

Ministry of Health , Tanzania

NATIONAL AIDS CONTROL PROGRAMME

AIDS Surveillance

Report No. 3, August 1990

Epidemiology Unit, NACP

August 1990

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Acknowledgement.

We would like to thank all health workers, who have provided us with data on HIV and AIDS, and thus enabled us to compile this Epidemiological Report.

1. SUMMARY

This report covers the status of the HIV/AIDS epidemic in Tanzania mainland by June 1990, and contains updated figures since the second report of February 1990. Moreover, data were analyzed more in depth, to reveal any trends by various agegroups and regions over time.

Figures from various sources all indicate that the HIV / AIDS epidemic continues to increase at alarming rates throughout Tanzania.

Two groups are of particular importance : Antenatal clinic attenders and adolescents: Among pregnant women, attending antenatal clinics in Mbeya, Mwanza and Bukoba region, the percentage HIV-positive women has increased from 10 % to 16 % (Mbeya) and from 8 % to 14 % (Mwanza) in little over a year. The effect on the infant mortality rate will be considerable : as 30 % of children born to these women will die from AIDS within the first few years of their life, up to 5 % of newborns (50 per 1,000) in Mwanza and Mbeya towns are expected to die from AIDS. Children escaping infection with HIV (up to 11 %) are unlikely to have a mother (or any parent) still alive by the end of the century. Although a similar situation might not prevail throughout the country, data from bloodtransfusion services throughout the country suggest that the problem is virtually nationwide.

A second group of great concern are adolescents (15-19 year old) : data from blooddonors show an alarming increase among the 15-19 and 20-24 year agegroups. Among 15-19 year olds, the percentage seropositives was 0.0 % in 1987, increased rapidly thereafter, and has reached 7.2 % by 1990. Among the 20-24 year group, prevalence has increased fivefold from 1.6 % to 8.2 % between 1987 and 1990.

At the same time, awareness of the AIDS problem has been shown to be very high (see section 6). Despite this high level of awareness, the impact of control measures so far remains to be seen.

In the light of these facts, there is an urgent need to review programme strategies, in order to come up with interventions which will bring rising trends to a halt.

Even if transmission of HIV would cease as from now, most of the estimated number of approx. 800,000 HIV infected persons will develop AIDS during the remainder of this decade.

2. INTRODUCTION

Our last report, which was out in February 1990, covered the period up to December 1989. The current report up-dates the AIDS situation from December 1989 up to June 1990. The surveillance areas addressed have remained the same. The National AIDS Control Programme (NACP) has continued to collect data on Reported AIDS Cases, and HIV seroprevalence among blood donors and pregnant women attending antenatal clinics.

As it became increasingly obvious that the reporting system was deficient and incomplete, the NACP has continued its efforts to increase the coverage of surveillance activities on AIDS. New forms, individually numbered and in triplicate, will be introduced for all surveillance activities. The clinical case notification forms have been simplified, and adapted for easy computer data entry. By the end of 1990 all forms will have been printed and distributed to all regions in the country. The computer system will be streamlined, to speed-up data entry, and to simplify analysis. New computer programmes are being developed, to check for double reporting, to report on missing forms and to check if cases meet the clinical case definition. Communication between the regions and NACP will be improved through regular feed-back reports with the view to motivating regions to compile and report data to the NACP regularly.

3. REPORTED AIDS CASES

Since the last quarterly report, a total of 1987 new AIDS cases have been recorded by the Ministry of Health from the regions. Not all these cases were diagnosed in 1990. Several regions seem to have a huge backlog of cases which have been diagnosed but have not been reported to the Ministry of Health. The distribution of the new reported cases by year of diagnosis is as follows:-

1986	-	1
1987	-	1
1988	-	30
1989	-	526
1990	-	1429
TOTAL		1987
		=====

The 2,306 new cases which have been diagnosed in 1990 are shown in Table 1 by region and by month of diagnosis. Singida and Rukwa regions have not reported any cases in the first six months of 1990. Dodoma, Iringa and Mtwara regions have each reported only 1 case in 1990. With the current up-date the cumulative number of cases which have been diagnosed by the regions from Tanzania mainland and reported to the Ministry of Health totals 16,250 since 1983 (Table 2.)

It is difficult to give an interpretation to the observed trends of reported AIDS cases from the different regions. While in some regions such as Dar es Salaam and Mbeya the numbers are on the rise, in other regions such as Kagera, there seems to be a levelling off in the number of reported AIDS cases (figure 1a). This might reflect a real decline in the number of cases, if the following assumptions were met :

- a) All AIDS cases report to health facilities.
- b) All AIDS cases are correctly diagnosed.
- c) A functional reporting systems from the regions to the Ministry of Health is in place in all the regions.

As there is reason to believe that this is not the case, and moreover the HIV sero-prevalence in all sentinel groups is on the rise, we assume that this apparent decline is an artefact due to poor reporting, and does not represent a real decline in AIDS cases.

3.1 Distribution of AIDS cases by age and sex

Of 2,306 cases reported during 1990, age and sex is known for 1,971. It is now a well established fact that AIDS is a disease that affects mainly the sexually active members of the community : the 15 - 44 years age group constitute 87.7 % of all cases (table 3), while they make up only 39.4 % of the total population. Children in the 0 - 4 years age group comprise 3.7 % of all the patients, while they constitute 19.9 % of the population. Most probably a greater portion of these get the disease through the perinatal route. The AIDS epidemic affects women at an earlier age than males. In the older ages, the epidemic clears off in females earlier than the males (figure 1b). The male/female ratio is 1.04. Taking in account that the general population has an excess of males, the M / F rate ratio is 1.08.

