15.7% (95% CI = 10.5-22.6). If these rates are used to estimate the number of people living with HIV in Tanzania mainland, the estimates are that, a total of 1,810,353 persons aged 15 years and above (690,779 males and 1,119,574 females) were living with HIV in the year 2000. Of these, 1,506,703 (561,258 males and 945,445 females) were of the age group 15 - 49 years. Furthermore, out of 800,000 women who delivered in health care facilities countrywide, 106,400 (13.3%) were infected with HIV.

As regards blood donor categories, 99.8 % (128,121/128,366) were relatives of blood recipients, while 0.2% (242/128,366) were institutional donors and for 3 individuals donor category was not specified. There were no significant differences in the prevalence between donor categories ie 9.5% (95% CI = 6.2-14.1) among institutional donors and 9.9% (95% CI = 9.7-10.1) among relative donors. Smaller sample sizes however may have contributed to these differences. Institutional donors include individuals from institutions such as schools, factories, colleges etc. In Tanzania this category does not include the military and uniformed men and women.

Analysis of the blood donor data has given some reflections for the need to validate information from several sites e.g. Karagwe and Kilombero due to the possibility of occurrence of false positive results when using some simple/rapid assays in the field. This concern emanates from observation of unusually high false positive reactivities in a significant number of samples tested in these areas in recent years using capillus test.

Table 6(a): Age-specific prevalence (%) of HIV infection among male blood donors (1991 – 2000)

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

Table 6(b): Age-specific prevalence (%) of HIV infection among female blood donors (1991 – 2000)

Age	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
15 – 19	4.9	4.2	2.9	5.6	5.3	6.3	6.7	8.8	7.8	8.2
20 – 24	7.7	7.2	7.5	5.4	9.4	9.8	10.2	11.3	12.2	11.9
25 – 29	8.7	6.6	7.2	7.1	11.6	10.1	11.0	13	14.5	16.8
30 – 34	6.5	5.7	6.6	6.9	10.0	9.3	11.0	13.2	14.2	13.6
35 – 39	4.8	5.7	6.7	10.1	8.8	9.3	12.1	12.5	14.9	15.2
40 – 44	6.3	3.6	1.7	5.4	7.6	6.0	9.6	10.3	10.0	11.1
45 – 49	3.4	4.4	3.7	7.5	4.8	5.5	8.2	9.8	10.2	13.6
50 – 54	5.6	5.4	5.9	6.2	*6.3	5.6	11.2	8.8	7.0	9.5
55+	6.7	4.2	5.3	3.3	*16.7	7.1	7.6	7.8	8.8	9.7
Total	7.2	5.9	6.3	6.9	9.2	8.7	9.7	11.8	12.6	13.3

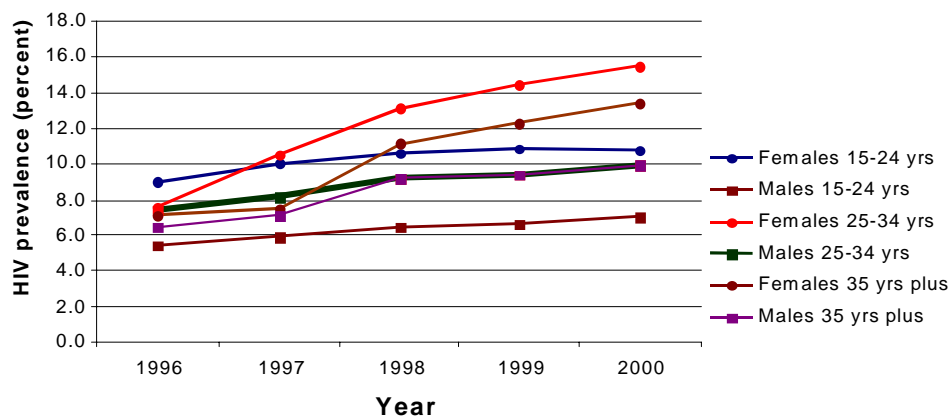


Figure 5: Age and sex specific prevalence of HIV infection among blood donors for the period 1996 - 2000

Blood donor data for the year 2000 was analysed by age and sex. Figure 5 shows the trend in age and sex specific prevalence for the period 1996 to 2000. The age specific prevalence figures for males are generally lower than those for females. The age groups 25-34 and 35 years and above among females, has the highest prevalence and shows a rising trend. Females aged 15-24 years who originally (according to the 1996 data) had the highest prevalence of HIV infection for both sexes, now have the lowest prevalence and show no evidence of an increasing trend. Although males in the same age group have remained at the lowest magnitude of infection, recent data indicates an increasing trend in this age group. Tables 6a and 6b show age and sex specific prevalence for the period 1991 to 2000. It is evident from these tables that while the highest prevalence for male is in the age group 30 – 39 for females is 20 – 39. This strengthens the observation that females tend to acquire HIV infection at a younger age compared to males.

Table 7 shows prevalence of HIV among blood donors by region and districts. It is encouraging to note that at least all the twenty regions of Tanzania Mainland submitted some blood donor screening results to the Ministry of Health during 2000. Among the 114 districts, only 87 of them reported blood donor screening results to the Ministry of Health.

Prevalence of HIV infection among blood donors in the different districts ranked from 1.5% in Kondoa district to 35.3 in Kilombero district – Morogoro region. Although blood donors are not representative of the general population, it is known that data from this surveillance group underestimates the prevalence in the general population. This limitation notwithstanding, the reported overall high prevalences of HIV infection of above 10% in key farming regions like Mbeya, Rukwa, Ruvuma and Iringa reflects the burden of disease in the respective communities which in turn has an adverse impact on agricultural activities in those regions.

