

Equity in Health Sector Responses to HIV/AIDS in Tanzania



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TABLE OF CONTENTS

Executive summary	3
1. Introduction	5
1.1 The AIDS epidemic in Tanzania	5
1.2 The impact of the HIV/AIDS epidemic	6
2. Social and economic inequity in Tanzania	7
2.1 Geographical differentials in economic and social indicators	8
3. Equity in the health system	9
3.1 Organisation of health services	9
4. Equity in health sector financing	12
5. Health sector reforms	13
6. Current response to HIV/AIDS	14
6.1 The policy response	14
6.2 Finance HIV/AIDS Control	15
6.3 Interventions and programmes	16
7. Strategies for responding to equity issues	20
8. Conclusions	21
References	23
Annex	26

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Executive Summary

This paper presents an analysis of the manner in which economic and health inequalities in Tanzania influence equity in access to health care and responses to HIV/AIDS. It is estimated that globally there are 42 million people suffering from AIDS of whom 29.4 million are found in Sub-Saharan Africa. HIV/AIDS was first described in 1983 in Tanzania, and has since spread dramatically. The prevalence in Tanzania has been found to vary between 1.6% of the population in rural areas to 28.6% in urban areas.

HIV/AIDS has had an impact on all sectors of the society. It has been the leading cause of adult death with a proportional mortality ratio from AIDS ranging from 30.2 percent to 44.5 percent. The number of tuberculosis patients has increased substantially. The morbidity and mortality from AIDS has negatively affected schooling, agricultural and economic sectors in Tanzania.

Industrialized countries have been able to use their ample resources to control and treat HIV/AIDS. However the overwhelming poverty in Sub-Saharan Africa countries has left a massive social deficit that has undermined efforts to manage the AIDS epidemic. Hence even while the United Nations has made a global commitment to the Millennium Development Goals (MDG), including addressing HIV/AIDS and poverty, the poverty burden and weakness on economic and social institutions threatens the achievement of these goals. Like other developing countries with high HIV/AIDS burdens, Tanzania faces significant challenges in meeting its UNGASS commitments on the goals. The paper explores these challenges and the responses to them.

The paper draws from secondary data sources and interviews. The evidence indicates that poor economic performance in Tanzania has compromised its ability to address HIV/AIDS. While the most critical constraint is an absolute shortfall of resources, there are several equity issues that arise within the health sector. Within Tanzania, there is a significant variation in resource availability for health by geographical area. The health service referral system has performed poorly, leaving the primary health care services poorly supported and financed, even though these are the services most relevant to support of community prevention Home Based Care (HBC) initiatives. Government and Donors have made efforts to increase financial resources to these levels, but this is threatened by capacity shortfalls at district level, in both human and material resources. At the same time the clients to lack the information and means to make more effective use of services. Such factors threaten equity in access to new antiretroviral treatments for HIV/AIDS and the implementation of HIV/AIDS control activities, despite political commitments and the comprehensive policy intentions.

Strategies are needed to address these equity gaps. Such strategies should address the absolute and relative resource shortfalls to rural areas, to certain districts and to district and primary care levels of health systems. Health sector reforms that have placed significant emphasis on district roles and powers, need to also address the capacities to

use these roles and thus to ensure equitable access to ART. Financing reforms and new funding mechanisms need to ensure that they provide for the risk pooling and comprehensive cover that is needed if health services are to reach poor people as a vehicle for equitable access to ART. There are lessons from experience in Tanzania for new programmes, including for the Global Health Fund. The experience of donor participation in primary health care indicates that while donor funds can provide necessary resources, specific attention needs to be paid to measures for ensuring integration into national health systems and for ensuring the sustainability and continuity of those programmes supported by donor funding. This demands an increased share of financing from government funds and greater attention to supporting overall health systems capacities within specific programmes.

Equity in Health Sector Responses to HIV/AIDS in Tanzania

1 Introduction

This paper presents an analysis of how economic and health inequalities in Tanzania influence equity in access to health care and responses to HIV/AIDS. It is a part of a series of papers being produced under a joint programme of the Southern African Regional Network for Equity in Health (EQUINET)¹ and Oxfam (GB) in co-operation with IDRC and DfID on equity in health sector responses to HIV/AIDS. The programme, initiated in February 2003 aims to identify policy issues and options to strengthen equity in health sector responses to AIDS. A regional workshop and review panel identified the key areas for analysis at country and regional level. In line with this framework, EQUINET and Oxfam have commissioned a series of country studies from four countries in southern Africa, a regional study, and theme papers on HIV/AIDS equity issues in relation to health personnel, to food security and nutrition and gender equity.

This paper presents the findings of the Tanzania country study. It is based on published and grey literature and interviews. It presents evidence of social and economic differentials between income groups and geographical areas, and explores the impact of health sector reforms and health resource distribution in dealing with these in health care access in Tanzania.

1.1 The AIDS epidemic in Tanzania

Of the 42 million people globally living with AIDS, 29.4 million were in Sub-Saharan Africa, implying that a sub-continent with 10% of the world population had about 20% of the global burden of disease (Avert, 2003; Murray *et al.*, 1994).

HIV/AIDS in Tanzania was first described in 1983 from a region in the Northwest of the country (MOH & NACP, 1997). In the early stages of the epidemic AIDS predominantly affected sexually active people living in urban areas, with low incidence in the rural population. However, the spread of HIV in rural areas has increased and is now rising rapidly. For example in Moshi rural the prevalence of HIV among antenatal women increased from 6.4 percent in 1992 to 16.6 percent in 2000. Another rural area in Mbeya region the prevalence rose from 5.6 percent in 1996 to 23.3 percent in 2000. (United Republic of Tanzania, 2002). HIV infection was primarily through heterosexual sex, accounting for more than 80% of transmission. The remaining infection was through vertical transmission from HIV infected mother to newborn child during pregnancy, birth or postnatal during breastfeeding (Mhalu & Lyamuya, 1996). The risk of HIV infection was highest among commercial sex workers, drivers who were driving heavy duty trucks going to long distances and bar maids (Mnyika *et al.*, 1996a; Girdler-Brown, 1998). By 2000, the estimated national cumulative AIDS rate was 321.2 per 100,000 and the

¹ See www.equinet africa.org

cumulative number of HIV/AIDS cases reported nationally was 105,481 (United Republic of Tanzania, 2002). Within these national statistics there was wide regional variation.

The highest number of cases reported in the year 2000 was 3264 in Mbeya region, with a rate of 155.6 per thousand followed by Coast region with 117.4 per thousand. The least was in Iringa region with 6.2 per 1000 followed by Singida with 6.3 per 1000. Community based studies in different areas of the country reveal varying levels of infection: A study in Arusha region reported HIV prevalence rates of 1.6% in rural areas, 2.2% in semi-urban areas, 10.7% in low social economic urban communities and 5.2% in high social economic urban communities (Mnyika *et al.*, 1996b). The same study found a prevalence in males of 1.7% and in females of 6.5%. A study in Kagera region found HIV prevalence rates ranging from less than 1% in rural areas to 24.2% in urban areas, with male : female prevalence rates of 16.9% and 28.6% respectively (Killewo *et al.*, 1990). These studies indicate that poor urban areas, women and young people are most susceptible to infection.