3.2 COMPLETENESS OF REPORTING

According to National guidelines an AIDS case should have at least two major symptoms and two minor symptoms. (Contrary to the Bangui criteria of at least two major and one minor criteria). HIV positivity is not necessary to diagnose an AIDS case clinically. It has however been observed that many hospitals do not follow these criteria: Of the 1,987 newly reported cases only 667 (33.6%) fulfilled the above mentioned criteria. The distribution of adherence to the criteria for these cases by region is shown in Table 4.

Although 1320 cases would not strictly qualify to be called AIDS cases we have taken them as cases assuming that those who reported them just made an omission at the stage of compiling the forms. We would request all Health workers to be more careful in filling the forms in the future in order to make sure that all cases that are reported to the Ministry of Health really qualify to be recorded as AIDS cases.

4. SENTINEL SURVEILLANCE / Antenatal Clinics

As part of our sentinel surveillance for HIV infection among pregnant women attending ante-natal clinics (ANC), we have continued to collect data from clinics situated in Mwanza, Mbeya and Kagera regions.

The prevalence of HIV infection among the women attending the various clinics by year is shown in Table 5a.

In most of the clinics there is a definite upward trend over time : e.g. Chimala, prevalence rose from 4.8 % in 1988 to 6.3 % in 1989/90. In Mwambani the prevalence rose from 0 % in 1988 to 12 % in 1989/90.

4.1 MBEYA

For Mbeya region, urban sites show higher prevalences than rural sites. Rural sites show a marked increase between 1989 and 1990 (figure 2a).

4.2 MWANZA - Makongoro site

Data for Makongoro clinic (Mwanza urban) are summarized by quarter in table 5b.

Since surveillance started in 1988, prevalence has increased from 8.0 % to 14 % (figure 2b).

4.3 Vertical transmission

Assuming 30 % transmission from pregnant women to their offspring, approximately 4 % of newborns are expected to be infected, ranging from 0.6 % to 7.5 %.

5. SENTINEL SURVEILLANCE / Blood donors.

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

Year	Reported	Age & sex known
1987	4,256	482
1988	12,934	4,169
1989	26,605	12,248
1990	5,163	3,179

The number of bloodtransfusions taking place is estimated at 6 per 1,000 per year, i.e. approx. 144,000. Although it has been reported from other countries, that sero-prevalence among blooddonors is decreasing, due to selection, while prevalence in the general population is rising, this seems unlikely to be the case in Tanzania, as most donors are relatives of the transfused patients (table 5c-5d).

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. As less than 6 % of all donors are female, and prevalence among females is higher, sex-adjusted prevalence has been calculated over the years. As blooddonors are much younger than the general population, prevalence has also been adjusted for age.

Age and sex-adjusted prevalence among blooddonors from 1987 - 1990 (table 6a) shows a steady increase, almost doubling within three years.

When these figures are broken down by age groups, it becomes apparent that this increase is largely due to a very rapid increase in prevalence among teenagers (15-19 years) and 20-24 year olds. (table 6a and figure 3). Among the 15-19 years old, prevalence was 0.0 in 1987, and has now reached 7.2 %. Prevalence among 20-24 year olds has increased five-fold from 1.6 % to 8.2 %. It should be noted that these two age groups make up 37 % of the adult population. On the assumption that blooddonors reflect the prevalence in the population at large, an estimate of the number of infected by agegroup was made for 1987-1990. The total number of infected in 1990 by this estimate is 790,161 (table 6b).

Even taking in account that female donors are differing from males in average age (being younger), prevalence among female donors is considerably higher than in men (M/F ratio : 0.83). This is at odds with findings among AIDS cases, where the M/F ratio is 1.08. It is not clear whether this reflects selection bias in blood donors, or whether women are at higher risk for infection now than was the case when present-day cases were infected, or whether this reflects differences in the natural history of infection between males and females.

6. RESEARCH FINDINGS

Data obtained from various surveys conducted in different parts of the country since 1988 show that public awareness on AIDS is satisfactorily high. Table 7 shows the findings of various authors on the public awareness on AIDS. Table 8 shows the degree of awareness expressed in terms of background characteristics of respondents.

With the high levels of awareness on AIDS, one would expect to find falling levels of HIV seroprevalence. This is however not the case. The high levels of awareness are not accompanied by the desirable changes in behaviour and practice. In the light of these findings, the Information, Education & Communication activities of the Programme must go further than the mere dissemination of information which has been the case so far. This fact brings us to a crucial point in our efforts to control the AIDS/HIV epidemic. How should we make use of the available epidemiological information gathered from different sources? The following are some of the areas where we could apply the epidemiological information gathered so far.