Table 7: Prevalence (%) of HIV among blood donors by region and selected districts

<i>Region</i> <i>District</i>	<i>Year 1999</i>		<i>Year 2000</i>	
	<i>Total Donors</i>	<i>% prevalence</i>	<i>Total Donors</i>	<i>% prevalence</i>
Arusha	3030	22.0	7223	13.8
Arusha municipality			1372	9.1
Babati	2095	30.4	4132	19.1
Kiteto			64	10.9
Mbulu	809	3.6	1503	3.7
Monduli	112	0.0	152	11.8
Coast	3510	8.9	3160	12.5
Bagamoyo	320	5.9	463	7.8
Kibaha	1730	10.6	664	11.9
Kisarawe	112	9.8	452	19.0
Mafia	256	8.2	249	8.0
Rufiji	1092	7.1	1318	13.1
DSM	694	33.1	1739	8.6
Ilala	428	45.1	1005	9.7
Kinondoni	162	12.4	658	5.5
Dodoma	2269	5.1	3001	3.9
Dodoma municipality	1364	4.8	1129	5.6
Kondoa			797	4.9
Mpwapwa	905	5.4	1075	1.5

<i>Region</i>	<i>District</i>	<i>Year 1999</i>		<i>Year 2000</i>	
		<i>Total Donors</i>	<i>% prevalence</i>	<i>Total Donors</i>	<i>% prevalence</i>
Iringa		4258	14.7	2393	14.6
	Iringa municipality	2643	14.3	1008	14.7
	Ludewa	280	22.1	415	15.2
	Mufindi	297	8.1	301	8.9
	Njombe	1038	15.7	669	16.6
Kagera		4572	17.7	3827	19.5
	Biharamulo	428	19.6	413	8.5
	Bukoba	1615	20.7	650	12.2
	Karagwe	638	20.8	998	19.5
	Muleba	1159	15.5	1472	24.6
	Ngara	732	10.4	294	25.8
Kigoma		6860	6.4	6772	3.8
	Kasulu	4935	6.8	3503	3.5
	Kibondo	752	4.5	530	6.2
	Kigoma	1173	5.7	2739	3.8
Kilimanjaro		5218	4.8	4435	6.7
	Hai			416	10.1
	Moshi	3233	5.4	2221	6.4
	Mwanga	277	3.6	115	7.0
	Rombo	305	2.9	222	3.3
	Same	1369	4.2	1461	6.8
Lindi		7083	3.4	5092	4.2
	Kilwa	879	5.6	478	3.1
	Lindi	2788	5.1	2175	4.5
	Liwale	986	1.3	931	3.6
	Nachingwea	2430	1.6	1508	4.4
Mara		5151	9.2	10676	9.4
	Bunda	262	9.9	2416	10.7
	Musoma	2835	8.0	4230	7.6
	Serengeti	988	6.3	1335	2.9
	Tarime	1066	14.7	2695	14.3
Mbeya		6691	15.2	7338	17.0
	Chunya	865	17.8	868	19.9
	Ileje	218	13.8	211	11.9
	Kyela	750	13.6	1110	16.4
	Mbarali	1470	18.3	1683	25.4
	Mbeya	1254	16.3	1153	18.3
	Mbozi	635	16.4	566	11.1
	Rungwe	1499	10.5	1747	9.6
Morogoro		12389	11.3	7606	16.6
	Kilombero	2697	18.1	1671	35.3
	Kilosa	4435	11.7	1309	6.9
	Morogoro	4440	8.2	4072	12.1
	Ulanga	805	3.7	540	15.4
Mtwara		3030	7.8	8665	8.2
	Mtwara urban	739	4.5	139	7.2
	Masasi	2291	8.9	3725	10.1
	Mtwara rural			3182	7.2
	Newala			1619	5.7
Mwanza		10373	7.0	9858	7.6
	Geita	832	8.8	1173	7
	Kwimba	1977	4.9	1171	4.4
	Magu	1436	9.5	1243	12.6

Region	District	Year 1999		Year 2000	
		Total Donors	% prevalence	Total Donors	% prevalence
	Misungwi	372	3.2	444	5.6
	Mwanza	2561	5.8	2377	8.2
	Sengerema	2518	7.5	2868	6.5
	Ukerewe	677	10.6	558	10.0
Rukwa				3277	11.8
	Mpanda			565	12.2
	Nkasi			652	15.6
	Sumbawanga			2045	10.6
Ruvuma		8301	9.8	9813	10.2
	Mbinga	3502	7.5	3618	9.4
	Songea	3460	13.8	4605	12.4
	Tunduru	1339	5.3	1590	6.0
Shinyanga		8654	8.2	9332	9.4
	Bariadi	2676	4.2	1580	4.8
	Kahama	2534	10.2	2344	9.6
	Maswa	690	9.3	908	9.0
	Meatu	426	10.3	307	10.1
	Shinyanga	2328	9.9	4185	11.1
Singida		4187	8.1	5326	8.0
	Iramba	181	5.5	1095	12
	Manyoni	877	7.1	1864	7.4
	Singida	3129	8.6	2367	6.8
Tabora		11335	7.1	9084	7.2
	Igunga	4120	7.0	2359	7.6
	Nzega	1812	6.4	1604	5.4
	Sikonge	892	5.7	875	5.0
	Tabora	2918	7.8	2445	7.8
	Urambo	1593	7.7	1801	8.8
Tanga		10967	8.3	9749	8.8
	Handeni	1531	9.7	1296	5.3
	Korogwe	1945	9.0	1034	6.1
	Lushoto	450	22.2	811	13.2
	Muheza	2667	8.1	1712	10.2
	Pangani	621	5.5	1169	5.7
	Tanga	3753	6.3	3727	10.1

The overall HIV prevalence among male blood donors significantly increased from 8.7% (N=98,018) in 1999 to 9.2% (N=107,593) in the year 2000 ($p=0.0001$). The highest prevalence was reported from Kagera (19.5%) followed by Mbeya and Morogoro with prevalence of 15.4% and 15.2%, respectively. The lowest prevalence was reported in Dodoma where 3.7% of blood donors were found to be HIV positive (see Table 8).

Table 8: Prevalence (%) of HIV infection among male blood donors by region, 1992 - 2000

