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**Levels and Determinants of Expenditures on  
the Treatment of HIV/AIDS in Tanzania**

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Phare Mujinja and Richard Bail**

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THE TREATMENT AND PREVENTION OF HIV/AIDS IN TANZANIA**  
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## 1. BACKGROUND

The first three cases of AIDS in Tanzania were reported in 1983. By December 1994, a cumulative total of 53,247 cases had been reported. Reported AIDS cases do not reflect the real situation, however. It has been estimated that only one of every four to six AIDS cases in the country is reported due to problems of improper diagnosis and under reporting in many health care facilities. The National AIDS Control Programme (NACP) thus estimates that about 200,000 people have acquired AIDS since 1983. The number of people with the human immune virus (HIV) that causes AIDS is even more alarming. Estimates based on blood donor prevalence show that about 1 million to 1.5 million Tanzanians could have been infected by 1995. At the current rate, this figure may rise to 2.4 million by the year 2000 (URT, 1995a).

Tanzania has taken steps to fight the AIDS pandemic, and one of the provisions stipulated in the National Policy on HIV/AIDS/STDs (1995) is to provide infected persons and their providers with appropriate and adequate treatment, [and] physical, emotional, spiritual and psychological support whenever possible within the existing health care system and through home based care .

Institutional care for patients with AIDS is similar to that for other diseases. The National Policy on HIV/AIDS/STDs stipulates that procedures for caring for HIV/AIDS patients should be the same as for other patients. Counselling is expected to be a basic component of the care of HIV/AIDS patients. With the increasing number of patients with AIDS the government also encourages and supports home-based care where patients can be cared for and nursed in their homes by family members. Mechanisms to ensure effective home-based care are yet to be put in place, however, or are inadequate.

How much is being spent to fight the AIDS/HIV pandemic? Who pays for different interventions? This study seeks to answer these questions. The study identifies levels of expenditures on AIDS and examines how these expenditures are divided by source of financing and by intervention. The study further analyses the major determinants of the levels and patterns of expenditures and recommends policies that could be most effective in reducing the burden of HIV/AIDS.

The report uses secondary qualitative information and quantitative data from various research studies and government documents. In addition, it benefitted from primary qualitative information obtained during a workshop held in Dar es Salaam on 24 May 1996 that was attended by experts in clinical, epidemiological, social and economic aspects of HIV/AIDS. Information was also obtained by interviewing officials in the government and NGOs whose activities include, in one way or another, treatment, prevention and mitigation of the impact of AIDS. Both secondary and primary data sources are summarized in Appendix A.

Section 2 analyses the patterns of expenditures on HIV/AIDS and Section 3 discusses the determinants of those expenditure patterns. Challenges to be dealt with and strategies to ensure effectiveness in reducing the burden of HIV/AIDS are presented in Section 4.

## **2. SOURCES OF FUNDING AND PATTERN OF EXPENDITURES**

In Tanzania there are four major sources of funding for the treatment, prevention and mitigation of the impact of HIV/AIDS. These are the government, donors, private individuals and employers. Analysis of expenditure patterns is primarily based on data collected in 1993 (World Bank, 1996), which cover the first three sources. Information from only one employer is used to estimate employers' contributions. (See Appendix B, Table B1.) The data also combine expenditures on HIV/AIDS with expenditures on STDs.

### **2.1 A Comparison of Expenditures on HIV/AIDS/STDs with Total Health-Related Expenditures**

The pattern of total health-related expenditures presented in Tables 1 and 2 shows that most of the financial resources are allocated to curative health (56.5%). Private out-of-pocket expenditures constitute the largest proportion of this amount, accounting for 36.3% of the expenditures. In contrast, the pattern of expenditures on HIV/AIDS presented in Tables 4 and 5 reveals that most of the financial resources are allocated to preventive health (61%). About 98% of this (60% out of 61%) is contributed by donors, with government and private expenditures accounting for the remaining 2%.

When expenditures on community health and preventive health are combined into one preventive category, the amount of preventive funds for total health-related expenditures (42.5%) remains below the amount of funds allocated for curative health. In the case of expenditures on HIV/AIDS, combining the two increases the proportion of the funds spent on preventive health from 61% to 86%.

An examination of individual sources shows that government contributes the least amount for both total health-related expenditures and HIV/AIDS expenditures (20.8% and 5.5%, respectively). Donors contribute the largest proportion of the money spent on HIV/AIDS (about 87%). The bulk of this proportion is spent on preventive and community health (84%), with only 2% of donor funds being allocated for curative health.

A comparison of expenditures on AIDS with those on other diseases indicates that AIDS/STDs are among the diseases on which relatively more funds are spent. Table 3 shows that expenditures on AIDS constitute 13.5% of total expenditures on diseases. The disease on which the largest share of financial resources is spent is malaria (18.4%), followed by perinatal/maternal health care (14.2%).

Overall, a comparison of expenditure patterns on total health spending and on AIDS/STDs shows that the largest proportion of total health related expenditures is by private individuals; the same group spends the least on AIDS/STDs, while donors spend more on both total health-related activities and AIDS/STDs than does the government (35.5% against 20.8% and 86.6% against 5.5%, respectively). For AIDS/STDs, donors spend more on sentinel clinics and other preventive activities.

**Table 1: Summary of total health-related expenditures by source and intervention**

Source	Intervention	Total amount (Tsh)	% of total
Government		19,918,414,890	20.8
	Community	1,278,298,711	1.3
	Preventive	2,926,773,309	3.1
	Curative	14,844,891,402	15.5
	Non-essential	868,451,467	0.9
Donor		34,046,652,804	35.5
	Community	8,898,932,459	9.3
	Preventive	20,614,070,813	21.5
	Curative	4,533,649,532	4.7
	Non-essential	0	0.0
Private		41,855,115,298	43.7
	Community	0	0.0
	Preventive	7,059,199,139	7.4
	Curative	34,795,916,159	36.3
Total spending by intervention		95,820,182,992	100.0

Source: World Bank (1996).