- 6.1 The findings we have gathered so far can be used to enforce or increase commitment in our activities. We are now able to show that AIDS in our society is a problem of rising epidemic proportion and also that some of our interventions like awareness campaigns have been successful. These facts can be used to solicit for increased commitment on the part of political leaders, financial institutions, donors, the health sector and other sectors.
- 6.2 The information gathered can also lead us in targeting our interventions to specific groups and geographical areas where the problem is more severe. To date we have been allocating our resources equally to all regions and to the general population.
- 6.3 Another use that can be made of the available information is Programme Monitoring and evaluation. In our case we have been able to raise awareness but have not been very successful in bringing about changes in practice and behavior.
- 6.4 From the information gathered so far, it is evident that the health sector is going to bear the burden of caring for AIDS cases for many years even if further transmissions were to stop now. Planners must bear this in mind while allocating resources and making long term plans.
- 6.5 The surveillance information should also be used for educational purposes. Campaigns should use data pertaining to the specific groups and areas when it is available.
- 6.6 Where trends have been established interventions should be targeted there to test whether they will make any changes in the observed trends. This means that surveillance and testing of interventions can go together.

WACP / Tanzania : reported AIDS cases by region and month, 1990

Region\Yr	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total	Population	*Rate	Rank
Arusha	15	16	4	0	0	0							35	1,351,675	2.6	11
Coast	13	13	9	12	14	0							61	638,015	9.6	4
Dodoma	0	0	1	0	0	0							1	1,237,819	0.1	18
DSM	173	224	270	210	0	0							577	1,360,850	64.4	1
Iringa	0	0	1	0	0	0							1	1,208,914	0.1	17
Kagera	76	32	13	0	0	0							123	1,326,183	9.3	6
Kigoma	13	21	15	15	0	0							64	854,817	7.5	7
Kili'jaro	15	11	8	17	11	2							54	1,108,695	5.8	8
Lindi	17	5	28	6	10	0							68	646,550	10.5	3
Mara	4	0	3	6	5	0							18	970,942	1.9	14
Mbeya	83	157	91	202	139	5							677	1,476,199	45.9	2
Morogoro	0	0	3	0	0	0							3	1,222,737	0.2	15
Mtvara	0	1	0	0	0	0							1	889,494	0.1	16
Mwanza	18	9	5	20	21	3							76	1,878,271	4.0	10
Rukwa	0	0	0	0	0	0							0	694,974	0.0	20
Ruvuma	6	12	2	0	0	0							20	783,327	2.6	12
Shinyanga	24	9	10	2	0	0							45	1,772,549	2.5	13
Singida	0	0	0	0	0	0							0	791,814	0.0	19
Tabora	17	20	14	0	0	0							51	1,036,293	4.9	9
Tanga	42	16	17	8	15	22							121	1,283,636	9.4	5
TANZANIA	518	546	494	501	215	32							2,306	22,533,754	10.2	