Region	1992	1993	1994	1995	1996	1997	1998	1999	2000
Arusha	2.6	2.6	2.7	6.1	3.0	2.8	4.2	21.3	13.4
Coast	4.1	5.9	6.6	5.5	9.4	8.2	7.7	7.5	10.1
Dodoma	2.8	1.7	0.0	0.0	4.9	7.9	4.9	5.0	3.7
DSM	8.5	-	-	4.9	17.2	19.8	12.5	23.8	8.3
Iringa	11.1	13.2	7.7	13.0	14.2	14.2	14.8	14.7	13.7
Kagera	10.9	5.8	7.9	10.8	8.0	8.6	14.8	17.3	19.5
Kigoma	1.9	7.0	3.4	4.9	5.6	2.8	3.8	6.3	3.9
Kilimanjaro	2.4	3.4	1.5	10.7	4.1	4.1	4.8	4.7	6.2
Lindi	3.7	2.5	-	3.0	3.7	3.0	3.3	3.3	3.9
Mara	6.9	5.0	3.7	5.8	7.6	8.0	7.6	8.6	8.7
Mbeya	15.1	0.0	-	9.0	11.1	12.6	13.0	13.6	15.4
Morogoro	4.6	5.7	-	-	4.1	5.5	7.4	10.3	15.2
Mtwara	5.2	9.5	15.2	10.1	9.7	4.5	8.0	7.0	7.3
Mwanza	5.1	4.0	2.9	12.5	7.6	9.5	6.9	6.2	7.2
Rukwa	6.7	-	-	-	8.0	7.9	-	-	11.5
Ruvuma	6.2	7.3	2.0	3.3	8.1	7.7	7.4	9.8	9.5
Shinyanga	6.1	6.4	14.7	11.7	8.5	8.5	8.0	7.7	9.0
Singida	2.7	2.8	0.0	-	5.6	3.6	6.2	7.7	7.5
Tabora	2.8	4.4	2.5	6.2	3.2	6.1	5.9	6.8	6.8
Tanga	7.1	4.4	-	10.4	5.5	8.0	7.3	7.9	8.7
Total	5.3	5.9	6.9	7.8	6.8	7.6	8.5	8.7	9.2

Female blood donors showed a higher overall HIV prevalence than that found in men. In 2000, HIV prevalence in female blood donors was 13.3% while that for males was 9.2%. Like for males, there was a tendency for the prevalence among females to increase significantly when the 1999 rate is compared to that of the year 2000 i.e. 12.6% versus 13.3% ($p=0.03$). The highest prevalences were reported from Mtwara and Coast regions, which had rates of 25.2% and 25.1%, respectively. The same regions that had high prevalences among male blood donors have also high rates among female blood donors, but the rates for females are much higher compared to their male counterparts. Table 9.

Table 9: Prevalence (%) of HIV Infection among female blood donors by region, 1992 – 2000

Region	1992	1993	1994	1995	1996	1997	1998	1999	2000
Arusha	2.2	3.9	-	15.6	4.4	6.0	7.6	25.2	15.1
Coast	5.0	10.2	11.8	9.2	-	8.0	13.1	15.8	25.1
Dodoma	4.8	-	-	0.0	-	9.2	6.2	6.7	5.3
DSM	7.7	-	-	6.7	-	40.6	32.1	55.0	14.9
Iringa	8.1	17.6	20.0	7.8	12.4	16.4	15.1	14.4	20.8
Kagera	11.0	8.6	8.3	14.3	7.4	11.3	14.3	19.0	19.5
Kigoma	4.1	5.8	5.1	0.0	6.1	2.6	2.6	6.6	3.6
Kilimanjaro	2.2	1.8	2.9	0.0	5.9	8.1	8.1	6.6	11.4
Lindi	2.3	1.9	-	1.6	3.6	4.9	5.2	4.3	5.8
Mara	8.2	2.9	10.0	9.4	10.1	13.1	7.7	10.2	10.7
Mbeya	20.3	-	-	11.4	13.8	14.4	15.1	19.3	20.9
Morogoro	5.7	10.8	-	-	6.0	9.1	8.8	16.0	24.2
Mtwara	10.5	5.7	0.0	5.6	10.5	-	23	21.3	25.2
Mwanza	5.7	8.0	5.0	0.0	8.5	11.8	9.5	10.6	9.5
Rukwa	0.0	-	-	-	8.8	-	-	-	16.0
Ruvuma	6.4	6.7	2.1	6.1	10.5	12.7	12.2	11.8	12.7
Shinyanga	10.0	21.6	33.3	0.0	14.9	14.9	14.6	12.9	13.6
Singida	4.5	4.6	0.0	-	5.8	5.2	7.0	9.4	10.4
Tabora	2.7	5.8	0.0	12.9	3.2	7.7	9.5	8.8	9.3
Tanga	7.0	5.9	-	20.8	7.0	13.6	11.9	14.0	11.2
Total	5.9	6.2	4.8	9.4	8.2	11.6	11.8	12.6	13.3%

Generally, throughout the country, higher HIV prevalences were documented in younger age groups especially in age groups 15 – 24 and 25 – 34 years. For the year 2000, the regional distribution of HIV prevalence rates for the youngest age group i.e. 15 – 24 can be categorized in 3 scenarios:

- Five regions have HIV prevalences among the age group 15 – 24, above 11%. These regions are Arusha, Iringa, Kagera, Mbeya and Morogoro.
- In 10 regions, prevalence rates for the age group 15 – 24 years range between 5% and 10%. These regions are Coast, Dar Es Salaam, Mara, Mwanza, Mtwara, Rukwa, Ruvuma, Shinyanga, Singida and Tabora.
- Five regions had HIV prevalence rates among blood donors aged 15 – 24 below 5%. These regions are Tabora, Lindi, Kilimanjaro, Kigoma and Dodoma.

This information is summarized in Map 1 and Table 10.

