

THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF HEALTH

NATIONAL AIDS CONTROL PROGRAMME

HIV / AIDS / STD SURVEILLANCE

REPORT NO. 7, December 1992

Epidemiology Unit, NACP
Dar es Salaam
December 1992.

1. EXECUTIVE SUMMARY

AIDS Case reports ¹

- * First 3 cases reported in 1983
- * 34,140 cases reported up to 31.12.1991
- * 38,416 cases reported up to 31.12.1992; doubling time 19.1 months
- * Only 1 out of 4 - 6 cases reported
- * Exponential increase will continue, even when further HIV infections will stop

HIV infection rates

Blood donor data

Due to donor selection, these data increasingly underestimate HIV-infection rates

- * 5.4 % of male adults are HIV infected (1992)
- * 7.0 % of female adults are HIV infected (1992)
- * Most affected regions : (1992)
 - Lake Zone - Kagera
 - Southern Highlands - Mbeya, Rukwa, Iringa
 - Coast - Dar es Salaam, Tanga

Ante-natal clinic data

- * Prevalence ranges from 2.3 % to 30.4 %

Orphans

- * Present estimate : 110,000 orphans

Projections

HIV Infections

- * 760,000 by the year 1990
- * 1,600,000 by the year 1995
- * 2,400,000 by the year 2000

AIDS Cases

- * 800,000 AIDS cases by the year 2000
 - (even if no more infections occur from 1990 : 480,000)
 - (worst case scenario : 850,000)

Orphans

- * On average 1 orphan per AIDS case :
- By the year 2000 :
 - at least 450,000 orphans
 - probably 750,000 orphans
 - at worst 1 million orphans

1 Excluding Dar-es-Salaam, as Muhimili Medical Center does not submit case reports to MoH.

4. AIDS CASE REPORTING

Since last report (May 1992), a total of 3,811 new AIDS cases have been recorded by the Ministry of Health from the regions.

The distribution of the new reported cases by year of diagnosis is as follows :

Year	Number
1990	4
1991	437
1992	3,370
Total	3,811

Reporting for 1992 is still incomplete.

The cumulative number of AIDS cases by region and year, and the cumulative case rate (Number of cases per 100,000 population) is shown in table 1.

The highest cumulative case rate was recorded for Dar-es-Salaam (651.7 per 100,000) and the lowest for Dodoma region (34.4 per 100,000).

The doubling time between 1990 and 1991 was 19.1 months.

Figure 2 shows the case rate over the years for four selected regions.

Map 1 shows cumulative case rates by region.

The data are believed to reflect the real trend of AIDS cases, although the absolute numbers are assumed to be a factor 3 - 4 higher, due to under-reporting, under-diagnosis and delays in reporting.

Given the large pool of HIV infections already existing in the population, as well as future infections that might occur in the years to come, a rapidly increasing number of AIDS cases will continue to be documented up to and beyond the year 2000.

4.1 Distribution of AIDS Cases by Age and Sex

Of cases reported so far, (1983 - 1993) age and sex are known for 20,694 cases. The overall cumulative case rate is 89.9 per 100,000 for men and 82.4 for females.

Highest case rates of over 3.0 per 1,000 are seen in 30 - 39 year old men and in 25 - 29 year old women. (table 2)

The AIDS epidemic affects women at an earlier age than males. Case rates clear off in females at an earlier age than in males (figure 2).

The male/female ratio is 1.05. Taking in account that the general population has an excess of females, the M/F rate ratio is 1.09. (In cases up to mid 1991 these ratio's were 1.16 and 1.21 respectively.)

The M/F ratio of AIDS cases is expected to decrease further, as the ratio for HIV infection among blooddonors is 0.89 for 1992.