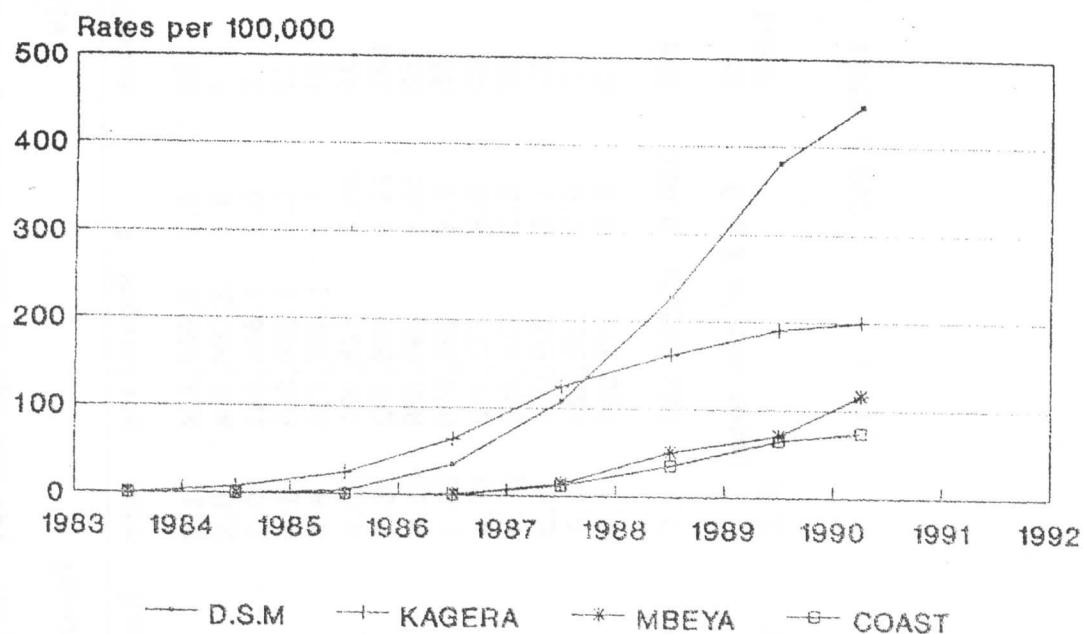
TABLE 2

WACP / Tanzania : cumulative AIDS cases by region, 1983 - 1990

Region\Yr	1983	1984	1985	1986	1987	1988	1989	1990	1991	Population	Rate	Rank
Arusha	0	0	0	10	47	217	429	464		1,351,675	34.3	10
Coast	0	0	1	4	79	224	411	472		638,015	74.0	4
Dodoma	0	0	0	7	47	105	247	248		1,360,850	18.2	16
DSM	0	0	51	471	1,470	3,093	5,186	6,063		1,237,819	489.8	1
Iringa	0	0	1	3	68	305	374	375		1,208,914	31.0	12
Kagera	3	106	322	847	1,665	2,141	2,535	2,650		1,326,183	200.4	2
Kigoma	0	0	0	3	50	109	243	307		854,817	35.9	8
Kili'jaro	0	1	8	36	207	455	570	634		1,108,695	57.2	5
Lindi	0	0	0	1	9	48	109	177		646,550	27.4	13
Mara	0	0	0	3	30	98	138	157		970,942	16.2	17
Mbeya	0	0	0	16	208	747	1,039	1,716		1,476,199	116.2	3
Morogoro	0	0	0	11	88	225	308	311		1,222,737	25.4	14
Mtvara	0	0	1	4	19	91	138	139		889,494	15.6	18
Mwanza	0	0	15	54	171	448	644	720		1,878,271	38.3	7
Rukwa	0	0	0	1	5	90	94	94		694,974	13.5	20
Ruvuma	0	0	0	20	44	71	106	186		783,327	23.7	15
Shinyanga	0	0	0	8	31	144	227	272		791,814	34.4	19
Singida	0	0	0	6	74	197	284	284		1,772,549	16.0	9
Tabora	0	2	5	6	59	232	509	560		1,036,293	54.0	6
Tanga	0	0	0	13	60	210	292	413		1,283,636	32.2	11
TANZANIA	3	108	404	1,524	4,451	9,248	13,844	16,250		22,533,754	72.1	

NACP - TANZANIA

Cumulative AIDS case rates in 4 regions

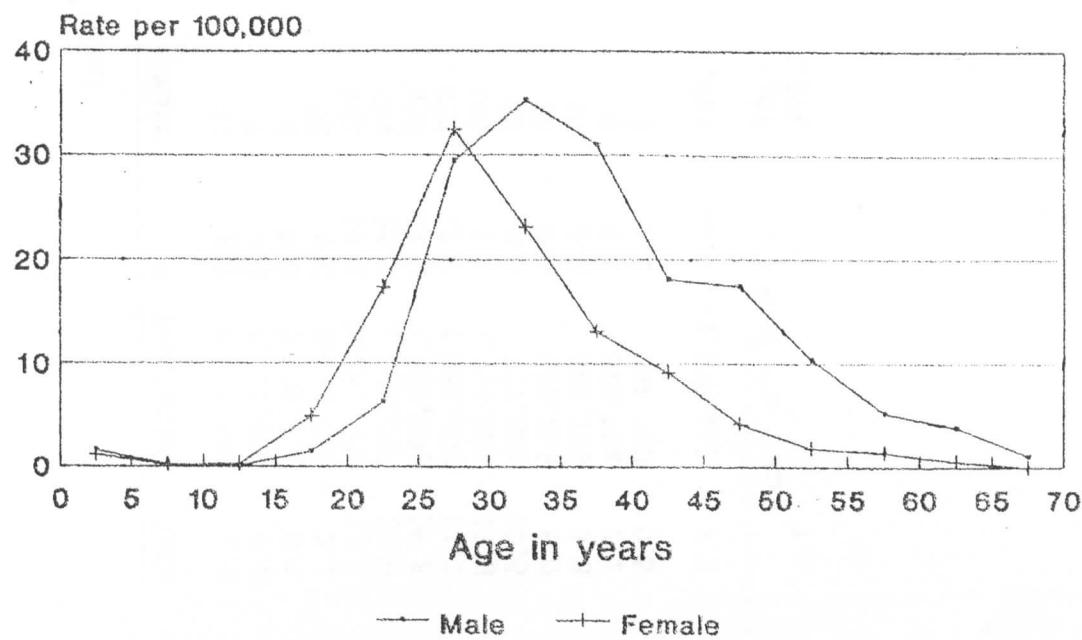


Epidemiology Unit, June 1990

FIGURE 1b

NACP - TANZANIA

AIDS case rates by Age and Sex



Epidemiology Unit, August 1990.

TABLE 3

Distribution of new AIDS cases by age and sex, 1990

Age	Male			Female			Total					
	Number	% Population	Rate	Number	% Population	Rate	Number	% Population	Rate			
0- 4	39	4.2	2,501,834	1.6	28	3.2	2,474,728	1.1	67	3.7	4,976,562	1.3
5- 9	4	0.4	2,066,764	0.2	3	0.3	2,055,045	0.1	7	0.4	4,121,809	0.2
10-14	1	0.1	1,588,241	0.1	3	0.3	1,593,470	0.2	4	0.2	3,181,711	0.1
15-19	19	2.0	1,288,892	1.5	63	7.2	1,285,902	4.9	82	4.5	2,574,794	3.2
20-24	67	7.1	1,067,910	6.3	194	22.2	1,119,240	17.3	261	14.4	2,187,150	11.9
25-29	219	23.3	745,321	29.4	255	29.1	785,896	32.4	474	26.1	1,531,217	31.0
30-34	231	24.6	655,392	35.2	172	19.7	742,984	23.1	403	22.2	1,398,376	28.8
35-39	152	16.2	490,836	31.0	78	8.9	590,806	13.2	230	12.7	1,081,442	21.3
40-44	88	9.4	486,976	18.1	52	5.9	567,344	9.2	140	7.7	1,054,320	13.3
45-49	65	6.9	372,713	17.4	17	1.9	404,581	4.2	82	4.5	777,294	10.5
50-54	33	3.5	316,552	10.4	6	0.7	338,841	1.8	39	2.1	655,393	6.0
55-59	11	1.2	209,008	5.3	3	0.3	217,725	1.4	14	0.8	426,733	3.3
60-64	7	0.7	182,928	3.8	1	0.1	190,796	0.5	8	0.4	373,724	2.1
65+	3	0.3	278,020	1.1	0	0.0	353,710	0.0	3	0.2	631,730	0.5
Total	939	100.0	12,251,187	7.7	875	100.0	12,721,068	6.9	1,814	100.0	24,972,255	7.3
unknown total	66	6.6 % of the total	8.2	91	9.4 % of the total	7.6	157	8.0 % of the total	1,971	7.9		