Map 1: Categorisation of regions by level of HIV infection rates: 2000

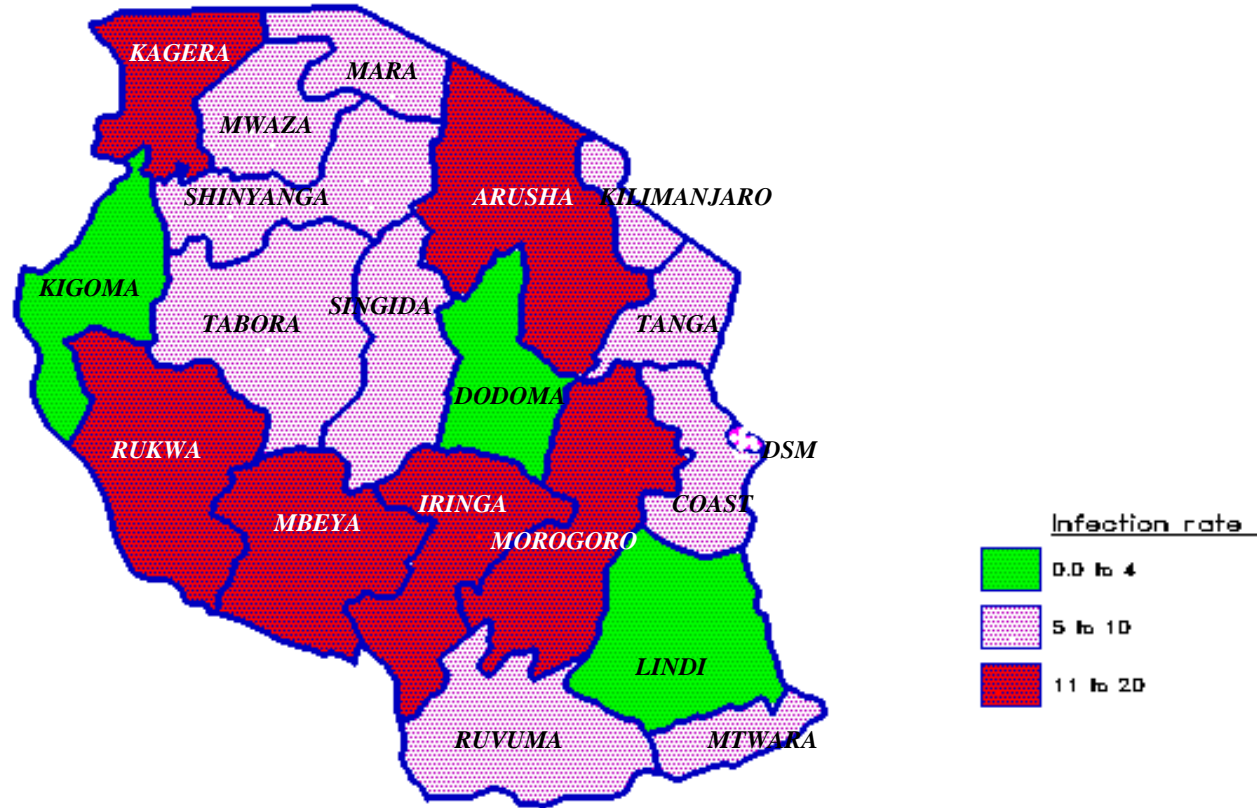


Table 10: Prevalence of HIV among blood donors by region and age group for 1999-2000

<i>Region</i> <i>Age group</i>	<i>Year 1999</i>		<i>Year 2000</i>	
	<i>Total Donors</i>	<i>% prevalence</i>	<i>Total Donors</i>	<i>% prevalence</i>
Arusha	3030	22.0	7223	13.8
15 -24	853	20.5	1834	11.3
25 - 34	1288	23.8	3365	14.7
35+	889	20.7	2024	14.3
Coast	3510	8.9	3160	12.5
15 -24	941	7.8	606	8.2
25 - 34	1477	10.0	1305	13.1
35+	1092	8.5	1249	13.9
DSM	694	33.1	1739	8.6
15 -24	129	29.5	264	6.4
25 - 34	267	37.5	460	10.2
35+	298	31.0	1015	8.4
Dodoma	2269	5.1	3001	3.9
15 -24	522	4.0	642	2.0
25 - 34	960	5.8	1275	4.3
35+	787	4.8	1084	6.4
Iringa	4258	14.7	2393	14.6
15 -24	1207	13.2	687	11.4
25 - 34	1809	17.1	1003	16.8
35+	1242	12.7	703	14.6
Kagera	4572	17.7	3827	19.5
15 -24	1435	12.1	1045	15.1
25 - 34	1926	19.4	1694	21.2
35+	1211	21.6	1088	21.1
Kigoma	6860	6.4	6772	3.8
15 -24	1537	4.8	1346	2.1
25 - 34	2964	6.4	2959	4.3
35+	2359	7.4	2467	4.3
Kilimanjaro	5218	4.8	4435	6.8
15 -24	1438	2.8	1189	3.8
25 - 34	2374	5.2	1938	7.4
35+	1406	6.3	1308	8.6
Lindi	7083	3.4	5092	4.2
15 -24	1905	3.0	1208	1.2
25 - 34	3110	3.2	2088	4.4
35+	2068	4.3	1796	5.4
Mara	5151	9.2	10676	9.4
15 -24	1870	7.9	3274	6.6
25 - 34	2028	11.4	4261	10.8
35+	1253	7.5	3141	10.3
Mbeya	6691	15.2	7338	17.0
15 -24	1922	10.8	2102	12.2
25 - 34	2767	18.5	3051	20.1
35+	2002	15.0	2185	17.3
Morogoro	12389	11.3	7606	16.6
15 -24	2980	10.2	1676	16.6
25 - 34	5602	11.2	3430	16.2

<i>Region</i>	<i>Age group</i>	<i>Year 1999</i>		<i>Year 2000</i>	
		<i>Total Donors</i>	<i>% prevalence</i>	<i>Total Donors</i>	<i>% prevalence</i>
	35+	3807	12.4	2500	17.0
Mtwara		3030	7.8	8665	8.2
	15 -24	752	6.8	2084	7.0
	25 - 34	1409	8.4	3827	8.8
	35+	869	7.8	2754	8.2
Mwanza		10273	7.0	9858	7.6
	15 -24	3081	5.6	2627	5.4
	25 - 34	4190	8.3	4059	8.5
	35+	3102	6.8	3172	8.4
Rukwa				3277	11.8
	15 -24			968	7.8
	25 - 34			1321	14.5
	35+			988	12.3
Ruvuma		8301	9.8	9813	10.2
	15 -24	2240	10.0	2688	8.4
	25 - 34	3689	10.6	4277	10.8
	35+	2372	8.3	2848	11.1
Shinyanga		8654	8.2	9332	9.4
	15 -24	2167	6.6	2170	7.5
	25 - 34	3987	8.6	4217	10.0
	35+	2500	8.7	2945	10.0
Singida		4187	8.1	5326	8.0
	15 -24	947	5.7	1195	7.7
	25 - 34	1868	8.9	2266	8.4
	35+	1372	8.7	1865	7.9
Tabora		11335	7.1	9084	7.2
	15 -24	2877	5.3	2187	4.8
	25 - 34	5121	7.6	4084	7.4
	35+	3337	7.9	2813	8.4
Tanga		10967	8.3	9749	8.8
	15 -24	2747	6.2	2383	8.7
	25 - 34	5122	8.6	4540	9.0
	35+	3098	9.8	2826	8.5

2.3 SURVEILLANCE POPULATION III: STD PATIENTS

Data from Infectious Disease Clinic (IDC) STD Clinic in Dar Es Salaam collected from January to December 2000 indicate that prevalence of HIV infection among 552 STD patients who requested VCT was 44.2%. Prevalence among 428 GUD patients was 46%. Of those two categories of patients, 198 were youths aged 15 - 24 years, 16.2% of whom had evidence of HIV infection.