1.2. The Impact of the HIV/AIDS epidemic

The impact of the epidemic has been felt at household, community, health system levels and across production sectors. Households have reported increased medical expenditures, absenteeism, and low productivity (Bollinger *et al.*, 1999). Communities have experienced reduced production, reduced manpower, increased needs of orphans, increased needs of elderly and reduced school enrollment. (Coombe, 2000). AIDS has increased medical expenditures, with an estimate of 17 illness episodes in HIV-1 infected adults before death (Ministry of Health, 2003a). This leads to increased demand for medical care, increased disability days and increased cost of care. HIV infection has increased the annual risk of developing Tuberculosis (TB) infection to 10% annually compared to the previous *lifetime* risk of 10% (Ministry of Health, 2001). HIV/AIDS was a cause of death in 35.5% of all male deaths in Dar es Salaam, 24.1% in Hai district and 14.2% in Morogoro district (Ministry of Health, 1997). HIV/AIDS is thus a leading cause of adult mortality. This is intensified in females, with rates of 44.5% in Dar es Salaam, 34.%, in Hai and 30.2% in Morogoro. The study in Kagera region found HIV prevalence rates among medical and gynecological admissions of 40.4% and 41.2% respectively (Kwesigabo *et al.*, 1999).

HIV has led to a significant orphan population and increased morbidity in affected children (Ainsworth & Semali, 2000). The study in Kagera found that 4% of under 5 year old children had lost their mother, 10% had lost their father and 1.3% had lost both. Maternal orphans and paternal orphans who were poor had the highest levels of stunting (59.3% and 59.3% consecutively). Other studies have reported similar observations i.e reduced production, reduced manpower, increased needs of orphans, increased needs of elderly and reduced schooling (Coombe, 2000).

At the level of health systems, the impact has included increased demand and overstretching of admission facilities due to increased morbidity from opportunistic infections and tuberculosis (Kwesigabo *et al.*, 1999); (Chum *et al.*, 1996). At national level it was predicted that the epidemic would reduce GDP by third of a percentage annually. (Over, 1992).

Global comparisons indicate that the burden of HIV/AIDS has been most profound on the poorest countries. Hence the epidemic has depleted resources, and exacerbated poverty and inequality from household level upwards.

Several studies of the association between poverty and health status in developing countries give evidence of the factors influencing health care access in relation to HIV/AIDS. A World Bank analysis of demographic and health surveys found significant differentials between rich and poor households in levels of ill health and mortality, and in access to and use of health services in Tanzania (Gwatkin *et al.*, 2002). Similarly Schellenberg *et al.* (2003) studying under five year old children in a four rural districts in Tanzania found that household income was significantly and positively associated with health care seeking behaviour in households (Schellenberg *et al.*, 2003).

Industrialised countries have responded to AIDS with a mix of improved access to information, counseling and provision of highly active antiretroviral treatment (HAART). Using these interventions, these countries have managed to significantly reduce the levels and thus impact of HIV/AIDS. Such resources, particularly for HAART, are not available to low income countries and within these countries, access to treatment is currently limited to a very small proportion of those in need.

These global inequities threaten global commitments. The Millennium Development Goals (MDG) ratified by UN member states at the United Nations General Assembly Special Session (UNGASS) in June 2001 defined the development goals for countries to achieve by 2015 (UN Statistics Division, 2003): The goals include that by 2015 countries should have by have combated HIV/AIDS, including through making HAART available. Resources through UN agencies are now being made available to achieve the goals. This resource mobilization includes resources from the Global Fund for HIV/AIDS, TB and Malaria, from debt relief for highly indebted countries and from bilateral and international agency and private foundation aid.

Like other developing countries with high HIV/AIDS burdens, Tanzania faces significant challenges in meeting its UNGASS commitments on the goals. The paper explores these challenges and the responses to them. The paper explores the equity implications if treatment and care are to be sufficiently widely accessible to meet the MDGs.

2. Social and economic inequity in Tanzania.

Tanzania has an area of more than 900,000 sq. kms. with a population of more than 34 million people (Bureau of Statistics Tanzania., 2003). About 80 percent of the population lives in the rural areas. The country is divided administratively in to 21 regions and 120 districts. The main economic activities are agriculture, fishing and the service sector (teachers, health workers, extension workers). The main agricultural products are coffee, cotton, tobacco, cashew nuts, maize, rice, banana; cassava, vegetables and fruits.

The AIDS epidemic increased at a time of declining economic performance in the early 1980s, with a rising trade deficit, rising debt levels and falling value of the local currency (See Table 1). Tanzania's real GDP per capita rose from US\$461 in 1995 to \$480 in 1998, when it was the lowest in the Southern African Development community (SADC) *Region* (SADC/ SAPES Trust 2000) In response to deficit and debt levels, the

government implemented a structural adjustment program (SAP). This was associated with reduced government spending on health.

Table 1 Trends in selected economic indicators, Tanzania 1970-2000*.

Indicators	1970	1980	1983	1985	1990	1995	2000
Balance of external trade (deficit) Millions (local currency)	-241	-5434		-10793	-111907	361150	605200
% budget on health	4.9	1.3	0.1	3.5	2.2	3.4	ND
External debt in Millions Tanzanian shillings	32	241		1206	25579	61997	6570000
Currency exchange rate. Tanzanian shillings to one US dollar.	7.2	8.2	9.5	17	196	595	970

*Source: (United Republic of Tanzania, 1995b) ND=no data

However the SAP did not make the expected economic improvements in national GDP, deficit and debt levels as these were more affected by declining terms of trade, increased import costs and the falling value of the local currency. Tanzania thus continued to borrow heavily both internally and externally (Buchmann, 1996). This continued to put pressure on social sector financing, including health. The increase in poverty and reduction in social spending associated with SAP noted in other countries was also experienced in Tanzania, worsening the well being of the population and increasing the risk of disease, including HIV/AIDS (Peabody, 1996) (Kalipeni, 2000).

2.1 Geographical differentials in economic and social indicators

In addition to widening international and national inequalities in wealth, Tanzania continues to experience significant geographical variation in economic and health indicators (See Table 2). There is a wide variation between regions and between urban and rural areas in primary school enrollment, ranging from 85% in urban Iringa and Kilimanjaro to 40% in rural Lindi. Urban areas generally have higher rates of school enrolment, improved access to drinking water, and improved economic status compared to rural households.

Table 2. Social and economic indicators, Tanzania 2000*.