M/F ratio : 1,005 / 966 = 1.04

M/F rate ratio 8.2 / 7.6 = 1.08

TABLE 4

Classification of AIDS Cases by fulfilment
of clinical criteria. (cases reported during 19

Region	Total	Case	%
Arusha	53	25	47.2
Coast	138	48	34.8
DSM	0		
Dodoma	29	13	44.8
Iringa	1	0	0.0
Kagera	179	70	39.1
Kigoma	65	24	36.9
Kilimanjaro	66	26	39.4
Lindi	68	10	14.7
Mara	26	13	50.0
Mbeya	862	138	16.0
Morogoro	3	1	33.3
Mtwara	7	2	28.6
Mwanza	140	101	72.1
Rukwa	0		
Ruvuma	62	35	56.5
Singida	0		
Shinyanga	80	28	35.0
Tabora	86	55	64.0
Tanga	122	78	63.9
Total:	1987	667	33.6

TABLE 5a

NACP - Sentinel Surveillance / Prevalence of HIV in ante-natal clinic attenders, 1988 - 1990

Clinic	1988			1989			1990		
	N	Pos	Preval.	N	Pos.	Preval.	N	Pos.	Preval.
BUKOBIA urban							298	74	24.8
MWANZA urban	339	27	8.0	1295	151	11.7	847	109	12.9
MBEYA	170	4	2.4	481	34	7.1	709	88	12.4
Mbeya rural	170	4	2.4	174	5	2.9	219	16	7.3
Chimala	63	3	4.8	48	2	4.2	64	4	6.3
Isoko				68	2	2.9	50	1	2.0
Kitete	51	1	2.0	58	1	1.7	55	5	9.1
Mwasbani	56	0	0.0				50	6	12.0
Mbeya urban	0	0		307	29	9.4	490	72	14.7
Kiwanjampaka				100	7	7.0	94	10	10.6
Mwanjelwa				100	11	11.0	96	7	7.3
Meta				107	11	10.3	201	34	16.9
Kyela							99	21	21.2
ALL	509	31	6.1	1776	185	10.4	1854	271	14.6