3.0 SURVEILLANCE OF SYPHILIS INFECTION

SURVEILLANCE POPULATION: ANTENATAL CLINIC ATTENDEES

During the year 2000 a total of 1974 women attending antenatal clinics for the first time for a particular pregnancy, were screened for syphilis infection. The prevalence of syphilis ranged from 0.0% to 44.5% compared with 0.4% to 32.6% in 1999 (Table 11). A decreasing trend in the prevalence of syphilis is observed in various clinics (See table 11) though an alarmingly high prevalence was noted in Arusha region particularly in Katesh and Monduli districts. However, irregularities in the screening and testing procedures as explanations to these high rates cannot be entirely excluded. More observations, research and intensification of quality control during surveillance are required.

Table 11: Prevalence of Syphilis infection among pregnant women from 1990 to 2000 (all ages)

Region	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Kagera											
Bukoba		2.7	3.6							6.2	4.1
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	6.1
Chimala	4.4		10.0		14.0	8.5	2.5	6.3	8.0	7.5	7.5
Isoko	7.5	7.3	22.0		5.5	0.7	2.7	0.0	8.8	7.5	5.0
Itete			8.0		10.1	7.4	0.0	2.0	4.7	9.7	5.8
Mwambani	6.6		8.0		17.5	11.0	10.5	3.5	14.5	8.0	6.5
Kyela		4.8	17.9		7.5	1.0	4.1	0.0	5.0	1.5	5.5
Mbozi					8.0	6.2	2.5	1.5	9.0	8.0	6.5
Mbeya Urban	9.1	8.6				7.3	6.8	0.8	4.8	4.0	5.5
Kiwanjampaka		26.6	10.0		13.5			0.5	3.5	6.5	5.7
Mwanjelwa		20.0	14.0		10.6			0.0			-
Meta		11.9	5.0		13.0			2.0	6.5	3.0	4.4
Dar Es Salaam											
Temeke Distr.Hosp.			4.1								
Mwananyamala			1.6								
Aga Khan Hosp			13.6								
Kasorobo – Temeke									32.6		
Kigamboni									14.2		
Sinza									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	0.0
Iringa											
Mafinga		19.9	21.7	28.3		1.2				17.3	
Mtwara		4.2									
Nanguruwe			8.3			0.0					
Ndanda								15.0			
Mara											
Nyasho		1.2	7.0	3.9		5.0					
Kibara										11.5	
Bunda											7.1

Region	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Rukwa			16.8								
Namanyere			18.0								0.0
Sumbawanga			15.7								7.2
Ruvuma											
Madaba		51.9	3.6				12.0	2.5			
Songea			3.3			4.0	2.1	4.0		12.1	0.0
Namtumbo			7.1			1.7	4.9	5.4		14.0	
Shinyanga				5.1							
Morogoro											
Urban										17.3	
Turiani										0.4	
Arusha											19.4
Babati											5.1
Ketish											44.1
Meru											4.0
Monduli											36.0
Mkoaranga											6.7

4.0 SURVEILLANCE OF CURABLE STIs

Introduction

Sexually transmitted infections (STIs) are a major public health problem which cause not only health related consequences, but also social and economic sequelae. In addition, they facilitate sexual transmission of HIV infection. Therefore control of STIs has been recognised as one of major strategies in the control and prevention of HIV infection. Comprehensive STIs care is now expanded to 12 regions, including Mara, Mwanza, Shinyanga, Dodoma, Iringa, Morogoro, Arusha, Tanga, Lindi, Kigoma, Mbeya and Dar Es Salaam.

Methods

Care providers record information on new episodes of STI syndromes, re-treatment, contact tracing and demographic characteristics of clients including type and location of health facilities on the forms which are designed and distributed by NACP. Duly filled forms are returned to NACP through respective District and Regional Medical Officers.

Results

A total of 149,222 episodes of new STI syndromes were reported in 2000 compared with 39,385 episodes in 1999. Table 12 summarizes episodes of STI syndromes reported in 2000 by age and sex. Genital Discharge Syndrome (GDS) remained the commonest form of STI in both sexes. It was more prevalent among females compared to males. However, in the absence of laboratory confirmation of the specific microbial aetiological agent it is difficult to ascertain the specific STI entities associated with this syndrome. For example, it is reckoned that a proportion of females treated GDS may actually have no STI but just an exaggerated physiological discharge. On the other hand, GDS in males is an indicator of STI incidence in the community. The age group 20-29 years had the highest prevalence of STIs including syphilis when compared with other age categories.

Of all the diagnosed individuals 22,158 (14.8%) reported back for follow-up and 31,087 contacts were traced. These are extremely low figures if the efforts for STI control are to be successful.

Table 12: Distribution of reported new STI episodes by syndromes, age groups and sex: Jan – Dec. 2000

Region	Sex Age- Grp	GDS				GUD				PID				OTHERS			
		<20	20-29	30+	Total	<20	20-29	30+	Total	<20	20-29	30+	Total	<20	20-29	30+	Total
Arusha	Male	94	260	302	656	37	76	121	234					31	71	73	175
	Female	136	227	271	634	34	55	53	142	72	268	257	597	90	81	101	272
DSM	Male	322	210	379	911	332	360	293	985					196	286	172	654
	Female	261	282	461	1,004	307	385	344	1036	199	454	362	1015	274	275	211	760
Dodoma	Male	1234	3706	2713	7,653	523	1816	1325	3664					536	728	948	2212
	Female	1343	3495	2792	7,630	610	1767	1360	3737	1793	3627	3102	8522	659	834	764	2257
Iringa	Male	15	36	78	129	3	25	34	62					9	15	15	39
	Female	41	64	41	146	21	25	30	76	10	72	41	123	19	34	17	70
Kagera	Male	19	48	80	147	9	34	21	64					10	19	35	64
	Female	45	143	99	287	12	30	21	63	7	40	43	90	12	29	22	63
Kigoma	Male	95	498	594	1,187	15	157	167	339					99	57	77	233
	Female	304	1161	680	2,145	63	186	113	362	97	486	377	960	97	54	36	187
Mara	Male	2	15	8	25	1	7	3	11					9	3	6	18
	Female	4	21	2	27	0	7	3	10	0	5	5	10	5	4	2	11
Mbeya	Male	970	4254	4077	9,301	915	3907	3958	8780					538	793	636	1967
	Female	2019	5842	2748	10,609	1367	3705	2082	7154	1063	4182	2980	8225	633	860	515	2008
Morogoro	Male	205	829	921	1,955	64	304	297	665					126	129	147	402
	Female	452	1252	699	2,403	152	458	232	842	279	956	744	1979	160	125	62	347
Mtwara	Male	44	86	71	201	21	33	33	87					1	2	6	9
	Female	58	143	59	260	48	69	27	144	26	33	31	90	1	2	2	5
Mwanza	Male	247	869	718	1,834	107	396	297	800					120	149	118	387
	Female	113	2298	952	3,363	162	365	182	709	442	1882	1232	3556	199	334	192	725
Ruvuma	Male	6	53	61	120	5	27	18	50					1	2	6	9
	Female	22	105	44	171	11	18	10	39	9	55	35	99	3	0	0	3
Shinyanga	Male	274	1343	1485	3,102	153	523	656	1332					136	172	181	489
	Female	605	1852	1017	3,474	224	630	356	1210	374	1691	1259	3324	207	203	137	547
Lindi	Male	45	188	167	400	20	143	126	289					10	50	32	92
	Female	70	192	147	409	39	148	108	295	62	188	148	398	18	53	40	111
Tabora	Male	2	18	20	40	0	5	2	7					2	1	1	4
	Female	6	26	15	47	0	3	2	5	2	10	15	27	1	2	1	4
Tanga	Male	335	932	1045	2,312	104	307	316	727					154	225	233	612
	Female	655	1711	1002	3,368	153	350	250	753	537	1440	1187	3164	184	258	211	653
Singida	Male	5	15	19	39	6	12	23	41					8	10	24	42
	Female	15	35	38	88	5	17	19	41	37	229	402	668	38	65	9	112
Total		10,063	32,209	23,805	66,077	5,523	16,350	12,882	34,755	5,009	15,618	12,220	32,847	4,586	5,925	5,032	15,543