6. SENTINEL SURVEILLANCE / BLOOD DONORS

6.1 INTRODUCTION

Reporting on serostatus of potential blood donors takes place since 1987, but is far from complete:

Year	Reported Number	Reported %	Age and Sex known Number	%
1987	4,285	3 %	555	13 %
1988	13,807	10 %	3,680	27 %
1989	35,049	24 %	12,244	35 %
1990	27,509	19 %	24,024	87 %
1991	80,251	56 %	77,476	97 %
1992	48,875	34 %	47,381	97 %

The number of blood transfusions taking place is estimated at 6 per 1,000 per year, i.e. approx. 144,000. It has been reported from other countries, that sero-prevalence among blood donors might decrease, due to improved selection of blood donors, while prevalence in the general population is rising. As most blood donors in Tanzania are relatives of the recipient (see table on page 11), blood donor data are believed to be only moderately biased. This was confirmed by a study from Mwanza region (see page 11). It should be noted that HIV screening in 1987 - 1988 was limited to regional hospitals; the population screened was thus predominantly urban. By 1990 HIV screening had been expanded to all hospitals including rural low prevalence areas. As all regions and most hospitals do report on the sero status of donors, these data give the most reliable estimates available for seroprevalence in the population at large. Sero-prevalence and their trends over time differ markedly between both sexes, between various regions and between age groups.

6.2 Regional Differences (see table 4a-b, map 2a-b)

Overall time trends by region before 1989 are difficult to assess, as few regions reported data.

As data from different regions are assumed to be equally biased, the regional differences are real. Highest prevalences (7% and over) are found in :

- Lake Zone : Kagera
- Southern Highlands : Mbeya, Rukwa, Iringa
- Coast : Dar es Salaam, Tanga

6.5 HIV Infection in Adolescents

When blood donor data are broken down by age groups, it becomes apparent that the increase is largely due to a very rapid increase in prevalence among teenagers (15-19 years) and 20-24 year olds. (table 5a-b and figure 6a-b).

Among male 15-19 year olds, prevalence was 0.0% in 1987, and reached 4.0% by 1992. Among female 15-19 year olds, prevalence rose from 0.0% in 1988 to 7.9% in 1989, 7.5% in 1990, and subsequently steadily declined to 3.6% for 1992.

Prevalence among 20-24 year old females has increased from 0.0% to 13.5% in 1989, and subsequently steadily declined to 7.1% for 1992. It should be noted that these two age groups make up 37% of the adult population.

Figure 7 shows the prevalence by single years of age. The linear regression line runs from 1.4% at age 14 to 6.4% at age 25 for males, an increase of 0.47% per year of age. For females it runs from 2.0% at age 14 to 9.7% at age 25, an increase of 0.75% per year of age. This suggests considerable rates of transmission, even before the age of 14 years.

This is in line with behavioral data which indicate that 50% of adolescents have made their sexual debut by age 15 (Source : Institute for Curriculum Development, 1992).

Additional data on adolescents are available from a population based survey in 1990/91 in Mwanza region ²

These data show a marked difference between rural, roadside and urban sites. Linear regression lines (graphs not shown) indicate an increase of 1.6% per year for Mwanza urban, 0.7% for roadside villages and 0.45% for rural villages. At age 15, prevalences are 3.73% for urban sites, 3.41% for roadside villages and 0.57% for rural villages.

HIV Prevalence in Adolescents (linear regression)

	14 yrs.	25 yrs.	Increase % p.a.
Blood donors, M	1.367 %	6.385 %	0.47 %
Blood donors, F	1.980 %	9.743 %	0.75 %
	15 yrs.	24 yrs.	
Mwanza, urban	3.73 %	17.84 %	1.57 %
Mwanza, roadside	3.41 %	9.49 %	0.68 %
Mwanza, rural	0.57 %	4.61 %	0.45 %

2 Data kindly provided by the Project Coordinator, TANERA Project, Mwanza

8. HIV AND OTHER STD's AMONG FAMILY PLANNING CLIENTS IN DAR-ES-SALAAM

Results of a survey conducted in Dar-es Salaam between March 1991 and January 1992.⁴