## 2.2 HIV/AIDS/STDs Expenditures by Source

Data in Table 4 show that about 87% of total expenditures on HIV/AIDS/STDs is contributed by donors. Private out-of-pocket expenditures constitute about 7.8% of total expenditures, and 99% of this (7.7% out of 7.8%) is spent on curative health. Government expenditures on HIV/AIDS/STDs account for only 5.5% of total expenditures.

## 2.3 HIV/AIDS/STDs Expenditures by Intervention

Data in Table 5 show that the largest proportion of the money spent on HIV/AIDS/STDs is allocated to preventive health care, which accounts for about 61% of total expenditures. When expenditures on community health and preventive health are combined into one preventive category, they constitute about 86% of donor expenditures on HIV/AIDS. Only about 1.2% of donor funds are allocated to curative health, while 60% of the expenditures on curative health are by private individuals.

**Table 2: Summary of total health-related spending by intervention and source**

Intervention	Source	Total amount (Tsh)	% of total
Community health		10,177,231,170	10.6
	Government	1,278,298,711	1.3
	Donor	8,898,932,459	9.3
	Private	0	0.0
Preventive health		30,600,043,261	31.9
	Government	2,926,773,309	3.1
	Donor	20,614,070,813	21.5
	Private	7,059,199,139	7.4
Curative health		54,174,457,093	56.5
	Government	14,884,891,402	15.5
	Donor	4,533,649,532	4.7
	Private	34,795,916,159	36.3
Non-essential		868,451,467	0.9
	Government	868,451,467	0.9
	Donor	0	0.0
Total spending by Intervention		95,820,182,992	100.0

Source: World Bank (1996).

Appendix Table B1 includes employers' contributions for curative health (see Appendix A for estimation assumptions). Data indicate that private out-of-pocket expenditures constitute the largest proportion of expenditures on curative health (about 55%). Employer contributions constitute about 14% of total expenditures on curative health.

Table B5 shows a breakdown of expenditures on preventive activities. Total expenditure on preventive health differs from that in Table 3 because the former uses 1994 expenditure data provided in NACP reports and estimates based on certain assumptions. (See Appendix A for estimates on condom distribution and blood screening, and treatment and control of STDs, as well as Appendix B, tables B2, B3 and B4.) Data in Table B5 show that most of the funds are spent on condom distribution (53%), followed by information, education and communication (30%). About 85% of the expenditures on condom distribution is by donors. Overall, about 84% of the total expenditures on HIV/AIDS/STDs preventive activities is by donors. Government and individual out-of-pocket expenditures constitute 1.4% and 16.2% of total preventive expenditures, respectively.

**Table 3: Summary of total spending by disease**

Disease	Total amount (Tsh)	% of total
Malaria	17,631,391,316	18.4
Perinatal/maternal	13,580,781,167	14.2
AIDS/STDs	12,927,280,071	13.5
Tuberculosis	6,790,230,204	7.1
Nutritional deficiency	6,654,547,519	6.9
Diarrhea	4,283,755,429	4.5
URI	2,230,209,374	2.9
Cardiovascular	1,066,196,703	1.1
Immunizable diseases	1,097,757,066	1.1

Source: World Bank (1996).

Total preventive expenditures for 1994 are much lower than those for 1993 (Tsh1.9 billion against Tsh7.9 billion). This trend lends credence to the argument that support is likely to be on the decline. This may be partly explained by the fact that 1993 figures may include budgeted figures, as pointed out in Appendix A, and hence they could be higher than 1994 figures, which are based on actual expenditures. However, 1994 estimates show fewer donor contributions to preventive activities than do the 1993 data (82.4% against 98.7%), which is also consistent with the point raised by interviewed experts that the trend of donor expenditures is likely to be on the decline.

Data from the NACP show a similar trend for many donors. For example, funds from WHO (global and multi/bilateral) decreased from US\$2,444,753 in 1992 to US\$1,967,232 in 1993 and US\$1,056,464 in 1994. Funds from UNDP (bilateral) decreased from US\$272,680 in 1992 to US\$231,176 in 1993 and to US\$129,658 in 1994 (NACP, 1995). Figure 1, showing the trend of donor expenditures on AIDS in developing countries, supports this argument.

## 2.4 Expenditures on Mitigation

Financial resources are spent on activities that mitigate the impact of AIDS on society. No attempt is made to estimate total expenditures on mitigation because data presented are anecdotal and not based on systematic data collection. In 1994, donors spent about

Tsh66,640,000 (US\$119,000) on mitigation through NACP, and about Tsh32,200,000 through one NGO. The figure from NACP appears under the care and social support expenditure item in Table B6.

**Table 4: Summary of AIDS/STDs spending by source and Intervention**

Source	Intervention	Total amount (Tsh)	% of total	% of total relative to other diseases
Government		718,173,556	5.5	0.7
	Community	102,226,852	0.8	0.1
	Preventive	76,000,990	0.5	0.1
	Curative	539,945,714	4.2	0.6
Donor		11,128,974,036	86.20	11.6
	Community	3,147,138,109	24.4	3.3
	Preventive	7,826,850,645	60.6	8.2
	Curative	154,985,282	1.2	0.2
Private		1,080,132,480	8.3	1.1
	Community	0	0.0	0.0
	Preventive	16,805,062	0.1	0.0
	Curative	1,063,327,418	0.2	1.1
Total spending by source		12,927,280,071	100.0	13.5

Source: World Bank (1996).