Table13: Distribution of reported new STI episodes by region, sex and syndromes: Jan – Dec. 2000

		GDS	GUD	PID	OTHERS	Totals	RE-TREATED	CONTACTS
Arusha	Male	656	234		175	1065	48	140
	Female	634	142	597	272	1645	56	141
DSM	Male	911	985		654	2550	102	458
	Female	1,004	1036	1015	760	3815	222	453
Dodoma	Male	7,653	3664		2212	13529	2660	-
	Female	7,630	3737	8522	2257	22146	3016	-
Iringa	Male	129	62		39	230	24	134
	Female	146	76	123	70	415	35	44
Kagera	Male	147	64		64	275	25	58
	Female	287	63	90	63	503	45	60
Kigoma	Male	1,187	339		233	1759	473	792
	Female	2,145	362	960	187	3654	626	667
Mara	Male	25	11		18	54	7	19
	Female	27	10	10	11	58	10	28
Mbeya	Male	9,301	8780		1967	20048	3387	5843
	Female	10,609	7154	8225	2008	27996	3813	6985
Morogoro	Male	1,955	665		402	3022	332	1573
	Female	2,403	842	1979	347	5571	772	1422
Mtwara	Male	201	87		9	297	49	97
	Female	260	144	90	5	499	57	55
Mwanza	Male	1,834	800		387	3021	1005	3387
	Female	3,363	709	3556	725	8353	1530	2113
Ruvuma	Male	120	50		9	179	2	72
	Female	171	39	99	3	312	5	90
Shinyanga	Male	3,102	1332		489	4923	970	2132
	Female	3,474	1210	3324	547	8555	1601	1663
Lindi	Male	400	289		92	781	135	113
	Female	409	295	398	111	1213	168	302
Tabora	Male	40	7		4	51	2	7
	Female	47	5	27	4	83	5	4
Tanga	Male	2,312	727		612	3651	423	1125
	Female	3,368	753	3164	653	7938	549	1097
Singida	Male	39	41		42	122	3	9
	Female	88	41	668	112	909	1	4
Total		66,077	34,755	32,847	15,543	149222	22158	31087

Table 14: Distribution of Syphilis cases (VDRL/RPR sero-reactivity) diagnosed in STIs Clinics by regions, age groups and sex; Jan – December 2000

REGION	Sex	VDRL/RPR POSITIVE			TOTAL
		<20	20-29	30+	
Arusha	Male	7	13	16	36
	Female	17	18	19	54
DSM	Male	6	71	75	152
	Female	90	242	118	450
Dodoma	Male	106	1086	887	2079
	Female	199	2066	1580	3845
Iringa	Male	0	2	10	12
	Female	33	101	41	175
Kagera	Male	0	5	5	10
	Female	8	21	9	38
Kigoma	Male	8	21	26	55
	Female	40	65	41	146
Kilimanjaro	Male	0	2	0	2
	Female	12	47	21	80
Mara	Male	7	3	3	13
	Female	5	1	2	8
Mbeya	Male	151	660	660	1471
	Female	546	1516	702	2764
Morogoro	Male	16	100	146	262
	Female	173	566	244	983
Mtwara	Male	4	7	5	16
	Female	6	17	14	37
Mwanza	Male	14	29	36	79
	Female	172	457	159	788
Ruvuma	Male	3	5	8	16
	Female	3	2	6	11
Shinyanga	Male	22	86	127	235
	Female	179	494	258	931
Lindi	Male	12	30	32	74
	Female	15	93	54	162
Tabora	Male	5	7	17	29
	Female	4	17	5	26
Tanga	Male	21	24	14	59
	Female	10	65	20	95
Singida	Male	1	5	18	24
	Female	7	14	21	42
Total		1902	7958	5399	15259

5.0 MONITORING OF VOLUNTARY COUNSELLING AND HIV TESTING SERVICES

During the reporting year, voluntary counselling and HIV testing (VCT) services continued in the country. Of the 6,539 new clients who were counselled, 3,338 (51%) were tested. Among those who were tested, 59.5% were HIV seropositive. In all reporting VCT sites, the prevalence of HIV infection was high (30 – 80%) among the clients tested. These very high prevalence figures are not comparable to any of the data from other surveillance groups implying that those who attend VCT services are high-risk individuals. It also implies that data from VCT services is not suitable for use in determining the magnitude and trend of HIV infection in the population. Generally, observations drawn from the VCT data indicate the need of strengthening VCT services in order to increase their scope and efficiency.

Table 15: Voluntary Counselling and HIV Testing Services January – December 2000.