Prevalence of Laboratory Confirmed STD's

Disease		Prevalence
HIV	252 / 2009	12.5 %
Report of discharge	236 / 2009	11.7 %
Trichomoniasis	245 / 1773	13.8 %
Candidiasis	204 / 1773	11.5 %
Gonorrhoea	79 / 1773	4.5 %
Syphilis	50 / 2009	2.5 %

HIV Prevalence by Family Planning Clinic

Clinic	Pos. / Total	Prevalence
Ilala	39 / 288	13.5 %
Temeke	122 / 953	12.8 %
Mwananyamala	91 / 768	11.8 %
Total	252 / 2009	12.5 %

HIV Prevalence by age

Age	Prevalence
15 - 20 yrs	6.5 %
21 - 25 yrs	14.4 %
26 - 30 yrs	14.7 %
30 + yrs	10.8 %
Total	12.5 %

⁴ Data kindly provided by the investigators, Kepiga S., Lwihula G., Sheo J. and Hunter D.

However, in a very high prevalence area it has been shown by Killewo et al. that blooddonor seroprevalence underestimates the population prevalence by 50%. These figures were not adjusted for sex.

Category	Crude %	Age-adj. %
Population survey	25.3 %	25.3 %
Antenatal Clinic attenders	22.8 %	17.9 %
Blood donors	11.9 %	12.1 %

As blood donors are predominantly male and most are young adults, figures derived from blooddonors have to be adjusted for the age- and sex-distribution of the general population.

When age- and sex- specific prevalences found in blood donors are extrapolated to the general population, one arrives at an estimated number of 270,000 infected adult males and 453,000 adult females (see table 9, figure 5), totalling 723,000 seropositive adults for Tanzania mainland in 1990.

Based on age specific fertility rates for Tanzanian woman, these women are estimated to have born 85,000 children in 1990, of whom approximately, 30% or 25,000 are born with HIV infection. The remaining 60,000 children are not infected, but have at least one parent who is likely to develop AIDS in the near future.

Including perinatally infected children, the total estimate of HIV seropositives is approximately 750,000.

Projection of Paediatric AIDS Cases and Infant Mortality Rates

Scenario :	Without AIDS :		With AIDS :	
	CMR per 1,000	Child Deaths	CMR per 1,000	Child Deaths
Low	150	180,000	167	200,000
Medium	150	180,000	175	210,000
High	150	180,000	192	230,000

Projection of Orphans

Projections of HIV / AIDS / Paediatric AIDS deaths / Orphans by the year 2000

Scenario	HIV infections	AIDS Cases (cum.)	Orphans (cum.)	Paediatric AIDS deaths
Low	760,000	480,000	450,000	20,000
Medium	1,600,000	800,000	750,000	30,000
High	2,400,000	850,000	830,000	50,000

Low : Transmission reduced to 0% by 1990
 Medium : Transmission reduced to 0% by 1995
 High : Transmission reduced to 0% by 2000

Table 1

NACP / Tanzania : cumulative AIDS cases by region, 1983 – 1993 Jan.