TABLE 5b

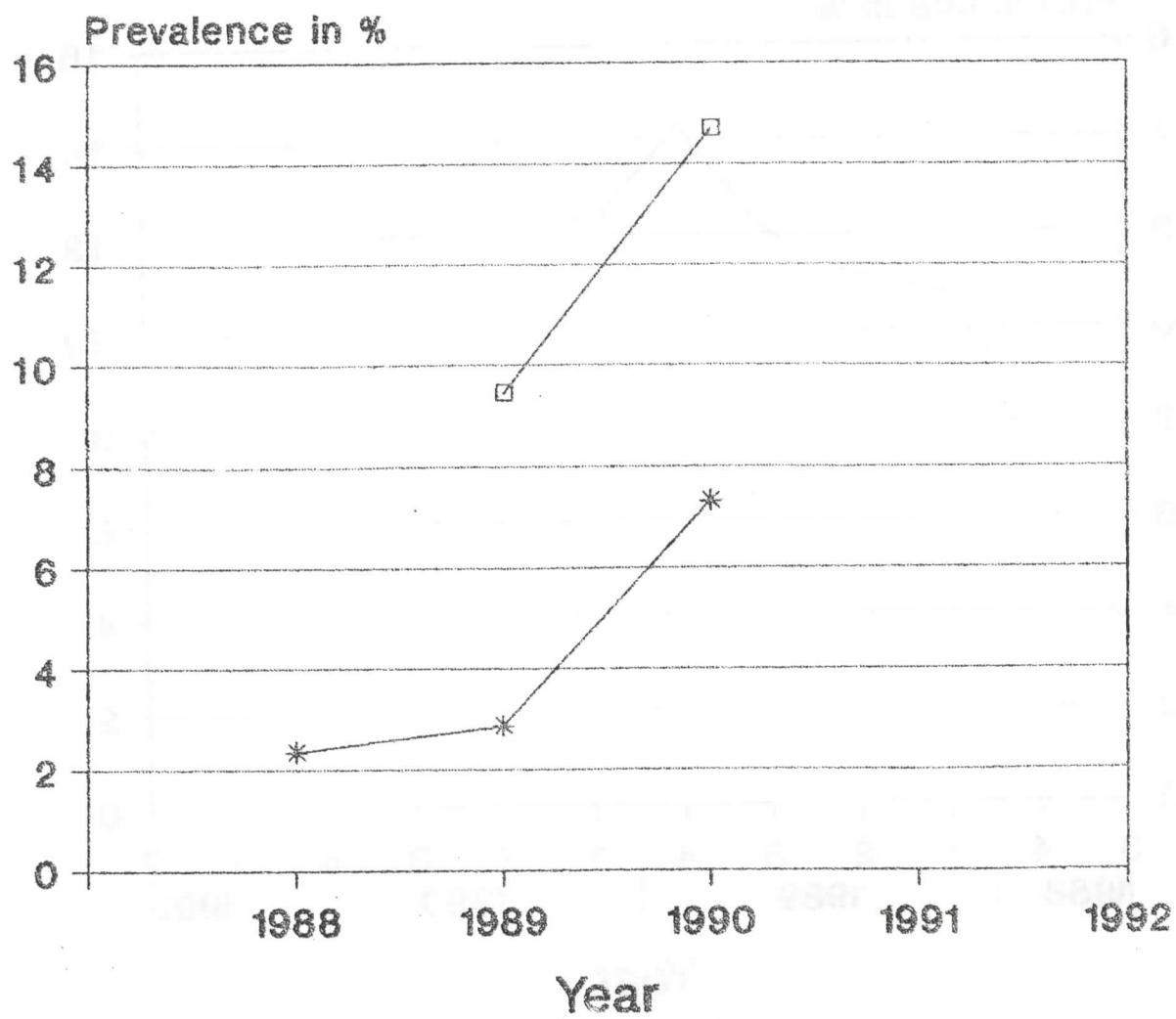
Makongoro Clinic

	N	Pos	Prevalence
1988	339	27	8.0
Quarter 4	339	27	8.0
1989	1295	151	11.7
Quarter 1	400	43	10.8
Quarter 2	469	52	11.1
Quarter 3	216	26	12.0
Quarter 4	210	30	14.3
1990	847	109	12.9
Quarter 1	519	63	12.1
Quarter 2	328	46	14.0

FIGURE 2a

NACP - TANZANIA

ANC Surveillance, 1988-1990



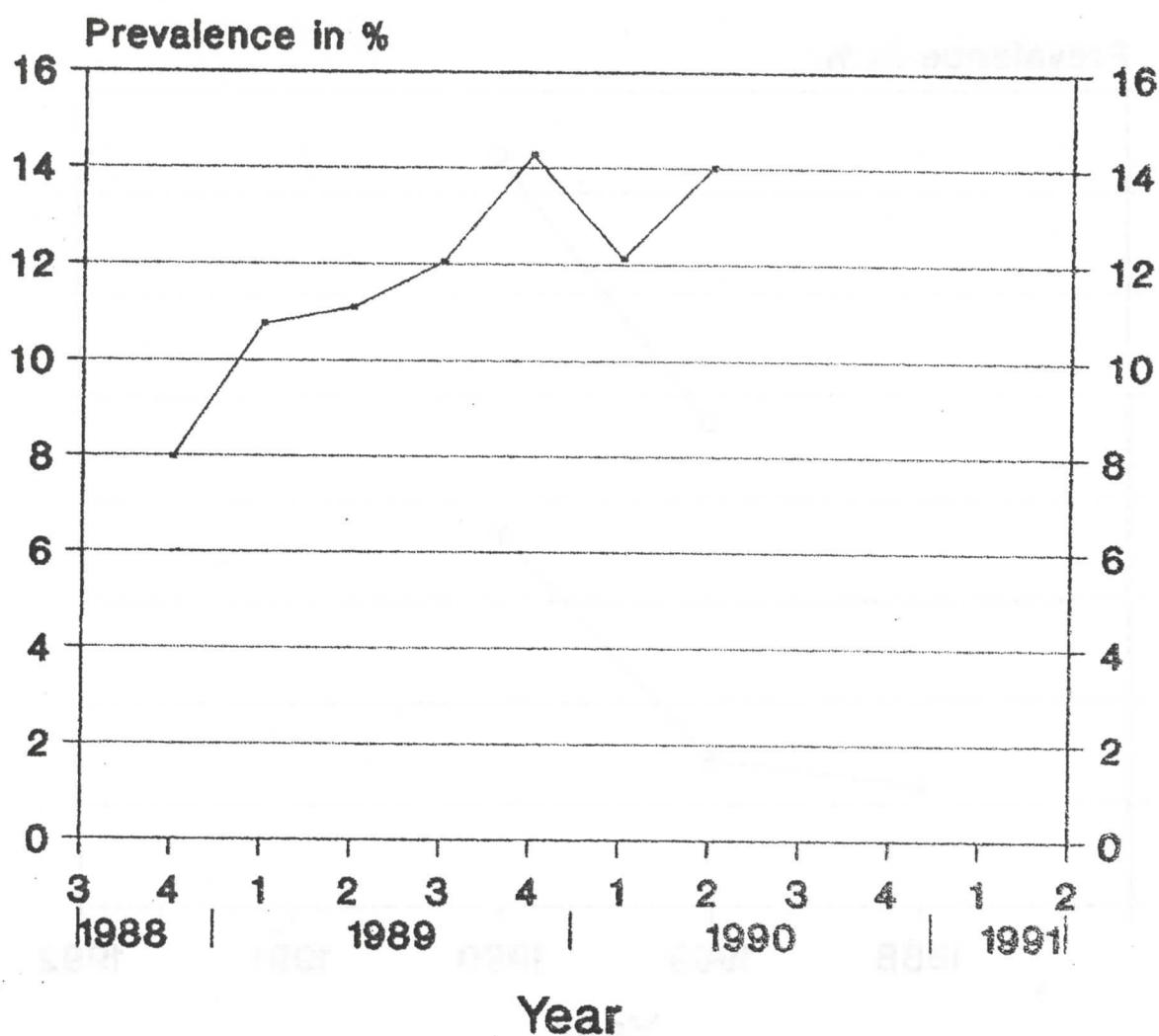
Sentinel Stations :