Expenditures on mitigation most likely substantially exceed what is presented because, first, there are many other NGOs in Tanzania working to mitigate the impact of AIDS that are not covered in this study. Second, individuals in households and communities incur substantial expenses on mitigation. Tibakweitira (1995), on the basis of a 1992 estimate of 20,000–30,000 AIDS related deaths (Mujinja and Over, 1992) and taking into account burial and mourning expenses, estimated social costs for 30,000 deaths per year at about Tsh2.2 billion. In the same study, estimated expenses that community members incur in taking care of orphans were about Tsh9.2 billion annually. This estimate is arrived at by taking into account maintenance costs for an estimated 150,000 AIDS-related orphans (NACP, 1994), with school expenses for schoolage AIDS orphans taken as 50% of the total number. These estimates may be underestimated; nonetheless, they are a strong indication that individuals spend much more on AIDS than is thought.

Employers also incur mitigation expenses, for example through assisting with burial expenses for their employees and meeting transportation costs of families of the deceased to their home

areas. Thus employers contribute more than mere payment of medical bills for sick employees. For example, it was found that one factory spent about Tsh12 million assisting relatives and transporting 34 dead employees to their home areas for burial.<sup>1</sup>

**Table 5: Summary of AIDS/STDs spending by intervention and source**

Intervention	Source	Total amount (Tsh)	% of total	% of total relative to other diseases
Community health		3,249,364,961	25.0	3.4
	Government	102,226,852	1.0	0.1
	Donor	3,147,138,109	24.0	3.3
	Private	0	0.0	0.0
Preventive health		7,919,656,696	61.0	8.3
	Government	76,000,990	0.5	0.1
	Donor	7,826,850,645	60.4	8.3
	Private	16,805,062	0.1	0.0
Curative health		1,758,258,414	14.0	1.8
	Government	539,945,714	4.3	0.6
	Donor	154,985,282	1.2	0.2
	Private	1,063,327,418	8.4	1.1
Total spending by intervention		12,927,280,071	100.0	13.5

Source: World Bank (1996).

## 2.5 Summary of Sources and Summary of Expenditures

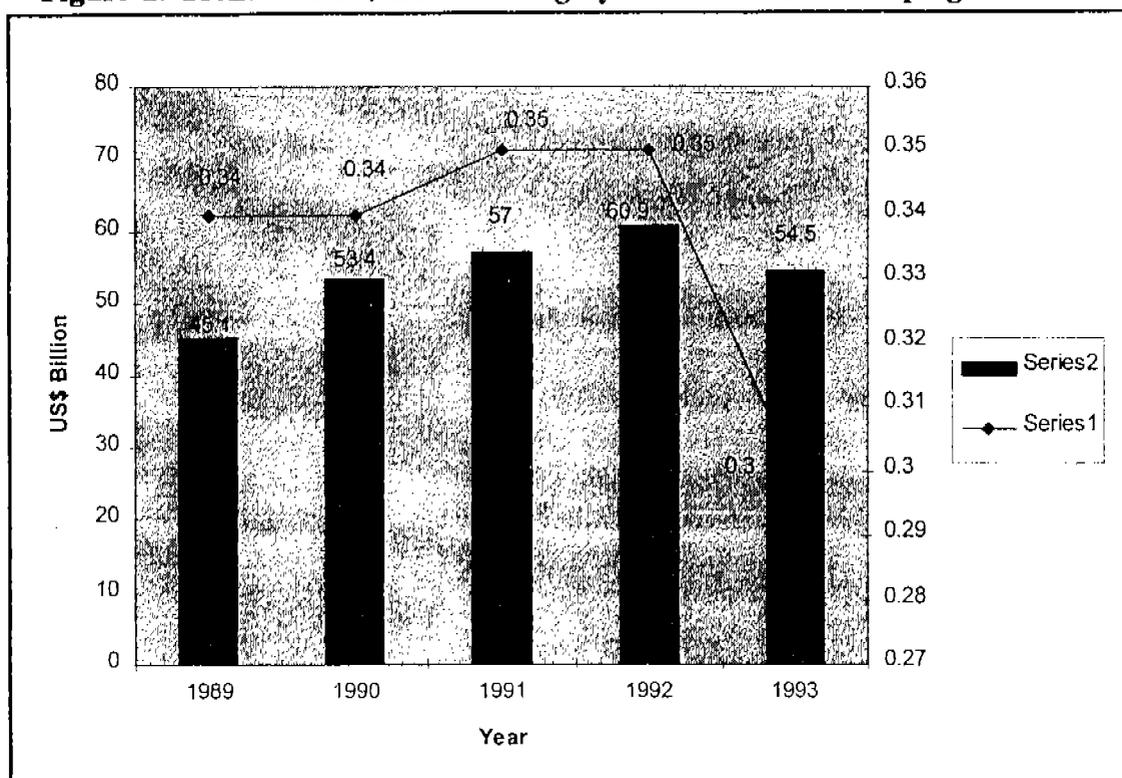
The pattern of expenditures and sources of financing for prevention and treatment of HIV/AIDS can be summarized as follows:

- Most of the expenditures on HIV/AIDS are on preventive health.
- The largest proportion of financial resources spent on HIV/AIDS is contributed by donors.
- Most of the donor funds allocated to HIV/AIDS are spent on preventive health.
- Government contributes the smallest proportion of the total expenditures on HIV/AIDS.

<sup>1</sup> Reported by one of the experts during the workshop held to discuss the study.

- Private out-of-pocket expenditures constitute the largest proportion of total expenditures on treatment/curative health.
- Anecdotal evidence shows that employers contribute substantially not only to meeting medical expenses for sick employees but also in activities that mitigate the impact of the disease.

**Figure 1: Trend in HIV/AIDS funding by donors in the developing countries**



Source: Mann and Tarantola (1996).

## 2.6 Observations on the Pattern of Expenditures

A workshop that brought together officials and experts on the problem of HIV/AIDS showed some concern about the accuracy of expenditures by different sources and whether the pattern of expenditures is still the same as in 1993 when the data were collected. The following points were noted:

- Government expenditures on curative care for HIV/AIDS may be underestimated: Data on government spending on AIDS/STDs for curative health probably do not include money spent on treatment of patients abroad. Individuals have been sent outside the country for treatment of diseases such as kaposi sarcoma, complicated tuberculosis, etc., without specifically attributing these symptoms to AIDS.
- Government expenditures on the prevention of HIV/AIDS may be underestimated: Donor expenditures categorized as preventive draw on some of the curative resources for the

government. For example, donors use hospital staff to carry out their preventive activities, even though staff time is counted as being spent on curative activities. This indicates that government expenditures on preventive health are also underestimated.