Region/Yr	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	Population	Rate	Rank
Arusha	0	0	0	10	47	217	429	579	881	966	1,351,675	71.5	16
Coast	0	0	1	4	79	224	413	705	1,147	1,341	638,015	210.2	4
D'Salaam	0	0	51	471	1,470	3,093	5,203	7,196	8,651	8,868	1,360,850	651.7	1
Dodoma	0	0	0	7	47	105	247	277	400	426	1,237,819	34.4	20
Iringa	0	0	1	3	68	305	374	612	1,660	1,945	1,208,914	160.9	6
Kagera	3	106	322	847	1,665	2,142	2,543	3,164	3,886	4,135	1,326,183	311.8	3
Kigoma	0	0	0	3	50	109	243	434	631	818	854,817	95.7	14
Kilifjaro	0	1	8	36	207	455	570	854	1,523	1,779	1,108,695	160.5	7
Lindi	0	0	0	1	9	45	111	394	563	668	646,550	103.3	13
Mara	0	0	0	3	30	99	139	237	483	600	970,942	61.8	18
Mbeya	0	0	0	16	208	747	1,042	2,819	4,741	5,633	1,476,199	381.6	2
Morogoro	0	0	0	11	88	247	339	544	1,733	2,167	1,222,737	177.2	5
Mtwara	0	0	1	5	23	95	173	369	824	995	889,494	111.9	11
Mwanza	0	0	15	54	171	448	644	1,065	2,191	2,448	1,878,271	130.3	8
Rukwa	0	0	0	1	5	90	94	124	203	258	694,974	37.1	19
Ruvuma	0	0	0	20	45	76	187	388	788	999	783,327	127.5	9
Shinyanga	0	0	C	8	31	144	227	463	931	1,102	1,772,549	62.2	17
Singida	0	0	0	6	74	197	284	405	577	683	791,814	86.3	15
Tabora	0	2	5	6	59	232	510	802	1,071	1,208	1,036,293	116.6	10
Tanga	0	0	0	13	80	210	335	650	1,256	1,377	1,283,636	107.3	12
TANZANIA	3	109	404	1,525	4,456	9,280	14,107	22,081	34,140	38,416	22,533,754	170.5	
Doubling time(in years):	0.19	0.53	0.52	0.65	0.94	1.66	1.55	1.59					

*Rate per 100,000 population.

Table 2

Distribution of new AIDS cases by age and sex, 1987 - 1993 January.

Age	Male			Female			Total					
	Number	%	Population	Rate	Number	%	Population	Rate	Number	%	Population	*Rate
0- 4	559	5.3	2,501,834	22.3	477	4.7	2,474,728	19.3	1,036	5.0	4,976,562	20.8
5- 9	54	0.5	2,066,764	2.6	78	0.8	2,055,045	3.8	132	0.6	4,121,809	3.2
10-14	42	0.4	1,588,241	2.6	57	0.6	1,593,470	3.6	99	0.5	3,181,711	3.1
15-19	193	1.8	1,288,892	15.0	669	6.6	1,285,902	52.0	862	4.2	2,574,794	33.5
20-24	941	8.9	1,067,910	88.1	2,258	22.4	1,119,240	201.7	3,199	15.5	2,187,150	146.3
25-29	2,321	21.9	745,321	311.4	2,749	27.3	785,896	349.8	5,070	24.5	1,531,217	331.1
30-34	2,417	22.8	655,392	368.8	1,873	18.6	742,984	252.1	4,290	20.7	1,398,376	306.8
35-39	1,703	16.0	490,636	347.1	1,056	10.5	590,806	178.7	2,759	13.3	1,081,442	255.1
40-44	1,073	10.1	486,976	220.3	452	4.5	567,344	79.7	1,525	7.4	1,054,320	144.6
45-49	656	6.2	372,713	176.0	223	2.2	404,581	55.1	879	4.2	777,294	113.1
50-54	345	3.3	316,552	109.0	106	1.1	338,841	31.3	451	2.2	655,393	68.8
55-59	164	1.5	209,008	78.5	42	0.4	217,725	19.3	206	1.0	426,733	48.3
60-64	94	0.9	182,928	51.4	31	0.3	190,796	16.2	125	0.6	373,724	33.4
65+	49	0.5	278,020	17.6	12	0.1	353,710	3.4	61	0.3	631,730	9.7
Total	10,611	100.0	12,251,187	86.6	10,083	100.0	12,721,068	79.3	20,694	100.0	24,972,255	82.9
unknown total	399	3.6 % of the total	89.9	394	3.8 % of the total	89.9	10,477	82.4	793	3.7 % of the total	86.0	21,487

M/F ratio : 11,010 / 10,477 = 1.05
M/F rate ratio 89.9 / 82.4 = 1.09
M/F rate ratio (age-adj.) = 1.15

* Rate per 100,000 population.

Table 3a

NACP – Sentinel Surveillance of HIV in ante-natal clinic attenders, 1988 – 1992.