Region	1997			1998			1999			2000		
	New clients	Clients tested	HIV Positive (%)	New Clients	Client tested	HIV positive (%)	New clients	Client tested	HIV Positive (%)	New clients	Client tested	HIV Positive (%)
Arusha	162	72	47.2	187	98	65.3	457	100	76.0	34	20	30.0
Coast	100	57	73.7	162	84	75.0	310	119	63.0	317	40	80.0
Dodoma	151	51	74.5	120	51	76.5	-	-	0			
Dar Es Salaam	880	642	80.5	643	685	75.0	119	1109	86.6	3042	1799	58.8
Iringa	186	122	76.2	335	198	69.7	568	356	73.6	857	412	61.9
Kagera	20	16	62.5	38	32	21.9	-	-	0			
Kigoma	130	40	57.5	35	27	25.9	76	33	72.7	227	170	59.4
Kilimanjaro	114	82	63.4	149	98	54.1	-	-	0			
Lindi	75	56	26.8	112	58	56.9	-	-	0	153	71	56.3
Mara	48	17	88.2	149	28	96.4	-	-	0	478	310	53.9
Morogoro	43	36	77.8	108	34	88.2	115	89	65.2	85	11	72.7
Mtwara	38	23	30.4	141	71	85.9	191	70	72.9	152		
Mwanza	508	134	65.7	499	463	62.4	429	682	64.5	788	412	62.1
Rukwa	104	40	87.5	113	46	67.4	17	13	38.5	92	32	59.4
Ruvuma	75	23	73.9	153	34	70.6	157	20	90.0	76	17	88.2
Singida	244	78	71.8	164	127	63.0	15	9	66.7			
Shinyanga	281	196	69.4	218	114	50.9	-	-	0	155		
Tanga	138	71	71.8	233	157	70.1	58	41	65.9	83	44	70.5
Tabora	168	142	46.5	61	174	33.9	36	0	0			
TOTAL	3465	1898	69.7	3620	2579	65.6	2548	2641	75.8	6539	3338	59.5

6.0 HIGHLIGHTS OF FINDINGS FROM RECENT RESEARCH ACTIVITIES IN TANZANIA

1. Changes in Sex Work

In those countries where decline in HIV prevalence has been observed, 3 major changes in sexual behaviour have been reported. These changes include, delay in sexual debut, reduction in the number of sexual partners and increased use of condoms in risky sexual encounters. An ethnographic study on patterns of partnership and condom use in two communities of Female Sex Workers in Tanzania by Anne Outwater et al (3), identified some **cardinal** features about sex work in Tanzania. These features inter alia include the following:

- The sex worker's first motivation is economic.
- The numbers of partners are decreasing.
- Condom use has been accepted in short-term relationships.
- Condom use is rarely accepted in long term relationships.

These findings fit well within the context of the Third Medium Term Plan which aim to promote Multisectoral partnerships with purpose of empowering communities to confront the epidemic through risk and vulnerability reduction as well as impacts mitigation.

2. HIV infection in children admitted to Medical wards

Overall prevalence of HIV –1 infection among hospitalized children in Muhimbili National Hospital was found to be 19.2%. HIV infection in the children studied was significantly associated with history of maternal morbidity or mortality, underscoring the role of mother-to-child transmission of HIV-1 in the study population. In the HIV-1 infected children, mortality was found to be 21.4% which was 2.5 times higher than in the HIV – uninfected children. HIV/AIDS was shown to have impact on adult mortality as well as the survival of children born by parents who are infected by HIV (4).

3. Care and support has preventive benefits

Proper care and support for people living with HIV/AIDS has been observed to benefit the affected clients as well as the general public because it encourages preventive behaviour change overtime. Research conducted in Tanga in 1999 showed that knowing that one is seropositive can lead to significant risk reduction. However, beyond six months after knowing that one was HIV seropositive, there was no significant impact on behaviour change. The positive behaviour changes observed included treatment of variety of illness, including STDs. The most difficult issue was the disclosure of serostatus to sexual partners and other reproductive choices. It was concluded that enhanced care and support might improve behavioural change on these issues (5).

4. HIV Subtypes circulating in Tanzania

Different HIV-1 subtypes have been documented in various African countries. In East and Central African countries including Uganda, Rwanda and Tanzania subtypes A and D dominate. In contrast, in Malawi and South Africa another subtype C dominates. A study conducted in Dar Es Salaam in recent years identified 3 subtypes namely A, D and C as well as recombinants C/A, CD and A/D (6). The distribution

of the different subtypes among HIV infected individuals was 35.2%, 32.4% and 16.9% for subtypes A, C and D, respectively. Recombinant strains were demonstrated in about 15.5% of the infected individuals. Further observations indicate that subtype C is more prevalent in the southern regions of the country. Overall, it is estimated that the major subtypes A, C and D occur at a frequency of 40%, 40% and 20%, respectively.

5. The prevalence and Incidence of HIV-1 infection and syphilis in Dar Es Salaam

In a Police Officers cohort study in Dar Es Salaam a prevalence of 18.0% among female compared to 13.3% among males was reported (7). In the same cohort, the incidence of HIV-1 was 19.6 and 22.4 /1000 person years at risk (PYAR) for males and females respectively. High risk sexual practices were high with about 84% not using condoms in the risky encounters.

These findings underscore the need for increased preventive efforts in the general population with special efforts on women in order to identify suitable effective intervention for them. The researchers concluded that this cohort is potentially suitable for HIV vaccine trials in future.

6. Impact of syphilis on pregnancy outcome and impact of syphilis screening on adverse pregnancy outcome

Syphilis in pregnancy is associated with various adverse outcomes including spontaneous abortion, stillbirth and neonatal death as well as premature delivery and poor fetal growth which is largely manifested as low birth weight. This condition is considered to be a strong risk factor associated with high infant morbidity and mortality.

Globally, congenital syphilis is estimated to contribute to 29% of prenatal and infant deaths, 11% of neonatal deaths and 26% of stillbirths. However, there are other conditions that might have similar adverse outcomes as syphilis. These factors include other reproductive tract infections, maternal malaria and anemia.