- Private expenditures on the prevention of HIV/AIDS may be underestimated: Estimates are made using household budget surveys whose data are mostly based on how much individuals pay for curative health. This is supported by estimated data on private expenditures on safe blood supply and control of STDs in Tables B2 and B3. These estimates show that private expenditures on the two preventive interventions constitute 44% and 66% of total expenditures, respectively.
- Private expenditures on community health may be underestimated: Data show private spending on community health as zero. This is most likely an underestimation because some community activities are undertaken in the form of education and campaigns that contribute to the changing of life styles. For example, in church priests caution on the consequences of AIDS and the importance of changing habits. In households, too, family members educate each other on how to avoid getting the disease. Private contributions to community health cannot therefore be zero.
- Total private expenditures on HIV/AIDS may be underestimated: Further, although it appears that private spending on AIDS/STDs is relatively small (8.3%), it is worth noting that there are other expenses related to social and economic aspects in communities that individuals incur. For example, as pointed out above, individuals incur burial costs and food expenses for people who gather to console families of the deceased and must take care of orphans whose parents die of AIDS. Moreover, because of the stigma attached to AIDS, families are reluctant to reveal the cause of death, which results in understatement of expenditures.
- The burden of AIDS relative to expenditures on the disease may be underestimated: Table B9 shows the burden of disease as measured in terms of life-years lost and the share of health care spending on the disease. Data on AIDS show that expenditure on AIDS is more than its burden. Depending on what factors are included in calculating the burden of disease, this may not be true. For example, if calculations included losses to individuals, households, employers and government in terms of productivity, then it is possible that the burden of AIDS could be greater than the expenditure on the disease. Similarly, investment in training of persons who subsequently are lost to AIDS also increases the burden. Currently these factors are not well quantified. In addition, the effect of AIDS on running down savings and leaving behind orphans is a high cost to society, but this cost is not taken into account.
- Current levels of expenditures on HIV/AIDS may be less in real terms than in 1993: Overall, 1993 data may present a somewhat better picture than the current situation. The pattern in 1995/96 is likely to be on the low side because the social sectors, including health, have been adversely affected by budget cuts due to economic reforms. Hence, the 1993 situation may be better than the current one. There are nominal annual increases in the budget but in real terms the situation could be worse, particularly taking into consideration the inflation rate of about 20% per annum. An examination of the HIV/AIDS funding by donor agencies indicates a declining trend, as shown in Figure 1.

### **3. DETERMINANTS OF THE PATTERN OF EXPENDITURES BY DIFFERENT SOURCES**

#### **3.1 The Pattern of Expenditures by Government**

Several factors may influence the observed pattern of government expenditures. The following have been identified as the major determinants of the observed pattern:

- The government already has the infrastructure to provide curative care, and has responsibility to treat sick patients. The government cannot abandon its role of attending to the sick.
- Patients' bias towards curative rather than preventive care obliges the government to spend more on curative care.
- Most of the money from donors is used for preventive health care. The government has to fill the gap by spending more on curative health care.
- The government spends more money on curative health care because society is likely to react more if sick people are not treated. Pressure for treatment is likely to be more than pressure for prevention. Since the government has limited resources, it tends to give priority in the area where pressure is likely to be greater.

#### **3.2 The Pattern of Expenditures by Donors**

The pattern of donor expenditures on HIV/AIDS may also be influenced by a number of factors. Major determinants of the observed pattern include the following:

- The belief of donors that prevention is better than cure makes them spend more on preventive health services than on curative health care. Because donor funds are from outside the country, the government often has little say on how they should be spent.
- The belief that preventive activities save more lives per shilling spent and are thus more cost effective than curative care drives the support for prevention.
- Preventive programmes are easier and cheaper to manage than curative care, therefore they are more attractive to donors.
- Data show that increasingly donors are spending their money through NGOs. One of the incentives influencing decisions to channel funds through NGOs is that they are easier to monitor and less bureaucratic than the government, and are believed to reach target groups more effectively. The government is perceived to be less efficient in using donor funds.

#### **3.3 The Pattern of Private Expenditures on AIDS**

For private expenditures on HIV/AIDS, major determinants of the observed pattern include the following:

- People have limited resources, which they have to allocate among competing ends. When they are not sick, they would prefer to spend these limited resources on other immediate basic needs, but when they get sick they have to seek treatment.
- People spend more on curative services because structures are in place and people are oriented to seek services when they get sick.
- The pattern of private expenditures on AIDS prevention initiatives that could be organized at the community level (i.e., public or community health activities) requires that a workable organizational structure be put in place. In the case of Tanzania, community level organization and management of the development process have weakened in the past one or two decades. This has eroded the community health structures that were emerging at the lowest level of the administrative machinery.

## **4. POLICY ISSUES**

### **4.1 Policies on HIV/AIDS/STDs**

Tanzania has formulated a national policy on HIV/AIDS/STDs. The policy is intended to create a clear and favourable environment for the successful implementation and coordination of all aspects of AIDS control and prevention activities. It includes the diverse and varied aspects of multi-sectoral response to HIV/AIDS. The overall goal of the National Policy on HIV/AIDS/STDs (1995) is to mobilize the community to get actively involved in preventing further transmission of HIV and to cope with the social and economic consequences of AIDS. Specifically, the policy aims to:

- Increase the community's awareness of HIV/AIDS and its consequences through information, education and communication.
- Prevent further transmission of HIV/AIDS through use of preventive measures such as safer sex, testing and counselling
- Provide infected persons and their care-givers with appropriate social, medical, physical and spiritual support through the existing health care system and through home-based care.
- Safeguard the rights and interests of infected persons by preventing discrimination in employment, housing, treatment, travel, education and other social services.
- Support and promote research activities to strengthen national efforts to control and prevent HIV/AIDS/STDs.
- Safeguard the rights of the community as a whole against infection with HIV/AIDS/STDs.
- Define and coordinate the roles of different players involved in AIDS control and prevention.