Region	Percent enrolment to primary school 2000		% Households within 1 km of drinking water 2000		Mean expenditure per adult equivalent (price adjusted)** 2000		Percent of individuals below the basic poverty line 2000	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Dodoma	82.1	53.9	62.8	46.6	13,675	10,176	21.5	36.3
Arusha	71.6	50.8	85.5	38.9	14,016	9,417	18.5	42.6
Kilimanjaro	85.7	79.9	72.8	56.2	13,265	11,060	26.3	31.9
Tanga	71.7	48.8	71.4	38.2	14,036	9,903	18.8	37.9
Morogoro	69.8	58.1	71.4	58.1	14,737	10,344	20.2	32.1
Pwani	56.1	56.3	79.7	50.6	11,106	9,537	39.2	48.2
Dar es Salaam	70.5	80.6	NA	NA	NA	NA	NA	NA
Lindi	63.0	40.4	59.5	44.8	11,726	8,399	33.4	56.9
Mtwara	66.0	57.8	73.5	33.2	11,569	10,105	31.9	39.4
Ruvuma	70.8	62.0	92.6	89.2	13,689	9,793	28.6	43.6
Iringa	85.8	75.3	72.7	71.8	15,328	11,527	15.6	30.1
Mbeya	75.6	65.1	84.5	71.3	16,047	13,167	15.0	23.2
Singida	72.4	60.2	54.4	51.0	11,874	7,911	30.2	57.7
Tabora	60.4	54.8	77.2	49.3	15,839	10,437	17.3	27.4
Rukwa	71.0	79.9	74.4	61.3	11,833	9,590	25.7	31.8
Kigoma	69.7	44.3	51.3	56.0	14,328	9,243	31.0	38.5
Shinyanga	68.6	44.6	40.4	32.4	15,722	8,886	3.7	44.1
Kagera	61.3	58.8	59.4	43.6	16,110	11,068	16.5	29.3
Mwanza	65.0	49.7	70.8	32.0	9,994	10,252	46.3	48.3
Mara	84.6	58.4	78.6	22.3	9,276	8,927	44.5	45.8

* National Bureau of Statistics Source Household Budget Survey 2000/2001. NA=data not available

** The expenditures are adjusted to adult expenditure. Child expenditure was taken to be a portion of adult expenditure. The equivalent expenditure price adjusted means that unit prices were adjusted for prices and inflation based on point in time prices (1998/99)

The evidence indicates that households in remote regions and rural areas have both the poorest economic status and greatest levels of social exclusion.

3. Equity in the health system

3.1 Organization of health services.

The health delivery system in Tanzania is organized hierarchically in five levels with a broad based primary level of care, consisting of dispensaries and village health posts, reaching to a narrow apex of national and zonal consultant hospitals (See Table 3).

Table 3: Administrative and Public Health System*

Administrative level		Public Health Facility			
			Public	Volun- tary	Private
Level	Number	Facility type	Number	Number	Number
Zone	6	Tertiary hospitals	4	-	-
Region	20 (21)**	Secondary hospitals 1 in each region	17	-	-
District	120	Primary hospital 1 in each district	85	81	42
Division	372	Health centre	292	69	41
Ward	2000	Dispensary	2683	598	1099
Village	11000	Village health post	4000	-	-

*Source: Ministry of Health; Health Statistics Abstract 2002

** A 21st region was created in 2002.

The country is divided into 21 regions², each with a population ranging from 450,000 to 2 million people. Each region consists of 4-5 districts, with a population in each district ranging from 100,000 -300,000 in rural areas, and up to a million in urban areas. Most regions (17 out of 21) have regional hospitals, in theory staffed with medical specialists, trained medical and paramedical staff. These hospitals have diagnostic facilities and are expected to serve as training centers for various types of health workers. To provide support services to regions and districts, the Ministry of Health created six 'zones' grouping three to four regions in each. together; in all there are six zones. Through the ongoing health sector reforms, some health functions are now being decentralized to local government through the 23 urban local authorities and 97 rural district councils.

Most districts have a district hospital owned by Government or Voluntary Agency to serve the average population size of 250 000. The district hospital is the first referral center from the primary health care delivery points. It provides curative and preventive health services and serves as an in service training center for district staff.

Within districts, health services are provided through health centers and dispensaries at divisional and ward levels respectively. In the past the health system ended at a dispensary level until the early seventies, when it was realized that the plan of every village having a dispensary was not feasible. At that time, village health workers (VHWs) and village health posts were introduced to fill the gap. These village health workers were voluntary community personnel, in theory paid by the village authorities, although many did not receive any pay. They received some supervision from the district health management team and district primary health care committees. This left many VHWs in an insecure position. When the health system found itself unable to deal with the demands related to HIV/AIDS, the outreach of home based care (HBC) for HIV/AIDS used both the positive and negative experience provided by the VHWs. One of the lessons learned from the VHW programme was that effective primary health care programmes, including HBC, call for a stronger link between community mechanisms like the VHW and the district health system and more sustainable mechanisms for their financing to facilitate the delivery of primary health care.

² The 21st region was established that year, so that data on its resources and other parameters are not yet available.

The five-tier health system provided for increasing technical expertise in the management of patients with higher levels of care, but with patients treated at a level appropriate to the nature of their health problem and referred to higher levels where clinically necessary. However evidence indicates that the system is not functioning according to this theoretical provision for a number of reasons:

- Reported poor quality health care, particularly at lower levels
- Poor functioning of the referral system, with some patients jumping levels of care, particularly to tertiary care (Ministry of Health, 1994).

Poor skills, lack of equipment, poor quality of care and a poorly functioning referral system contribute to inequity, with more remote and poorer communities experiencing poorer quality care (Ministry of Health, 1998). A study in Dar es Salaam of maternal deaths revealed that 77% of maternal deaths had received sub-optimal care, due to low level of skills and poor structural quality (Urassa *et al.*, 1997). A further study of referrals to psychiatric care at tertiary level in Dar es Salaam revealed that in an urban setting, more than 50 percent of the referrals were from dispensaries and other primary care facilities (Matuja *et al.*, 1995). The performance of the referral system was found in studies to depend on the distance traveled to the referral point (Le Bacq & Rietsema, 1997)..

The quality of primary health provided depends largely on the resources made available. As shown in Table 4, this varies widely between regions.

Table 4. Inequity in health resources and access by region, Tanzania.