Clinic	1988		1989		1990		1991		1992	
	Pos / Tot	%	Pos / Tot	%	Pos / Tot	%	Pos / Tot	%	Pos / Tot	%
BUKOBA					284 / 1277 22.2		104 / 519 20.0			
MWANZA urban	27 / 339 8.0		151 / 1295 11.7		177 / 1438 12.3		134 / 1197 11.2		30 / 299 10.0	
Mbeya rural	5 / 174 2.9		37 / 318 11.6						37 / 263 14.1	
Chimala	2 / 48 4.2		4 / 64 6.3				8.8		9.5	
Isoko	2 / 68 2.9		1 / 50 2.0				2.4		6.6	
Itete	1 / 58 1.7		5 / 55 9.1				6.4		3.9	
Mwambani			6 / 50 12.0				8.5		12.9	
Kyela			21 / 99 21.2				14.6		17.5	
Mbeya urban	29 / 307 9.4		51 / 391 13.0				12.2		15.3	
Kiwanjampaka	7 / 100 7.0		10 / 94 10.6						17 / 100 17.0	
Mwanjelwa	11 / 100 11.0		7 / 96 7.3						11 / 100 11.0	
Meta	11 / 107 10.3		34 / 201 16.9						25 / 100 25.0	
Dar es Salaam							31 / 300 10.3			
Temeke										
M'Nyamala										
A.K. Clinic										
Coast										
Bagamoyo										
Kisarawe										
Kibaha										
K'jaro (Umbe)							3 / 128 2.3			
Iringa										
Mafinga										
Mtwa:ra							57 / 271 21.0			
(Nanguruwe)										
Mara (Nyasio)							4 / 90 4.4			
Rukwa										
Namanyere							27 / 300 9.0			
Sumbawanga										
Ruvuma										
Songea										
Namtumbo										

Figure 4

ANC Surveillance, 1988-1992.

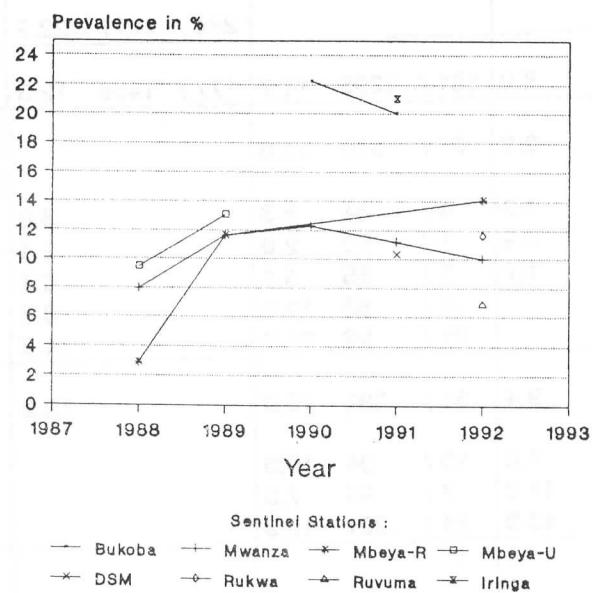
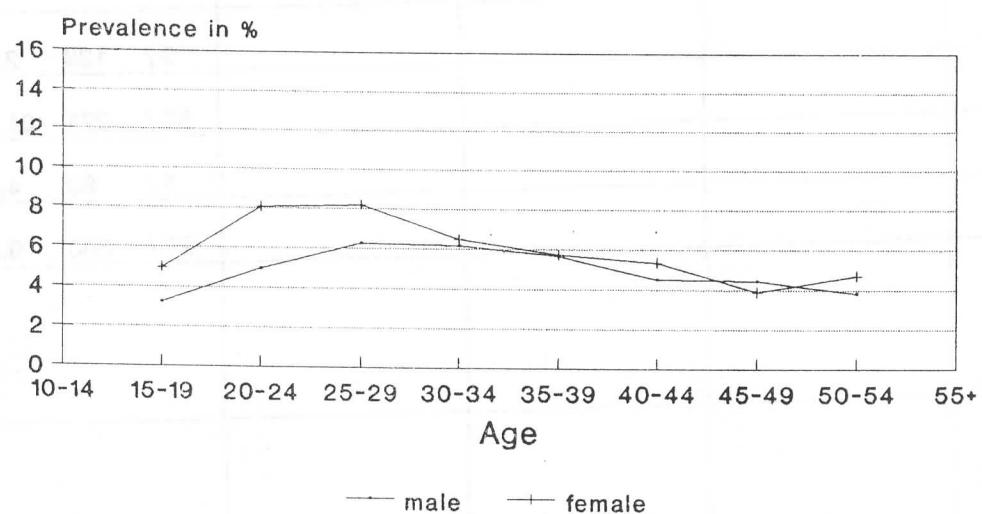