—*— Mbeya-Rural —□— Mbeya-Urban

FIGURE 2b

NACP - TANZANIA

ANC Surveillance, 1988-1990



Sentinel station :

— Mwanza, Makongoro Clinic

Epidemiology Unit, August 1990

TABLE 5c

Seroprevalence in blooddonors by region, 1986 - 1990

Region	Adult Popul.	Total	Pos.	Prev. %	Rank	Expected
Arusha	716,388	177	0	0.00	20	0
Coast	338,148	1,063	44	4.14	14	13,997
DSMema	656,044	28,533	2,031	7.12	8	46,698
Dodoma	721,251	128	2	1.56	18	11,270
Iringa	640,724	90	18	20.00	1	128,145
Kagera	702,877	137	18	13.14	5	92,349
Kigoma	453,053	356	3	0.84	19	3,818
Kili'jaro	587,610	273	7	2.56	16	15,067
Lindi	342,672	176	5	2.84	15	9,735
Mara	514,599	2,238	111	4.96	12	25,523
Mbeya	782,385	3,593	221	6.15	10	48,123
Morogoro	648,051	3,578	297	8.30	6	53,793
Mtwara	471,432	119	6	5.04	11	23,770
Mwanza	995,484	1,620	114	7.04	9	70,053
Rukwa	368,336	98	14	14.29	3	52,619
Ruvuma	415,163	194	26	13.40	4	55,640
Shinyanga	939,451	60	9	15.00	2	140,918
Singida	419,661	115	5	4.35	13	18,246
Tabora	549,235	928	22	2.37	17	13,021
Tanga	680,327	4,668	341	7.31	7	49,698
TANZANIA	11,942,892	48,144	3,294	6.84		872,482
Adjusted prevalence :				7.31		

Based on 1988 population.

TABLE 5d

Seroprevalence in blooddonors by region, 1986 - 1990

Region	1986	1987	1988	1989	1990
Arusha				0.00	0.00
Coast		2.22	5.43	3.81	
DSM		4.65	7.11	7.46	9.43
Dodoma				1.56	
Iringa				20.00	
Kagera				13.14	
Kigoma				0.84	
Kilijaro				3.16	2.25
Lindi				2.84	
Mara				6.01	3.51
Mbeya		4.36	4.68	4.68	11.11
Morogoro			10.37	6.66	
Mtwarra				5.04	
Mwanza			5.06	7.55	
Rukwa				14.29	
Ruvuma				13.40	
Singida				4.35	
Shinyanga				15.00	
Tabora				2.46	0.00
Tanga				6.67	9.41
TANZANIA		4.55	7.23	6.77	8.13

Adjusted prevalence : 6.76

TABLE 6a

Sex-adjusted prevalence of HIV for blooddonors by age, 1987-1990

Age	Population	1987	1988	1989	1990
		Preval.	Preval.	Preval.	Preval.
10-14					
15-19	2,574,794	0.00	0.95	3.41	7.21
20-24	2,187,150	1.64	5.12	6.98	8.23
25-29	1,531,217	8.21	9.85	7.55	8.19
30-34	1,398,376	9.85	11.58	6.55	11.25
35-39	1,081,442	3.54	4.31	6.15	1.82
40-44	1,054,320	3.30	5.04	9.06	3.48
45-49	777,294	4.80	3.24	4.95	2.20
50-54	655,393	0.00	2.54	2.13	5.37
55+	1,429,187	0.00	0.00	0.00	2.33
Total	12,689,173	3.23	4.66	5.22	6.23

TABLE 6b

Expected number of seropositives by age, 1987 - 1990.

Age	Population	1987	1988	1989	1990
		Expected	Expected	Expected	Expected
10-14					
15-19	2,574,794	0	24,434	87,741	185,591
20-24	2,187,150	35,896	111,943	152,699	179,935
25-29	1,531,217	125,700	150,787	115,549	125,463
30-34	1,398,376	137,775	161,987	91,601	157,288
35-39	1,081,442	38,331	46,656	66,527	19,704
40-44	1,054,320	34,784	53,125	95,563	36,523
45-49	777,294	37,271	25,183	38,499	17,136
50-54	655,393	0	16,661	13,966	35,172
55+	1,429,187	0	0	0	33,348
Total	12,689,173	409,758	590,775	662,145	790,161