Region	Population per Medical Officer generalist* 2000	Population per Nurse A generalist* 2000	Percent population within 6 kms. from health facility** 2000	Mean distance to a hospital in the year 2000 in kms**.	
				Urban	Rural
Dodoma	47524	9901	48.5	3.0	40.5
Arusha	36330	11160	72.7	1.7	14.5
Kilimanjaro	17179	5008	94.7	6.8	9.9
Tanga	32299	7986	61.9	14.1	30.4
Morogoro	37787	8864	74.6	3.3	30.7
Pwani	23282	8911	74.1	18.9	25.9
Dar es Salaam	6243	2270	98.1	DN	DN
Lindi	38225	10376	67.5	5.2	26.2
Mtwara	31483	11619	86.6	7.4	21.8
Ruvuma	29821	9003	85.4	2.5	25.2
Iringa	38421	11020	62.9	8.0	19.8
Mbeya	28130	8210	90.4	7.6	26.7
Singida	66786	12808	81.8	2.8	13.9
Tabora	107947	14660	58.3	6.0	15.5
Rukwa	32695	16070	82.1	1.8	76.6
Kigoma	58989	17290	92.7	5.6	22.5
Shinyanga	126518	25605	65.0	13.5	19.7
Kagera	99336	25605	73.7	13.6	25.8
Mwanza	73736	8964	75.0	16.4	34.1
Mara	51553	11740	71.2	2.9	15.5
National		3096	75	5.9	25.6

*Source: *Ministry of Health (United Republic of Tanzania, 1995a), **Bureau of Statistics Tanzania Household Budget Survey 2000/2001, DN=data not available

The population per medical officer ranged from 126 518 in Shinyanga region to 6 243 in urban Dar es Salaam. Similar variations were also found for access to health care, indicated by the percentage of people within 6 kilometers of a primary health facility and distance to a hospital. These variations indicate that urban districts are better served and have better health care access than rural, while regions such as Rukwa, Dodoma, Tabora perform poorly on selected access indicators. There is thus inequity in access to health care and health personnel distribution by region, with urban areas better served than rural areas and selected regions having significantly poorer access.

4. Equity in health sector financing

The inequities described above relate to both the overall level and the distribution of health financing. Attention has thus been given to the under financing of health systems in developing countries. The Tanzania Public Expenditure Review for 2002 revealed that while government health spending has consistently stayed at about 10% of government discretionary recurrent expenditure, absolute expenditures on health have increased from about 124 billion Tanzanian Shilling in 1998/99 to about 215 billion shillings in 2002 (actual increase). increase signals sustained commitment to health financing, two important constraints emerge: The first is reliance on external funding, with about 53% of this public spending from donors. The second is that the expenditure per capita on health still translates to about US\$5.88, significantly less even than the minimum level recommended by the World Bank of of US\$12 per capita³. (Ministry of Health, 2002b)..

In 2002 government allocation per capita in to regions ranged from 887 Tanzanian shillings US\$0.88 to 2288 T Shillings (US\$2,3) in Coast region⁴.

The cost of drugs is similar for all regions thus the differences could reflect inequity in resource allocation as well as issues unique to each region i.e planning and management, morbidity etc.

While overall allocations have remained low, there have been important efforts to more equitably distribute available resources, with budgetary allocations to districts increasing from 18% in 1998 to 31% in 2002. Districts were also able to raise income for health through cost sharing and the Community Health Fund (CHF) These sources together made available 47,058,607 Tanzanian Shillings out of 423,032,156.00 shillings spent in 18 districts in the year 2000, raising a further 0% to 22.2% of total district expenditures.

This improved allocation nevertheless faced problems of capacity to benefit, with reallocations are made in real expenditures. Analysis of 2002 expenditures indicate that 34.5% of the budget was disbursed off budget, ie did not follow budget plans. Analysis of actual health expenditure vs line item budget allocation on drugs, for example, indicated variations of between 53% underspending to 123% overspending (Ministry of Health, 2003b)

A further problem is that of donor financing being driven by program and geographical preferences. Inequity district financing is thus an outcome of donor mode of operation,

³ The World Development Report 1993 urged countries to increase expenditure on health to 12.0 US dollars per capita(World Bank, 1993).

⁴ One US dollar was approximately 1000 shillings

government disbursement levels, and administrative capacities to plan budgets and collect revenue locally. The government is currently working on a formula to allocate resources to districts that factors in poverty and equity issues.

The Community Health Fund and cost sharing schemes were introduced under the health sector reforms to increase resources for health. However evidence indicates that cost sharing has raised less than 25 percent of district health financing, and that subscribers to community health fund are declining (Munishi, 2003). The reasons for declining membership include inability to afford the payment and dissatisfaction with the quality of care provided. Further resource mobilization is now coming through the National Health Insurance Fund (NHIF), introduced in 2003. The NHIF covers public sector employees, who contribute 3% of their salary monthly, with employers contributing a further 3% of the members salary (National Health Insurance Fund (NHIF), 2003). Currently the NHIF excludes treatment Tuberculosis as it is paid for through government budgets, and covers only treatment for HIV/AIDS complications and opportunistic infections, and not for ART. The NHIF covers a small share of the population, particularly the more educated, formally employed population. While it may relieve household burdens of treatment, improved equity in access to treatment for the poor will largely continue to be dependent on government funded health services.

5. Health sector reforms.

This makes the reforms being carried out in the Tanzanian health sector a critical issue for ensuring access to treatment and care for HIV/AIDS. As noted earlier, with SAPs, government reduced health spending, encouraged private for profit health care providers, and introduced cost sharing and user fees (Lugalla, 1993). The wider economic measures in SAPs (trade liberalization, currency devaluation, privatization of public investments) led to job loss, reduced real incomes and increased rural-urban migration. These factors were noted earlier to increase the risk environment for HIV (through poverty, migration, family separation etc). The negative economic environment and reduced health care financing and access under SAPs combined to create a hostile environment for control of the AIDS epidemic.

Tanzania mainland initiated a process of reforming its public sector in the 1990s, through the 1992 Civil Service Reform Program (later to be known as Public Sector Reform Program (PSRP) under the Office of the President (Government of Tanzania, 2000). The PSRP was used to redefine the role of the state, including a level of withdrawal from the direct production of services and goods, and enhancing participation of NGOs and the private sector in the delivery of goods and services. Civil service restructuring led to reduced employment, raised pay levels of remaining employees, rationalization of government structures and tiers and control measures for public expenditures.

The PRSP also involved the restructuring of regional administrations. A decentralization and local government reform programme included political devolution of powers to councils, transfer to councils of financial discretionary powers and powers to levy taxes leaving central government obligations to provide grants to local government; de-linking local authority staff from their respective ministries with procedures for establishment of a local pay roll and redefining central – local relations to provide for central government powers and roles for policy making, monitoring and quality assurance and control (Local

Government Reform Component, 1996): At a practical level these reforms further rationalized and reduced public sector employment.

The health sector reforms were initiated in 1993 through a process of problem identification, formulation of the reforms and planning ((MOH, 1994). Eight major strategic areas were identified, viz: 1: provision of accessible, quality, well supported, cost-effective district health services through devolution; 2: Provision of quality secondary and tertiary level health services; 3; redefinition of the central Ministry of Health role; 4: human resource development; 5: provision of central support; 6: ensuring adequate health financing; 7: addressing an appropriate public/private mix; 8: enhancing Ministry of Health and donor coordination (MOH, 1999). A Second Health Sector Strategic Plan (HSSP) was initiated in 2003 that added a ninth strategy focusing explicitly on HIV/AIDS, and giving emphasis to HIV/AIDS in health sector reforms.