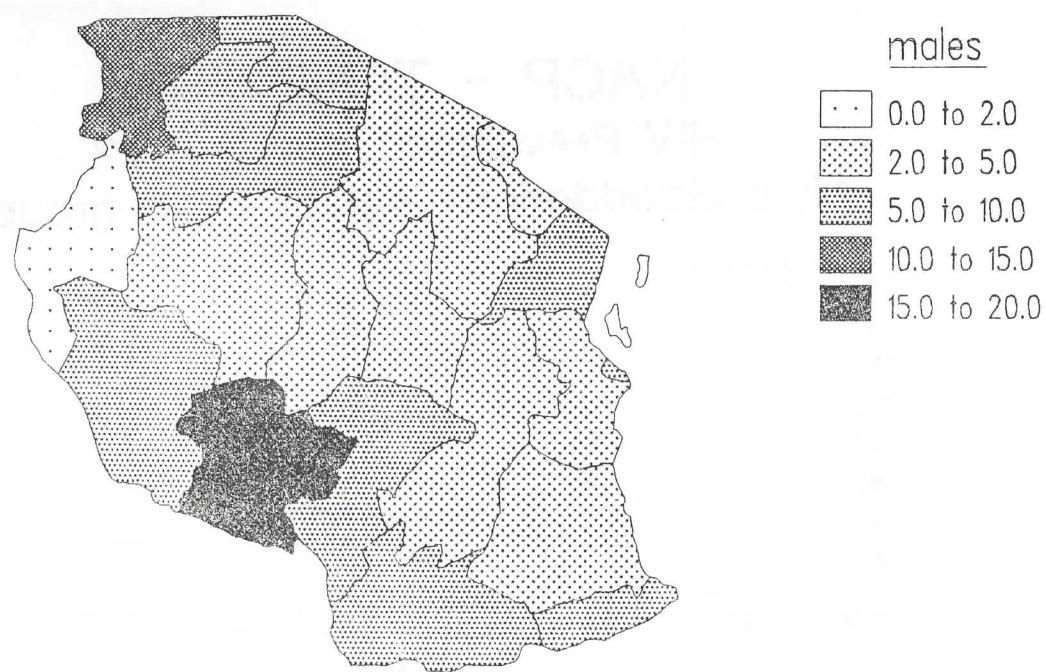
Figure 5

HIV Prevalence in blooddonors by age and sex, 1987 - 1992



Epidemiology Unit, December 1992

Seroprevalence in blooddonors for males 1992



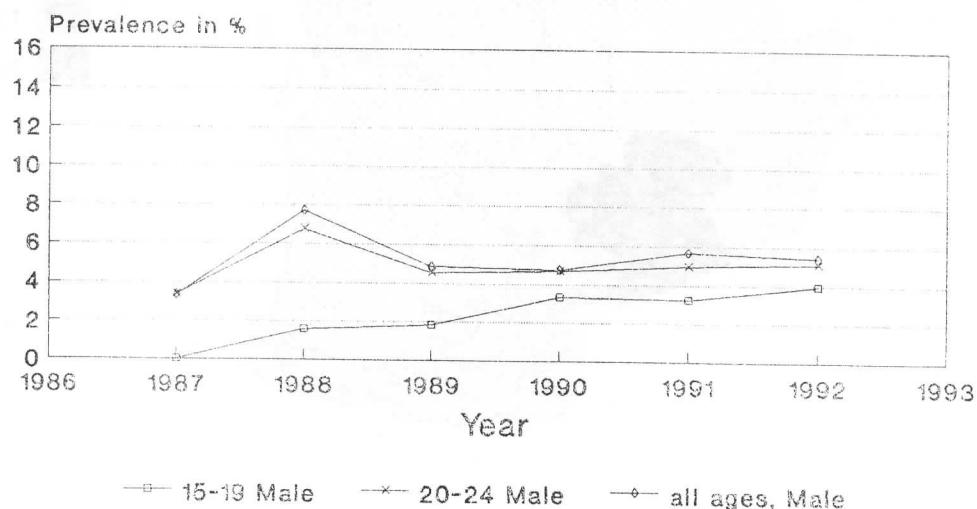
Seroprevalence in blooddonors for females 1992



Figure 6a