- Create a national institutional framework to coordinate the mobilization of financial, human and material resources for AIDS prevention and control.

## **4.2 Factors that Affect the Implementation of AIDS Policies**

There are factors that either facilitate or inhibit effective implementation of policies and guidelines on HIV/AIDS. These include the following:

- Lack of resources makes it difficult to implement AIDS policies. Because the government is short of resources, it is easy to permit donors to come in and decide where they want to assist. This may distort the government's policy of providing equitable health care and can make it difficult for the government to implement its own priorities.
- Religious beliefs and conservatism make AIDS policies difficult to implement. Often, the government has to keep quiet where it could have intervened because of religious and cultural factors. In the religious strongholds (Christian and Moslem), for example, it has taken a long time to accept sex education.
- Customs and traditions that place women in lower status relative to men make it difficult for women to make decisions that affect their own health, as is the case with other decisions that affect their overall well-being.
- Fear of the AIDS epidemic has made it easier to provide assistance to commercial sex workers. For example, although commercial sex activities are prohibited by law, the government has to accept that sex workers be assisted to reduce the spread of HIV/AIDS because refusal will risk being denied resources by donors.
- Stigmatization and taboos (due to AIDS being associated with sexuality) cause people to NOT reveal that they have AIDS. This results in understating the number of people with the disease, which could have a negative impact in terms of limited scope of intervention policies. AIDS is a highly stigmatized condition in most areas of the country, and, as noted above, family members often do not reveal the actual cause of death.

## **5. SUMMARY AND RECOMMENDATIONS**

### **5.1 Summary**

Our analysis of the pattern of expenditures on HIV/AIDS in Tanzania has shown the following:

- The largest proportion of funds is contributed by donors who, as the trend shows, are reducing their support, and increasingly channelling what they do provide through NGOs.
- The expenditure on HIV/AIDS prevention is larger than that on curative care.

- Of the three main sources of funds (government, donor, private), government spends the least amount on preventive activities, while donors spend the least on curative care.
- Anecdotal evidence shows that employers and individuals spend a substantial amount of money on activities that mitigate the impact of HIV/AIDS.

## 5.2 Recommendations

While there is a national policy on HIV/AIDS/STDs, most of its objectives are yet to be met and more resources are needed to fight the AIDS pandemic. To ensure effectiveness of policies that target reduction of the burden of HIV/AIDS, the following are recommended:

- **Ensure coordination and monitoring of funds channelled through NGOs:** Results of a study done in Kagera (Koda and Over, 1993) show that NGOs are not well coordinated and are not integrated into the district health planning system. Further, NGO activities were found to be duplicative and not coordinated. Coordination is important to ensure equitable use of resources distributed on the basis of need and to avoid parallel systems. The government should monitor and coordinate the activities of NGOs to ensure that they are integrated into the district and other local level planning machinery. Monitoring at community level should seek to ensure that interventions at that level are appropriate and effective.
- **Put more emphasis on information, education and communication (IEC) activities:** This could be done by, for example:
  - Maintaining an integrated network of family, school and community HIV/AIDS health education activities. Through methods of IEC, such an integrated network will create more awareness. This could be cost effective because it would involve different groups of the population.
  - Including HIV/AIDS education in the school curriculum. Given the high rate of infection among the youth relative to other age groups, HIV/AIDS education in schools could be effective in reducing the spread of the disease.
- **Ensure that donor support also strengthens lower level management structures:** Rather than channel all resources through NGOs, donors should also help strengthen government administrative and development management structures (especially at local level), which, of necessity, must supervise and monitor the NGOs.
- **Involve all stakeholders in planning programmes:** To ensure sustainability of programmes to reduce the burden of AIDS, all actors should be involved in the planning process to impart a feeling of ownership of the programmes and create awareness on the importance of these programmes.
- **Target all factors that contribute to the spread of HIV/AIDS:** Up to now, interventions have focused on the narrower medical dimension. There is still lack of attention to economic, social, cultural and political issues. For example, issues of poverty and of the legal environment, particularly laws that disfavour certain vulnerable groups of the

population, have been associated directly or indirectly with increased HIV infection. One example of the former is the migration to the cities of young people seeking employment; in their new environment they face high risk of contracting HIV. In the latter case, an example is certain traditional requirements accepted in many societies in the country regarding marital relationships. In many societies, a woman cannot say no to her husband. Such a condition puts the wife's life at risk because she cannot refuse her husband, even when she is aware of the risk as a result of her husband's behaviour. For more effectiveness, intervention should also target the social, cultural and economic factors that increase the risk of HIV/AIDS.

- **Direct more intervention to groups that face higher risk of HIV infection:** One such group is women. There are several areas where intervention could be increased:
  - Allocating more resources to women's reproductive health: Because women are more at risk of infection than men, more attention should be given to women's health. Consolidating programmes on women's health, such as family planning (FP), safe motherhood initiative (SMI), etc., into a broader programme on "reproductive health" could have more impact on reducing the burden of AIDS because it would offer an opportunity for more focus and support.
  - Facilitating and speeding up the process of reviewing customary laws and practices that put women at higher risk of infection: The government must ensure that customary laws and practices that put women at a higher risk of infection are removed and severe deterrent measures put in place and enforced. The fact that females contract AIDS at a younger age than males, for example, is an indication that older men take advantage of young, vulnerable girls.
  - Promoting advocacy activities: Such awareness programmes build an understanding of the implications of the disadvantaged position of women.
- **Provide more comprehensive policy guidelines:** Although there is a national policy on HIV/AIDS/STDs, some of the issues are not addressed in the policy guidelines because of their sensitive nature. One such issue is sex education in schools. Efforts should be made to have dialogue with relevant parties to ensure that all factors that affect the spread of HIV/AIDS are addressed by the policy.