The HSSP prioritized addressing poverty and vulnerability, equitable service delivery, gender mainstreaming, output based performance monitoring, fostering partnership, intersectoral collaboration and community participation and integration of vertical programs, including on AIDS, into comprehensive district health plans. While AIDS was introduced into the HSSP, a further change was also made in 2002. Prior to this, the multi-sectoral response to AIDS and its resources were located in the Ministry of Health, overloading budgets and capacity in the Ministry. After 2002 these budgets and roles have been spread to other sectors.

6. Current response to HIV/AIDS epidemic in Tanzania.

6.1 The Policy response

In 2000, the President of Tanzania announced the formation of Tanzania Commission for AIDS (TACAIDS), formalized through an Act of parliament (United Republic of Tanzania, 2001b). The Act established Tanzania commission for AIDS (TACAIDS) under the Prime Ministers office. TACAIDS was given national responsibility for the control of HIV/AIDS across all sectors, under the national Vision 2025 whose goal was to eradicate poverty by the year 2025. These policies were implemented through the National Poverty Eradication Strategy, Tanzania Assistance Strategy (TAS) and Poverty Reduction Strategy Paper (PRSP)⁵.

TACAIDS formulated a National Policy on AIDS, inaugurated by the President in 2001 to signal political commitment (Prime Minister's Office, 2001). The main policy objectives included:

- Prevention of transmission of HIV/AIDS
- Promotion of HIV testing
- Caring for Persons Living with HIV/AIDS
- Defining and positively enhancing sectoral roles and financing

⁵ PRSP is a medium term strategy for national development and poverty reduction. The aims of PRSP are focused on creating conducive macroeconomic environment, efficiency in budgetary expenditure, fostering the reforms, achieving sustainable economic growth and combating HIV/AIDS. PRSP was a precondition for a country to qualify for debt relief within the highly indebted countries (HIPC).

- Research
- Legislation and Legal issues others were;
- Human rights in HIV/AIDS; monitoring efforts towards community mobilization for people living with HIV/AIDS; treatment of opportunistic infections and establishment of intersectoral collaboration.

Policy implementation would take place across sectors through the National Multi-sectoral HIV/AIDS Framework (NMSF), giving goals, targets and strategies in all sectors and using resources provided for in the PRSP and the Medium Term Expenditure Framework (MTEF). By the beginning of 2003 the Ministry of Health had developed its HIV/AIDS strategy for 2003 to 2006, while other sectors and ministries were still in the process of preparing sector HIV/AIDS situation analysis.

The Ministry of Health strategies included rationalizing a previously vertical National AIDS Program (NACP) responsible for all HIV/AIDS activities into an integrated Ministry programme co-ordinated with other sectors through the Prime Ministers Office. Integration and co-ordination is also proposed at the level of local government from village committee upwards. Decentralized structures for HIV/AIDS control already exist at regional and district level and will now be extended to village and ward level. These local government mechanisms will make plans around HIV/AIDS that will be integrated in to the overall district development plan. This co-ordination will include services at community level through non-government organizations (NGO) and a range of training and support structures at regional and zonal level.

Several equity issues arise here. While the policy provides for access and equity concerns, there is likely to be an equity gap in implementation, due mainly to the existing inequities in the health system described earlier. Many of the districts have inadequate planning and implementation skills. Districts will plan within a given national framework which does not consider the local problems. Many hospitals lack technical capacity to follow up patients on treatments, including ART. There is a bias in the distribution of private facilities towards big urban centers, which means that private sector co-operation in poorer rural areas will be limited to NGOs. While guidelines for the establishment of home based care and management of HIV/AIDS care have been published by the Ministry of Health, there are no mechanisms to ensure that these and other guidelines are adhered to. Home based care is threatened by lack of community support, and health provider support due to lack of integration, lack of resources, distance and the poorly functioning referral system described earlier. Unless additional and specific policy attention is given to these equity constraints it is likely that the universal access and poverty reducing aspirations of the policy may be compromised.

6.2 Financing HIV/AIDS control

The Ministry of Health projected a total expenditure for 2002/3-2004/5 on HIV/AIDS of US\$178.63 million, 55% of which would be contributed by donors (Ministry of Health, 2003b). The 45% committed by government is an increase in government contribution compared to 1990 levels of less than 17% government share of contribution to HIV/AIDS/STI spending (Tibandebage *et al.*, 1998). A 1997 study indicated that government expenditures in the 1990s prioritized malaria (which received 18.4% of spending and parental/maternal health (14.2%) with AIDS/STI receiving only 13.5% spending at that time (Tibandebage *et al.*, 1997). For years 2002 and before

expenditure data would be available from the National AIDS programme. Data was still being retrieved to understand what was the expenditure on HIV/AIDS in and before 2002

6.3 Interventions and programmes

Policy framework

Currently, the programme for HIV/AIDS control provides for establishment of Voluntary Counseling and Testing (VCT), functioning HBC, and comprehensive HIV/AIDS care including TB DOTS.

The frontline of care for HIV/AIDS is currently provided at community level through Home based care. Home-based care (HBC) was defined as any form of care with a goal of providing hope through good quality and appropriate care that helps patients and families maintain their best possible quality of life⁶. TACAIDS has a programme of support to HBC that aims to scale up HBC programmes and support and involve communities. HBC is currently run by NGOs who are based in urban areas and who also rely on foreign financing. It also require backstopping from the health system. These raises important equity issues as many NGOs serve relatively small urban areas and some of the easily accessible areas. HBC is yet to be integrated into the official district health care system hence backstopping from the health system would not be regulated and will differ from place to place.

Prevention and management of Opportunistic Infections (OI) is being done through prevention, early treatment of disease and development of guidelines for management, establishment of referral system and ensuring effective diagnosis, integrated with other programmes. Some of the health providers are not informed on how best to care for opportunistic infections, they also could not realize the significance of opportunistic infections against others. Thus OI would be given low priority in care provision and procurement thus compromising the expected quality of care.

The programme aims to establish a capacity for antiretroviral therapy management and client follow-up mechanism, with at least five HIV clinics at 4 referral hospitals and one regional hospital for the provision of HAART as part of continuum of care. It proposed to scale up access to HAART stepwise from tertiary centers in the first instance to potentially include districts. This will be backed by a clear policy on the financing of HAART in Tanzania and on accreditation of institutions and health care professionals who will be involved in prescribing, storing and dispensing ART. Many of those in need of the HAART, however, have limited access to hospitals due to distance and or financial needs. As a result the pilot phase (or start up phase) will not addressing the

⁶ HBC includes:

- models of home based care and psychosocial support in all districts.
- home care support and psychosocial support to all trained community based health workers and volunteers
- capacity development for home based care and psychosocial support among categories of personnel involved in home care including palliative care.
- A monitoring and evaluation mechanism
- Identification of social needs of PLWA and existing services that patients can access
- A link between social services and health.

needs of those with poor access to services, leaving a gap to be addressed on how communities in geographically disadvantaged areas will access HAART.