Section

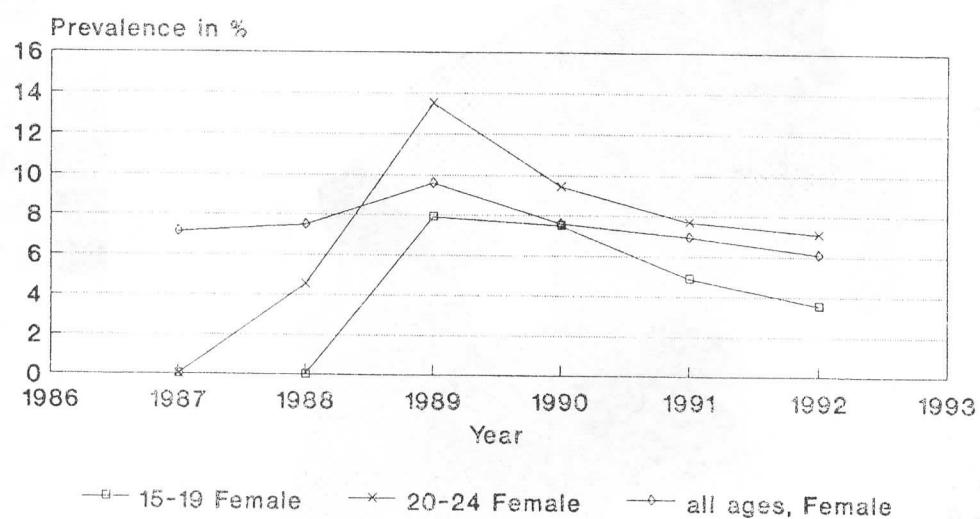
NACP - TANZANIA HIV Prevalence, 1987-1992 Male blooddonors, selected agegroups



Epidemiology Unit, December 1992

Figure 6b

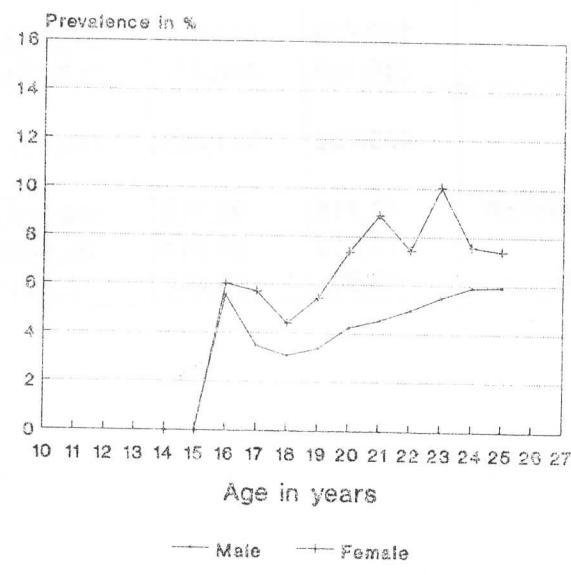
NACP - TANZANIA HIV Prevalence, 1987 - 1992 Female blooddonors, selected agegroups