## DATA SOURCES AND METHODS OF ESTIMATION

### DATA SOURCES

Data sources included the following:

1. A draft World Bank report No. 14040 AFR titled *Health Policy in Eastern Africa: A Structured Approach to Resource Allocation* (1996). This report is a review of the findings of the 1994 Eastern Africa Burden of Disease, Cost Effectiveness and Health Policy Study. The study was conducted by teams of experts from five eastern Africa countries: Eritrea, Ethiopia, Kenya, Tanzania and Uganda. A team of World Bank consultants assisted the teams in each country.

The World Bank study estimated the burden of disease (defined as “the discounted life years lost due to premature death”) and the cost of interventions, and identified health expenditures on various interventions and diseases by source. Data on actual expenditures were collected where available, otherwise expert knowledge and budget estimates were used. The study covered all ministries and estimated expenditures at regional and district levels, as well as expenditures by donors. Household surveys were used to estimate private out-of-pocket expenditures.

2. Data and information were also obtained from the AIDS National Control Programme documents. These include the 1995 Review Report by a team of experts from the government, the University of Dar es Salaam, and donor agencies. One of the methods used by the review team to gather information was to interview experts on the problem of AIDS from Ministry of Health headquarters, NGOs, donors, the National AIDS Control Programme, other ministries, parastatal organizations, and regions and districts.
3. Data on foreseeable trends in official development assistance (ODA) expenditures on HIV/AIDS were obtained from *AIDS in the World: Uprooting the Pandemic*, edited by Jonathan M. Mann and Daniel Tarantola (1996).
4. Pallangyo and Laing (1990) provided data on the cost of curative health care for AIDS.
5. Documents from NACP and one NGO dealing with AIDS mitigation activities were used for data on mitigation. The data on mitigation are anecdotal and not based on systematic data collection.
6. Experts' views on the pattern of expenditures and its determinants were obtained by interviewing officials in government ministries, NGOs, donor agencies and employers.
7. A half-day workshop (held in Dar es Salaam on 24 May 1996), which brought together a team of experts from the Ministry of Health, the National AIDS Control Programme, the World Health Organization (Tanzania office), the Muhimbili University College of Health Sciences, the Muhimbili Medical Centre, UNDP (Dar es Salaam office) and the Ilala District medical office, also provided valuable comments on the data on patterns

of expenditures. Workshop participants assessed possible determinants of the pattern of expenditures and their policy implications.

8. Data in tables B6–B8 were estimated using secondary data in documents obtained from the National AIDS Control Programme, Tanzania AIDS Project, one NGO dealing with AIDS mitigation activities and research papers on the subject. Other data were obtained through interviews.

## **ESTIMATION OF EXPENDITURES ON BLOOD SUPPLY (TABLE B2)**

There is great disparity in the HIV/AIDS prevalence between rural and urban areas of Tanzania. The rural areas have a low prevalence, sometimes almost zero, while urban areas have reported up to 32.5%, depending on which group in the population has been tested for the virus. Blood donation is done mostly in district, regional and private hospitals (including mission hospitals). Most of these hospitals are in urban centres. Reporting on HIV sero status of potential blood donors has been taking place since 1987. Since 1990, all the 182 hospitals in the country have been screening blood from donors to ensure safe transfusion.

Table B8 shows the distribution of blood donations by year of donation. In 1991, about 87% (152) of all hospitals reported the number of screened blood donors (81,325). In calculating the cost for blood screening we assume 93,730 blood donors from all hospitals. For that assumption, one hospital reports about 515 (81,325/152) screened blood donors annually. The next assumption is that 70% of all those screened potential donors were done in government hospitals and 30% in private hospitals. We assume that substantially fewer people are screened in private hospitals because not many people have the ability to pay for private health care.

We also estimate a cost of Tsh2,500 per test per person done with the ELISA kit and the reconfirmation cost of Tsh5,000 (double the first cost) in the government hospital. We assume a profit margin of 40% in the private sector, hence the tests cost Tsh3,500 for a first test and Tsh7,000 for a second test.

A sero prevalence of 7.5% (for Tanzania) is assumed among blood donors (five-year average of sero prevalence among blood donors in Tanzania). This means that 7.5% of the tests done need to be reconfirmed. Almost all the tests done in district and regional hospitals are donor funded through NACP, but those in private hospitals are funded privately. So, we assume that only 30% of screened potential donors (28,119) paid for blood screening.

### **Private Expenditures**

Number of people who paid to be screened: 28,119 (second test: 2,109)

Cost per screen in private hospitals: Tsh3,500 for first test and Tsh7,000 for second test

Prevalence rate: 7.5%

Cost for first test:  $28,119 \times 3,500 = \text{Tsh}98,416,500$

Cost for reconfirmation:  $2,109 \times 7,000 = \text{Tsh}14,763,000$

Total = Tsh113,179,500

## **Government Expenditures**

For government expenditures data on implemented activities on prevention of transmission through blood by the NACP were used (Table B6); overhead costs of 10% were added.

Prevention of transmission through blood: US\$17,274 = Tsh9,673,940

10% overhead costs = Tsh967,394

Total government = Tsh10,641,334

## **Donor Expenditures**

Donor expenditures on safe blood supply are also those indicated in the NACP 1995 Review report. The total amount indicated is US\$241,789 = Tsh135,401,840.

## **Total Expenditures**

Total government, donor and private expenditures = Tsh259,222,674.