Specific efforts are proposed to link AIDS and TB programmes from district to national levels, including health worker training and public sensitization in both TB and HIV management, ensuring availability of testing facilities for both diseases and public sensitization on their use and clear referral mechanisms. It is proposed that VCT centers be set up at TB treatment centers, and joint HIV/TB clinics be set up. One single important cause of death among HIV/AIDS patients is Tuberculosis. Such efforts will then provide a really need one shopping center for persons with such problems. It will be also easy to provide treatment for HIV positive persons early in the process of Tuberculosis disease. However Tuberculosis patients might not accept it though some may be positive for HIV due to stigma on HIV hence it could lead to underutilization of Tuberculosis services.

MTCT is the leading mode of HIV transmission to children. The strategy proposes expanding the provision of quality prevention of maternal to child transmission (PMTCT) services in all regional hospitals and selected district and other hospitals in the country by 2006; sensitizing men, community leaders and the general public on MTCT transmission and its prevention to minimize stigma and enhance support and providing training to service providers in effective counseling and referral services. Tanzania is relatively a large country with difficult terrain. Those difficult areas would have less access to the PMTCT services. Rural areas where most of the births take place will as well have limited access to such intervention hence rural population will be at a disadvantage in that regard.

Implementation and the impact of reforms

There are a number of equity issues that arise in the implementation of this policy framework.

In relation to HBC, districts will have to take full responsibility to scale up home-based care⁷. From an almost entirely donor funded programme (see footnote) districts will need to establish and sustain the programme, including the community and health system support. There are lessons learned for this from the scaling up of PHC in the 1970s and 1980s (WHO & UNICEF, 1978). Implementation of PHC took place in several districts as projects that were fully donor funded. There was remarkable success in those districts, however after donor support ceased they could not be sustained nor could coverage be increased (Heggenhougen *et al.*, 1987; Mliga, 1991). Communities were not able to contribute to PHC costs nor pay VHWs, particularly in poorer areas. Some of the trained village health workers moved out to urban areas to look for better paying jobs. There was no integration of PHC with the district health system.

⁷ Home-based care was first implemented in Tanzania as a pilot project in 1995 with the assistance of Danish Development Agency (DANIDA) in four districts of three regions (National AIDS Control Program Ministry of Health Tanzania, 2003). The DANIDA assistance ended in 1999 and it was followed by an assistance, from WHO which covered 13 districts, and in 2001 an Italian grant covered 11 districts. The assistance included costs for bicycles, drugs and training. A grant from Belgium government has been received to establish HBC services since 2002. At baseline it took place in three districts which were the ones previously supported by DANIDA after which it will roll out to cover overall 43 districts by the end of 2003.

Similar problems may best the HBC programme. Districts will have varying capacity to implement HBC strategies and pay the providers. The current policy does provide for a Regional Facilitating Agency to support improving skills for communities. However the experience from the PHC programme suggests that government go further to ensure financing and integration of both PHC and HBC into district health systems at this initial stage. This will make health providers more committed to HBC and enhance its success.

The current set up of HBC capitalizes on the cohesion of community members and on access to the district health care referral system. Here too there is significant variation between districts (as described earlier) and long distances and costs of travel in poorer served districts may negatively affect access to HBC or quality of support of HBC from health systems. In urban areas, poor community networking and cohesion may also undermine HBC. Young people living in slums and peri urban areas live singly, without relatives or social support. This may undermine equity in access and use of services, leaving gaps that will be a challenge for both government and NGOs to address.

Treatment for opportunistic Infections (OI) currently takes place within the health care system. The current strategies envisage early diagnosis, availability of drugs and an effective referral system. Guidelines for clinical management of HIV/AIDS specify the preferred drugs for OIs (see Table 8)

Table 8 Opportunistic Infections by type and recommended drugs in Tanzania

Opportunistic Infection	Treatment
Viral infections	Acycloir IV Acyclovir Erythromycin Paracetamol Amitriptylin
Bacterial infections	Same as non-infected people
Fungal infections	Miconazole nitrate Clotrimozole 2% Sodium benzoate Nystatin Fluconazole Cotrimoxazole Pentamidine Dapsone
Protozoa	Sulphadiazide Pyrimethamine Folinic acid Clindamycin Dapsone Albendazole Metronidazole Cotrimoxazole

The effectiveness of these treatment regimes depends on factors beyond the health system, including the type of OI, the level of immune suppression and nutritional level. They also depend on the ability of the health system to equitably provide for the diagnostic, drug and referral options set out in the strategies.

As indicated earlier this is variably provided across income groups and districts. Studies indicate that the richest population quintile currently receive 2,5 times the expenditure in health compared to the poorest quintile, and that higher income groups benefit more from new health resources injected into the system (Gwatkin, 2003). This raises questions of how new resources for AIDS will most effectively reach the poor in systems biased towards benefiting higher income groups. Another study done in Rufiji district a district surveillance area revealed that the ratio of infant, child and under-five mortality between poorest and least poor quintiles was 1.46, 1.41 and 1.53 respectively (Mwagani *et al.*, 2003).

Equity in access to HAART.

Equity in access becomes even more important in relation to access to new Antiretroviral treatment. On this the national health policy states that people living with HIV/AIDS have the right to comprehensive health care and other social services, including legal protection against all forms of discrimination and human rights abuse. It also states, however, that people living with HIV/AIDS may be required to meet some of the costs of the Highly Active Antiretroviral Therapy (HAART) (United Republic of Tanzania, 2001a). The policy identifies care as holistic, including clinical, medical care, counseling and social welfare services, extending beyond the hospital precincts to include planned discharge and back up for home based care. The strategies recognize the role of stakeholders supporting people living with HIV/AIDS and of both modern and traditional remedies for HIV/AIDS. Equity issues arising include inability of some needy persons to access some of the care at hospital level due to costs. Also marked difference in care and support could arise because of the quality of the individual, geographical location and also prevailing social cultural contexts.

The issue then is how will the 530 000 people with HIV/AIDS estimated to be in need of care in 2003 access these services? (National AIDS Control Program Ministry of Health Tanzania, 2002). Currently no antiretroviral drugs are manufactured locally and all are imported privately, in line with a list of antiretroviral drugs approved and licensed for importation (See Annex A)⁸. Interview with private pharmaceutical dealers on the current prices of antiretroviral drugs for one month indicated a cost for patented antiretroviral drugs of about US\$100/month and for non-patented ART of US\$ 50.00. Clearly the resource scarcities in Tanzania demand non-patented drug options. However even making these drugs available to half a million people poses further challenges.