Epidemiology Unit, December 1992

Figure 8a

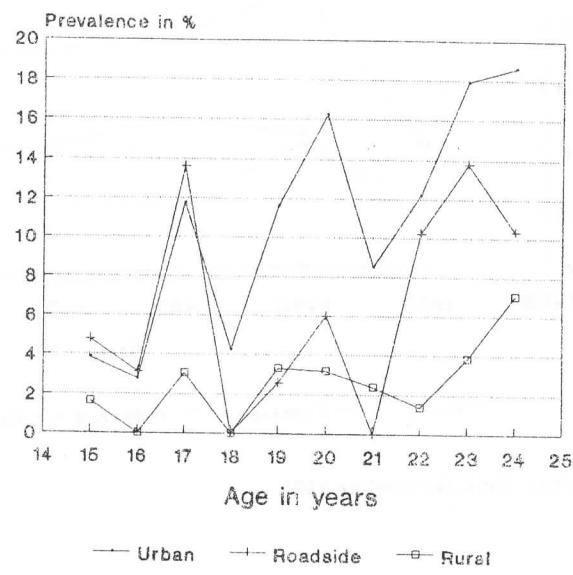
HIV Seroprevalence
in Adolescent Blooddonors.
1987 - 1992



NACP, December 1992 (bt_yth_ls)

Figure 8b

HIV Seroprevalence
in Adolescents, Mwanza region
1990 survey



TANERA Project, Mwanza (mw_yth_ls)

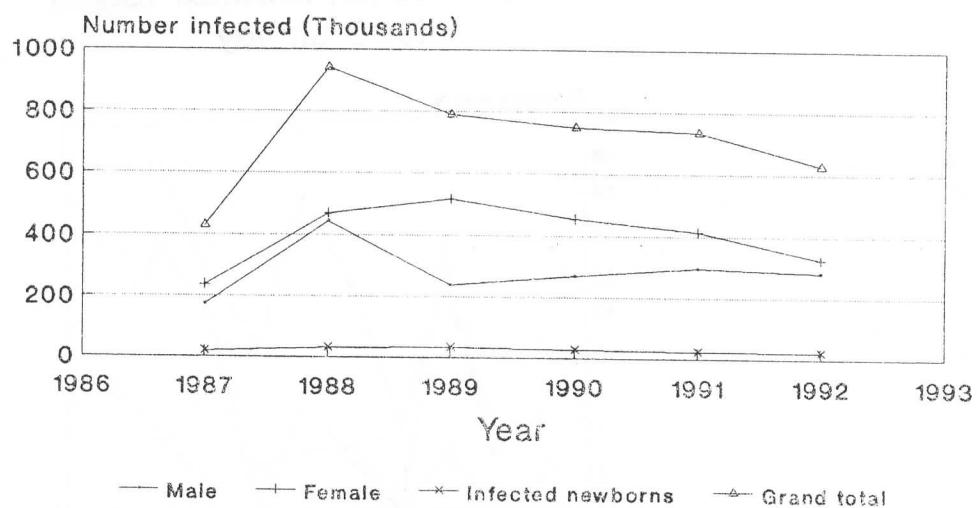
Table 7

**Summary of estimated number of infected, 1986 – 1992
(based on age adjusted blooddonor prevalence)**

	1987	1988	1989	1990	1991	1992
Males	173,656	443,054	238,683	269,759	297,149	282,970
Females	236,102	468,411	517,274	453,130	414,911	325,314
Total	409,758	911,465	755,957	722,889	712,061	608,284
Infected pregnant women	62,715	99,715	109,810	85,601	75,727	66,407
Infected newborns	18,815	29,914	32,943	25,680	22,718	19,922
Uninf. newb./pos. M.	43,901	69,800	76,867	59,921	53,009	46,485

Figure 9

**Estimated number of HIV seropositives
for Tanzania mainland**



Epidemiology Unit, December 1992