Percentages:

Private = 44%

Government = 4%

Donor = 52%

## **ESTIMATION OF EXPENDITURES ON CONTROL OF STDs (TABLE B3)**

Studies have documented an increased risk of HIV infection among individuals already infected with STDs. A total of 44,423 STD cases were reported in sentinel clinics in 1995 in 11 regions. We assume that the average number of cases for these regions ( $44,423/11 = 4,038$ ) is the average number of cases for all 20 regions. Hence, total number of cases is 80,760 ( $4,038 \times 20$ ). We also assume that 50% of STD cases are treated in government hospitals and 50% in private hospitals.

### **Private Expenditures**

According to a study by Mtasiwa et al. (1995) on STD treatment in health facilities in Dar es Salaam, Iringa and Dodoma (pattern for the whole country is assumed to be more or less the same), the breakdown of private out-of-pocket expenditures on STDs was as follows:

- 61% of cases, on average, paid registration fee of Tsh250, which amounts to a total of Tsh12,315,900.
- 60% paid lab fees of about Tsh200 each. For this study we assume that only 50% paid lab fees, given that government health facilities did not charge lab fees. The total amount for lab fees is thus  $40,380 \times 200 = \text{Tsh}8,076,000$ .
- 76% paid, on average, drug fees of about Tsh400, giving a total of Tsh24,551,090.

The three private expenditure items give a total of Tsh44,942,990.

## Government Expenditures

It is assumed that government incurs overhead costs only, estimated as 10% of total private and donor expenditures = Tsh5,474,691 or about US\$9,776.

We further assume that those who did not pay for drugs (24%) got drugs free of charge from government pharmacies, hence these were paid for by the government; 24% of 80,760 people who were treated for STDs = 19,382.

$$19,382 \times 400 = \text{Tsh}7,752,800 \text{ or about US\$}13,844$$

$$\text{Total government: } 5,474,691 + 7,752,800 = \text{Tsh}13,227,491 \text{ or about US\$}23,621$$

## Donor Expenditures

NACP gives a figure of US\$17,507 spent by donors on STDs. This is equivalent to about Tsh9,803,920.

## Total Expenditures

The total private, government and donor expenditures = Tsh67,974,401

Percentages:

Private	= 66%
Government	= 20%
Donor	= 14%

## ESTIMATION OF EXPENDITURES ON CONDOM DISTRIBUTION (TABLE B4)

Condoms are supplied mainly by the NACP and the Tanzanian AIDS Project (TAP). Estimation of expenditures on condom distribution was done as follows:

### TAP Expenditures

In 1994, TAP sold 3,783,466 condoms. Of these, 20% or 756,693 condoms were sold at Tsh20 each. 80% were sold at an average price of about Tsh70 each, a mark-up of Tsh50. Average mark-up:  $(80\% \text{ of the condoms} \times \text{Tsh}50)/100\% = \text{Tsh}40$ .

$$\text{Total mark up: } 3,783,466 \times 40 = \text{Tsh}151,338,650 \text{ (US\$}270,248)$$

$$\text{Amount paid by consumers for distribution therefore} = \text{Tsh}151,338,650$$

In 1994, TAP spent about Tsh448,000,000 (US\$800,000) on condoms.

### NACP Expenditures

In 1994, NACP distributed 10.5 million condoms through the health-care system (NACP, 1994). Since NACP condoms are distributed free (NACP, 1995), we assume that condoms are provided by donors.

Assuming a price of Tsh20 per condom:

$$10,300,000 \times 20 = \text{Tsh}206,000,000, \text{ or about US\$}367,857$$

Given the average price for a condom of Tsh40, we assume a distribution cost of Tsh10,300,000  $\times$  20 = Tsh206,000,000.

Total donor expenditures: 206,000,000 + 206,000,000 = Tsh412,000,000, or about US\$735,714

### **Total expenditures**

We assume the government bears overhead costs of about 10%. Therefore, government expenditures = 10,300,000  $\times$  10% = 103,000  $\times$  20 = 2,060,000, or about US\$3,678.

Total donor expenditures = Tsh448,000,000 + 412,000,000 = Tsh860,000,000, or about US\$1,535,714

Total government + donor + private = Tsh2,060,000 + 860,000,000 + 151,338,650 = Tsh1,013,398,650, or about US\$1,809,640

Percentages:

Private	= 15.0%
Government	= 0.2%
Donor	= 84.8%

## **ESTIMATION OF EXPENDITURES ON INFORMATION, EDUCATION AND COMMUNICATION (IEC)**

For IEC, the figure used is the amount spent by NACP in 1994 on the prevention of sexually transmitted diseases (Table B6). The total amount of US\$1,020,904, which is about Tsh571,706,240, was contributed by donors (WHO, UNDP, UNICEF and the European Community).

## **ESTIMATION OF EMPLOYERS' EXPENDITURES ON HIV/AIDS (TABLE B1: COLUMN 5)**

The labour force survey conducted in 1990–1991 showed a total of 874,504 people employed in the formal public and private sectors. Since 1994, this number is not likely to have increased substantially due to civil service reforms introduced as part of the structural adjustment programme. There has been retrenchment of employees in the public sector and a freeze on employment, and many parastatals have either been sold to private operators or have closed down. However, the decrease in the number of employees in the formal wage employment sector may have been offset by the growth in private sector wage employment, which is in the range of 300,000–400,000 people. For calculations we estimate the number at 350,000.

Adequate data on employers' medical bills for employees could not be obtained. Data from one large parastatal (The National Insurance Corporation) were obtained and are generalized (with caution) to the whole private wage employment sector (formal) where employers pay for their employees' medical expenses.

The National Insurance Corporation has 1,799 employees. The medical bill for treatment of its workers for the year 1995 was Tsh180,770,930, giving a cost per employee of Tsh100,484 for one year.

We assume that on average all employers incur the same amount per employee. We also assume that on average, about 10% is spent on AIDS-related complications. This equals Tsh10,048. The AIDS prevalence rate in urban areas where most of these employees are located is about 7.5%, which puts the estimated number of employees with HIV/AIDS at 26,250. Total employer expenditures for the treatment of AIDS are thus estimated to be  $10,048 \times 26,250 = \text{Tsh}265,740,000$ .