For HAART to be accessible to all will cost US\$ 600 per year. The resources for this will need to come from debt relief, UN funds (like GFATM), foundations like the Bill Clinton Foundation and other international efforts. However as raised earlier, such inputs may not be sustainable and may direct treatment towards drug regimes that cannot be sustained locally.

Further therapy needs to be backed by diagnostic tests, including for CD4 count, viral load, liver function test, random blood sugar, and chest x-ray. These require skills, and equipment, themselves requiring substantial financial and human resource investments. Such investment is more likely to take place in tertiary and secondary level health

⁸ Drugs recommended by the national guidelines include; 1st line Zidovudine (ZDV)300 mgs twice daily, Lamivudine (3TC) 150 mgs twice daily, and Efavirenz (EFV) 600 mgs once a day. 2nd line drugs included Didanosine (ddl), Stavidine (d4T), Saquinavir (PI), Lopinavir (LPV), Abacavir (ABC).

facilities, providing better access to ART in urban areas and leaving gaps in access in rural areas. At present there are no specific strategies for providing HAART and the monitoring and health system support in geographically disadvantaged areas and this needs to be developed.

Private pharmaceutical companies import most if not all antiretroviral drugs, with government ensuring safety and quality standards subject to a quality control certification that has to be renewed annually. One interview informant reported that some drugs are imported by individuals as personal effects, and thus are brought into Tanzania without being tested through the quality control process. Some of these drugs emanate from other Southern African countries. This calls for regional strategies to harmonize and share quality control procedures.

There are four issues that are likely to affect equity in access to drugs at national level. These include high cost of the drugs, bureaucracy in quality control, patient management requirements and TRIPS restrictions. Private sector importers and distributors of antiretroviral drugs are mainly found in Dar es Salaam, the capital city, and two other major urban centers. These sources of bias have led to estimates that by 2002 access to HAART was very low. The exact figures are not exactly known (Ministry of Health, 2002a).

In the first few months of treatment, close follow up is needed to ensure that patients are on a correct, safe drug combination, including regular checks for drug sensitivity, hematological and other monitoring. People living far from hospitals or hospitals without the technology or skilled staff will face difficulties in meeting these requirements. Strategies are thus needed to ensure that home-based care arrangements and health facilities in rural areas are able to provide such support.

In summary the equity issues raised here includes inadequate planning and implementation among districts. Administering HAART need technical capacity to follow up the patients. Such capacity is lacking in many rural districts. At the same time those districts will have to operate using guidelines but there are no mechanism to ensure that they are followed up to ensure standard practice. Equity is also threatened by lack of integration of HBC to official health system, priority given to OI's as well stigma related to HIV among TB patients. Family and community level wellbeing are threats to health and health care utilization and as well as utilization of HAART services. Finally the cost of HAART or the food supplements which are very expensive will limit accessibility to those who are well off only.

7. Strategies for responding to equity issues

The range of equity issues demands that equity as a policy principle be used to identify specific strategies that will overcome existing constraints in access to health care in Tanzania, particularly in relation to the aspects relevant to AIDS care. The evidence in this paper raises areas where this may be required and we suggest some options for equity oriented responses:

Government intervention is needed to reduce delays of certification of drug quality through technology and drug quality checks. As noted earlier to avoid drugs crossing borders without quality assessment, regional exchange of information on quality

standards would assist to ensure drug quality at a regional level to expedite approvals but also to avoid rejected drugs being passed to other countries.

TRIPS patent protections do provide for options for compulsory licensing and parallel importation for public health reasons. The President of Tanzania declared HIV/AIDS a national disaster in December 1999. Given this and the equity and poverty challenge in Tanzania, it is within its rights to use these options for importation of cheaper options for ART.

The strategies already give evidence of the potential for integration of HIV/AIDS interventions with other health interventions in ways that create synergies between them. The strategy to control both Tb and AIDS involves promotion of voluntary counseling and testing through integration of TB/Leprosy and HIV/AIDS programs, described earlier. Such integration involves abandoning the vertical nature of such programmes, a process that may not go without dissent. There is fear that the priority given to the TB program may be reduced or even neglected or that the stigma attached to HIV may discourage people from using the integrated HIV/AIDS/TB services. These negative features are however largely outweighed by the significant increased access such integration brings, given the countrywide coverage of the TB/Leprosy control program.

Prevention of mother to child (PMTCT) is one of the most effective interventions to prevent HIV transmission to children. It has been piloted in three tertiary facilities and one secondary health facility. Those who accepted VCT ranged from 8-100%, and among those accepting VCT, 57% were fully compliant to the 4 weeks PMTCT course (National AIDS Control Program Ministry of Health Tanzania, 2002). The barriers in access to or use of this programme are found to be fear of disclosure of HIV positive serostatus, stigma attached to being HIV positive, lack of cooperation among husbands or male partners, lack of follow up resources and low VCT / PMTCT services. PMTCT provided at tertiary level health facilities is likely to be more difficult and costly to access by rural people. Hence while PMTCT provision at secondary care facilities and below is an important contributor to treatment access, further interventions are needed to overcome stigma and to offer VCT in disadvantaged communities.

Most of the strategies for HIV/AIDS care, including home based care, HAART, PMTCT, call for access to VCT as a crucial entry point. Current implementing agencies for VCT include the government, NGOs, Community Based Organizations, and training institutions. There are currently 110 VCT centers in Tanzania, covering urban areas in 85 districts. This is a shortfall on the 121 districts each requiring several VCT centers. There is a plan to increase the number of VCT centres to 800 to improve coverage. Addressing the coverage and quality of the existing services calls for improved resources, skills and measures to overcome stigma (Ministry of Health, 2002a; National AIDS Control Program Ministry of Health Tanzania, 2003).

8. Conclusions

This paper has identified equity issues in relation to the background economic determinants of health and health care access, and in the health system itself. These include difficult geographical environments, lack of integration of health system to HBC, poor technical capacity, inadequate level of personnel, poverty and high prices of drugs and other needs. The paper notes that the AIDS epidemic spread at a time of

implementation of structural adjustment, further weakening household and national capacities for controlling transmission or dealing with the impact and widening the divide between rich and poor nations.

Within health systems in Tanzania, equity in access is now constrained by financial and human resource inputs, due to absolute shortfalls and to variations on the distribution of resources to different areas and levels of care. These existing inequities within the health system will affect the implementation of HIV/AIDS control activities, despite the political commitment given and the comprehensive policy intentions. Health sector reforms have placed significant emphasis on district roles and powers, but the capacities to use these roles and thus to ensure equitable access to ART is not adequately addressed.