In a study conducted in Mwanza by Watson Jones et al 2001 (8), it was found that maternal syphilis is a major public health burden that causes pregnancy loss and infant morbidity. Over 50% of women with untreated maternal syphilis will have a stillbirth or deliver a low birth weight infant. A single dose of benzathine penicillin was found to be adequate to prevent adverse pregnancy outcomes that are attributable to syphilis in the study populations. These outcomes are stillbirth prematurity and intra-uterine growth retardation

7. Trends of HIV infection in the Kagera Region of Tanzania 1987 - 2000:

Population based cross-sectional studies, prospective cohort studies and sentinel surveillance studies carried out in Kagera region from 1987 to the year 2000 (9) showed a high prevalence of HIV infection, infection levels decreasing as one went away from Bukoba urban area. These findings in 1987 formed the basis of categorizing the region into presumed areas of high, medium and low levels of HIV-1 infection. Findings from the high prevalence area (Bukoba town) showed a downward trend in the age-adjusted prevalence from 24.2% in 1987, to 18.3% in 1993 and 12.5% in 1996. For the medium prevalence area (Muleba) the age adjusted prevalence decreased from 10.0% in 1987, to 6.8% in 1996 and 4.5% in 1999. Findings from the low prevalence area (Karagwe) showed a similar trend, from 4.5% in 1987 to 2.5% in 1999. Incidence in the presumed high prevalence area Bukoba urban declined from 47.5/1000 PYAR in 1989 to 9.1/1000 PYAR in 1996. For the presumed medium prevalence area Muleba rural district, incidence declined from 8.2/1000 PYAR in 1989 to 3.9/1000 PYAR in year 2000. Findings from behavioural factors indicated a rise in condom use, especially among casual sexual partners. The proportion of individuals getting married at an early age increased with time during the study period, although age at first sexual intercourse decreased over time. Over 93% of studied individuals reported to currently have one sexual partner and over 96% of individuals in the three areas indicated that they took some form of precaution against HIV infection mainly sticking to one partner. In this study, it was concluded that behavioural change may alter the course of the epidemic and that it may not be necessary for the epidemic to mature before a decline is noted. It was however emphasized that interventions responsible for the downward trend of the epidemic should be intensified otherwise laxity may result into resurgence of the epidemic.

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APPENDIX

Total number of AIDS cases diagnosed per hospital for the year 2000.

<i>Region</i>	<i>Hospital</i>	<i>Cases</i>	<i>Percent</i>
Arusha	Babati	32	12.9
	Kibaya	18	7.26
	Mbulu	6	2.42
	Monduli	12	4.84
	Oldeang	14	5.65
	Selian	53	21.37
	Uhai	49	19.76
	Not stated	64	25.81
	Total	248	100
Coast	Bagamoyo	9	0.92
	Kibaha	28	2.88
	Kisame	11	1.13
	Kisarawe	11	1.13
	Mafia	30	3.08
	Mkuranga	18	1.85
	Utete	52	5.34
	Not stated	814	83.66
	Total	973	100
Dodoma	Kondoa	44	22.8
	Kongwa	39	20.21
	Mpwapwa	110	56.99
	Total	193	100
Dsm	Temeke	494	35.04
	Ilala	694	49.22
	TMS	60	4.26
	Sunni	17	1.21
	St. Benard	26	1.84
	Aga Khan	50	3.55
	Dr. Khan	41	2.91
	Tumaini	28	1.99
	Total	1410	100
Iringa	Not stated	103	100
	Total	103	100
Kagera	Bukoba	216	98.63
	Not stated	3	1.37
	Total	219	100
Kigoma	Kabanga	29	24.37
	Kasulu	16	13.45
	Kibondo	20	16.81
	Maweni	15	12.61
	Not stated	39	32.77
	Total	119	100
Kilimanjaro	Huruma	160	49.69
	Kibongoto	41	12.73
	Mawenzi	3	0.93
	Mwanga	18	5.59
	Same	36	11.18
	Usangi	43	13.35
	Not stated	21	6.52
	Total	322	100

<i>Region</i>	<i>Hospital</i>	<i>Cases</i>	<i>Percent</i>
Lindi	Kinyonga	12	2.01
	Liwale	131	21.98
	Mnero	15	2.52
	Notstated	50	8.39
	Nyangao	303	50.84
	Ruangwa	6	1.01
	Sokoine	79	13.26
	Total	596	100
Mara	Kamnyonge	1	0.26
	Kibara	13	3.36
	Mugumu	4	1.03
	Musoma	164	42.38
	Tarime	6	1.55
	Not stated	199	51.42
	Total	387	100
Mbeya	Chimala	47	1.44
	Chunya	5	0.15
	Igawilo	3	0.09
	Mbeya Referral Hosp.	2235	68.47
	Vwawa	137	4.2
	Isoko	15	0.46
	Tukuyu	172	5.27
	Mbozi	415	12.71
	Kyela	235	7.2
Total	3264	100	
Morogoro	Berega	13	2.48
	Kilombero	42	8
	Kilosa	3	0.57
	Lugala	13	2.48
	Mahenge	4	0.76
	Mhc	53	10.1
	Mikumi	31	5.9
	Mtibwa	15	2.86
	Turiani	343	65.33
	Not stated	8	1.52
Total	525	100	
Mtwara	Ligula	106	40.46
	Mkomaindo	33	12.6
	Ndanda	58	22.14
	Newala	43	16.41
	Not stated	22	8.4
	Total	262	100
Mwanza	Geita	170	37.44
	Kwimba	24	5.29
	Magu	4	0.88
	Misungwi	19	4.19
	Mkula	15	3.3
	Nansio	37	8.15
	Sekoutoure	111	24.45
	Sumve	27	5.95
	Notstated	47	10.35
	Total	454	100

<i>Region</i>	<i>Hospital</i>	<i>Cases</i>	<i>Percent</i>
Rukwa	Mpanda	129	34.31
	Sumbawanga	188	50
	Not stated	59	15.69
	Total	376	100
Ruvuma	Litembo	111	17.18
	Liuli	83	12.85
	Mbesa	83	12.85
	Mbinga	3	0.46
	Njombe	4	0.62
	Peramiho	290	44.89
	Songea	46	7.12
	Tunduru	4	0.62
	Not stated	22	3.41
	Total	646	100
Shinyanga	Bariadi	77	13.3
	Kahama	6	1.04
	Maswa	4	0.69
	Mwadui	14	2.42
	Shinyanga	170	29.36
	Ushirombo	11	1.9
	Not stated	297	51.3
Total	579	100	
Singida	Iramba	31	46.27
	Makiungu	36	53.73
	Total	67	100
Tabora	Igunga	373	49.93
	Kitete	92	12.32
	Ndala	63	8.43
	Nkinga	27	3.61
	Nkula	14	1.87
	Nzega	72	9.64
	Sikonge	15	2.01
	Urambo	50	6.69
	Notstated	41	5.49
Total	747	100	
Tanga	Bumbuli	23	12.57
	Lushoto	28	15.30
	Pangani	128	69.95
	Not stated	4	2.19
	Total	183	100
Grand Total		11,673	