It should be noted, however, that average employer expenditures on the treatment of employees may be less because many employers do not have the NIC capacity. NIC is likely to have more financial resources relative to other parastatal and private institutions and is therefore able to incur more expenses on employees' treatment, including sending patients outside the country for treatment.

APPENDIX B

SUPPORTING TABLES

**Table B1: Total AIDS expenditures by source and utilization**

	Government Tsh (% total)	Donor Tsh (% total)	Private Tsh (% total)	Employers Tsh (% total)
Curative	539,945,714 (28%)	154,985,282 (2.9%)	1,063,327,418 (55.3%)	265,740,000 <sup>1</sup> (13.8%)
Preventive	76,000,990 (1%)	7,826,850,645 (98.8%)	16,805,062 (0.2%)	
Community	102,226,852 (3%)	3,147,138,109 (97%)	0	
Mitigation <sup>2</sup>				

Note:

1. See Appendix A for estimation of employer contribution.
2. No systematic data collection was done for expenditures on mitigation (details in Section 2).

Source: Study estimates in Appendix A and World Bank (1996).

**Table B2: Distribution of payer source for blood supply**

	Government	Donor	Private	Total
Tsh	10,641,334	135,401,840	113,179,500	259,222,674.00
US\$ <sup>1</sup>	19,002	241,789	202,106	462,897.00
% of total	4%	52%	44%	100%

Note: 1. Exchange rate used is Tsh560 = US\$1.0.

Source: Study estimates in Appendix A.

**Table B3: Distribution of payer source for control of STDs**

	Government	Donor	Private	Total
Tsh	13,227,491	9,803,920	44,942,990	67,974,401
US\$	23,621	17,507	80,255	121,383
% of total	20%	14%	66%	100%

Source: Study estimates in Appendix A.

**Table B4: Distribution of payer source for condom distribution**

	Government	Donor	Private	Total
Tsh	2,060,000	860,000,000	151,338,650	1,013,398,650
US\$	3,678	1,535,714	270,248	1,809,640
% of total	0.2%	84.8%	15.0%	100.0

Source: NACP and TAP; estimates based on certain assumptions (see Appendix A).

**Table B5: AIDS prevention expenditures by source**

ACTIVITY	Government		Donor		Private		Total	
	Tsh	% tot	Tsh	% tot	Tsh	% tot	Tsh	% tot
IEC	0	0%	571,706,240	100%	0	0%	571,706,240	30%
Blood	10,641,330	4%	0	52%	113,179,500	44%		
STD	5,474,691	9%	135,401,640	16%	44,942,990	75%		
Condoms <sup>1</sup>	0	0%	9,803,920	0%	0	0%		
Total <sup>2</sup>	25,928,825	1.4%	1,576,911,800	82.4%	309,461,1400	16.2%	1,912,301,765	100%

Notes:

1. Desegregated data not available.
2. Excluding expenditures on condom distribution.

Source: Study estimates in Appendix A and NACP (1995).

**Table B6: NACP Implemented activities**

Programme area	Total implemented US\$
Prevention of sexual transmission	1,020,904
Prevention of transmission through blood	259,063
Care and social support	119,002
Programme management & planning	325,748
Programme monitoring & evaluation	26,600
AIDS/HIV/STD epidemiological surveillance	17,507
Total	1,768,824

Source: NACP (1995).

**Table B7: Activities implemented by non-health sectors and NGOs through NACP funding, 1992-1994**

YEAR	SECTOR/NGO	ACTIVITY	COST (Tsh.)	COST (US\$)
Total 1992			24,624,362	492,49
Total 1993			139,603,123	325,765
Sep 1994	NGO Networking Organizing Committee	Establishment of effective and vibrant network among AIDS/NGOs in East Africa	2,430,000	4,500
Oct 1994	The University of Dar es Salaam, Faculty of Law	Research into legal aspects of AIDS epidemic in Kagera, Mbeya, Dar es Salaam and Arusha	5,210,000	10,420
Oct 1994	UPENDO Information & Counselling Centre	Provision of home-based care for PWAs/those infected with HIV	5,154,000	10,308
Jan-Dec 1994	German Development Service	HIV/HTA intervention project southeastern area	29,059,000	55,775
Jan-Dec 1994	GTZ	HIV/HTA intervention project southwest and northeast	143,051,9400	264,911
1994	AMREF	HIV/HTA intervention project umbrella function	49,150,619	94,339
Jan-Dec 1994	World Vision Tanzania	HIV/HTA intervention project central zone and Arusha	99,614,158	191,198
Total 1994			333,669,717	631,451
GRAND TOTAL			497,897,202	1,006,465

Source: NACP (1995).

**Table B8: Distribution of reported blood donations by year of donation**

Year	Total Reported blood donations		Reported blood donations with known age and sex		Reporting hospitals	
	Number	% of total transfusions	Number	%	Number	%
1987	4,285	3	555	13	6/182	3
1988	13,807	10	3,680	27	14/182	8
1989	35,049	24	12,251	35	103/182	57
1990	28,399	20	24,885	88	123/182	68
1991	81,325	56	78,549	97	158/182	87
1992	64,294	45	62,489	97	140/182	77
1993	59,743	41	58,594	98	100/182	55
1994	37,156	26	35,638	96	42/182	23
1995	22,570	16	22,029	98	61/182	34

Source: NACP Report (1996).

**Table B9: Disease share of health-care spending versus disease share of burden of disease: Tanzania**

Cause of death	Ratio
Perinatal/maternal	0.6
Malaria	1.0
Diarrhea	0.6
Pneumonia	0.5
AIDS	2.3
Tuberculosis	1.5
PCM	7.8
Measles	1.2
Injury/trauma	0.7
Cardiovascular	0.3

Ratio = percent of spending : percent of burden of disease.

Source: World Bank (1996).

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