FIGURE 3

NACP - TANZANIA

HIV prevalence in blooddonors, 1987-1990

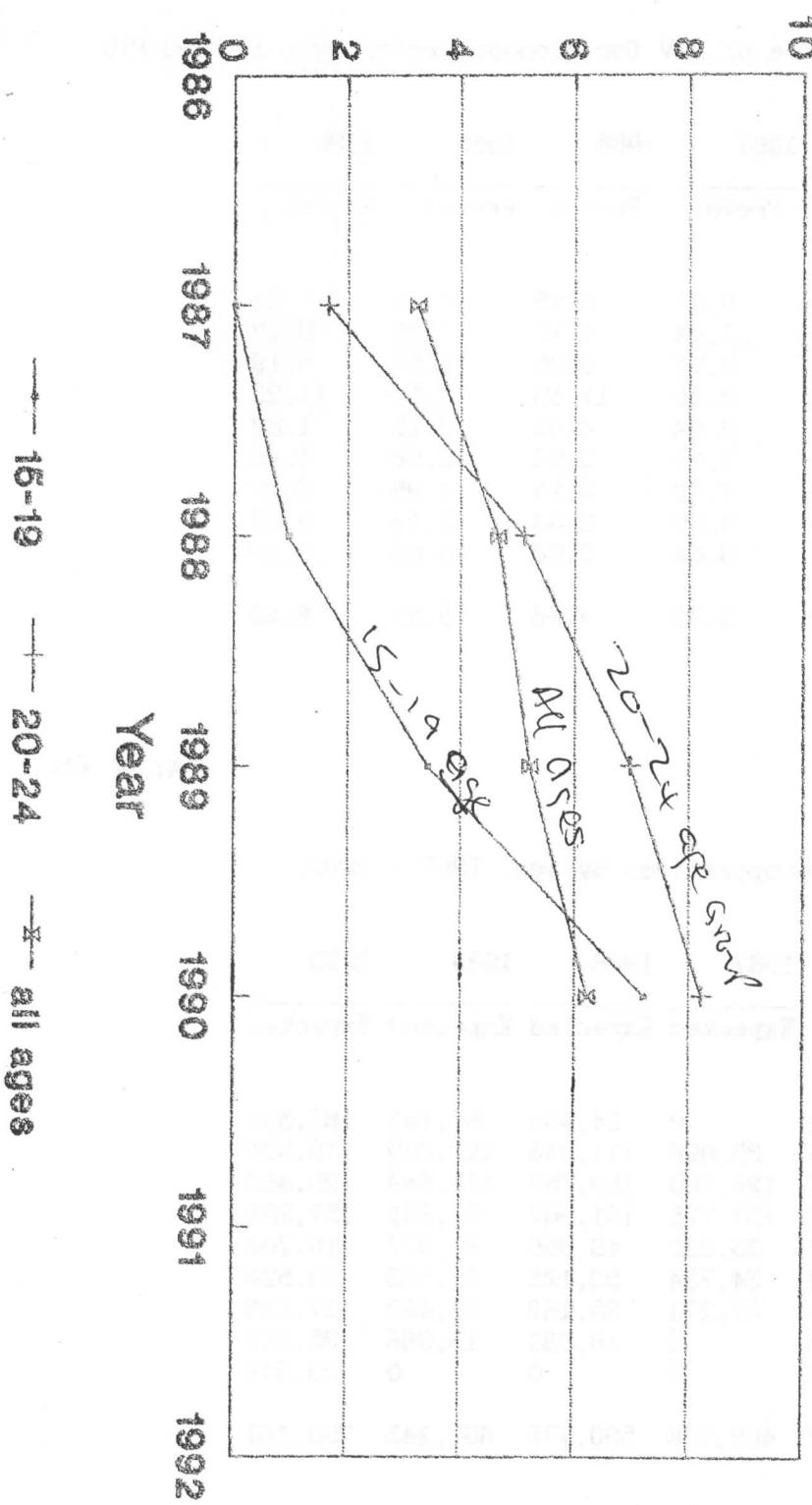


TABLE 7
SURVEYS ON AIDS AWARENESS

AUTHOR	TARGET GROUP	TIMING	SAMPLE SIZE	LOCATION	AWARENESS
A. KAILEMBO	OUT OF SCHOOL YOUTHS	SEPT. 1989	468	DAR ES SALAAM	95 %
EMC NURSES	SECONDARY SCHOOL PUPILS	APRIL 1989	500	DAR ES SALAAM	70 %
NACP REVIEW	HEADS OF HOUSEHOLDS	APRIL 1989	129	MULEBA ROMEO MTWARA TLEJE	87 % (Urban) 67 % (Rural)
LESHABARI	POST SECONDARY STUDENTS	AUGUST 1988	171	DAR ES SALAAM	99.4 %
NGUMA	PRIMARY SCHOOL PUPILS (CLASS 5 - 6)	SEPT. 1989	666	BUKoba URBAN BUKoba RURAL MULEBA	94 %
LESHABARI	LONG-DISTANCE TRUCK DRIVERS	AUGUST 1988		DAR ES SALAAM	97 %

Table 8.

Percentage of Awareness of AIDS by background characteristics of Respondents (source : Muhondwa et al. 1990)

1.	Sex	Male	99.4
		Female	98.8
2.	Age	< 20	98.8
		21 - 25	99.8
		26 - 30	99.7
		31 - 35	99.2
		36 - 40	99.1
		41 - 45	98.3
		46 - 50	96.8
		51 - 55	95.7
		56 - 60	91.9
		61 - 65	100.0
3.	Education	None	97.9
		Primary	99.5
		Secondary	96.6
		Higher	100.0
		Other	100.0
4.	Religion	Catholic	96.5
		Protestant	99.2
		Islam	99.5
		Other	98.3
5.	Region	Dar es Salaam	99.5
		Pwani (coast)	100.0
		Morogoro	100.0
		Tanga	98.3
		Kilimanjaro	100.0
		Arusha	100.0
		Dodoma	93.2
		Ruvuma	92.5
		Iringa	100.0
		Mbeya	97.7
		Rukwa	93.6