Financing reforms such as the NHIF have not reached a level of cover of the population and does not cover PHC or a disease range to provide for the solidarity financing and coverage needed for equitable access to ART. The PHC experience indicates that while donor funds can provide necessary resources, specific attention needs to be paid to measures for ensuring integration into national health systems and for ensuring sustainability and continuity of programmes supported by donor funding. The increased share of financing from government funds is one step towards this. The other include cost sharing, community health fund, insurance and out of pocket.

Even where resources for ART are mobilized, the report indicates health system potentials and constraints that need to be taken into account if these treatments are to reach resource poor settings. Threat to equity arises from low technical capacity, low level of personnel, and poor infrastructure in general.

Addressing the equity in prevention, treatment and care access envisioned in the national policy launched by the President of Tanzania thus implies a much wider set of issues around strengthening health systems and enhancing access to critical facilities like VCT, supported by integration into areas of PHC that are already widely accessible, like TB control services. It also implies using service provision to destigmatise HIV/AIDS, and thus ensuring that it reaches socially excluded groups like youth, women and orphans. This goes well beyond the funds for drug procurement into a much wider set of economic, social and health system interventions. This requires an orientation of the significant global resources and means for dealing with the epidemic towards the realities of the health systems and communities in Tanzania.

The AIDS epidemic spread in Tanzania during the period when structural adjustment programmes were adjusting the Tanzanian economy to the new global reality. Will AIDS and the challenges for an equitable response to the epidemic now adjust global resources and policies to the Tanzanian reality?

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ANNEX

LIST OF REGISTERED ANTI-RETROVIRAL DRUGS AS AT 1st MARCH 2003						
S/N	Product Name	Dosage form	Genetic Name	Strength	Manufacturer	Country
1.	Videx	Tablets	Didanosine	100mg	Bristol Myers Squibb	FRANCE
2.	Epivir	Tablets	Lamivudine	150mg	Glaxo Wellcome Research & Development	UK
3.	Epivir Oral	Solution	Lamivudine	10mg/ml	Glaxo Wellcome Research & Development	UK
4.	Zerit	Powder	Stavudine	1g/ml	Bristol Myers Squibb	FRANCE
5.	Zerit	Capsules	Stavudine	15mg	Bristol Myers Squibb	FRANCE
6.	Zerit	Capsules	Stavudine	20mg	Bristol Myers Squibb	FRANCE
7.	Zerit	Capsules	Stavudine	30mg	Bristol Myers Squibb	FRANCE
8.	Zerit	Capsules	Stavudine	40mg	Bristol Myers Squibb	FRANCE
9.	Viracept	Tablets	Nelfinavir	250mg	F. Hoffman-La Roche Ltd	SWITZERLAND
10.	Invirase	Capsules	Saquinavir	200mg	F. Hoffman-La Roche Ltd	SWITZERLAND
11.	Retrovir	Syrup	Zidovudine	50mg/5ml	Glaxo Wellcome Research & Development	UK
12.	Retrovir	Capsules	Zidovudine	100mg	Glaxo Wellcome Research Development	UK
13.	Combivir	Tablets	Lamvudine+Zidovu dine	300mg/150m g	Glaxo Wellcome Research Development	UK
14.	Viramune	Tablets	Nevirapine	200mg	Boehringer Ingelheim Pharma KG	GERMANY
15.	Viramune	Suspection	Nevirapine	50mg/5ml	Roxane Laboratories Inc.	GERMANY
16.	Crixivan	Capsules	Indinavir	400mg	Merk Laboratories	USA
17.	Stocrin	Capsules	Efavirenz	200mg	Dupont Merck Pharmaceuticals Company Ltd.	USA
18.	Stocrin	Capsules	Efavirenz	100mg	Dupont Merck Pharmaceuticals Company Ltd.	USA
19.	Stocrin	Capsules	Efavirenz	50mg	Dupont Merck Pharmaceuticals Company Ltd.	USA
20.	Hivid FC	Tablets	Zalcitabine	0.75mg	F. Hoffman-La Roche Ltd.	SWITZERLAND
21.	Ziagen	Solution	Abacavir	200mg/ml	Glaxo Wellcome Research & Development	UK
22.	Ziagen	Tablets	Abacavir	300mg	Glaxo Wellcome Research & Development	UK
23.	Stavir	Capsules	Stavudine	30mg	Cipia Limited	INDIA
24.	Duovir	Tablets	Lamivudibe+Zidovu dine	300mg/150m g	Cipia Limited	INDIA
25.	Zidovir	Capsules	Zidovudine	100mg	Cipia Limited	INDIA
26.	Stavir	Capsules	Stavudine	40mg	Cipia Limited	INDIA
27.	Lamivir	Tablets	Lamivudine	150mg	Cipia Limited	INDIA
28.	Zidovir	Capsules	Zidovudine	300mg	Cipia Limited	INDIA
29.	Kaletra Soft	Capsules	Lopinavir + Ritonavir	133.3ng/33.3 mg	R P Scherer Limited	UK

30.	Kaletra Oral	Solution	Lopinavir + Ritonavir	80mg/ml+20 mg/ml	Abbott Laboratories (PTY) Ltd	SOUTH AFRICA
31.	Norvir Sec	Capsules	Ritonavir	100mg	R P Scherer North America	UK
32.	Trizivir	Tablets	Zidovudine+Lamivudine	300mg/150mg	Glaxo Wellcome Operations (UK) Limited	UK
			Abacavir	300mg		
33.	Indivan	Capsule	Indinavir	400mg	Cipia Limited	INDIA
34.	Stavex 30	Capsules	Stavudine	30mg	Aurobindo Pharma Limited	INDIA
35.	Stavex 40	Capsules	Stavudine	40mg	Aurobindo Pharma Limited	INDIA
36.	Lamivox	Tablets	Lamivudine	150mg	Aurobindo Pharma Limited	INDIA
37.	Nevirex	Tablets	Nevirapine	200mg	Aurobindo Pharma Limited	INDIA
38.	Didavex	Capsules	Didanosine	100mg	Aurobindo Pharma Limited	INDIA
39.	Indives	Capsules	Indinavir Sulphate	400mg	Aurobindo Pharma Limited	INDIA
40.	Zidovex-L	Tablets	Zidovudine+Lamivudine	300mg/150mg	Aurobindo Pharma Limited	INDIA
41.	Nevimune	Tablets	Nevirapine	200mg	Cipia Limited	INDIA
42.	Triomune 30	Tablets	Lamivudine	150mg	Cipia Limited	INDIA
			Stavudine	30mg		
			Nevirapine	200mg		
43.	Triomune	Tablets	Lamivudine	150mg	Cipia Limited	INDIA
			Stavudine	30mg		
			Nevirapine	200mg		
44.	Efavir	Capsules	Efavirenz	200mg	Cipia Limited	INDIA
45.	Zidovir	Oral Solution	Zidovudine	50mg/5ml	Cipia Limited	INDIA