DISTRIBUTION OF ANTIRETROVIRAL DRUGS IN ZAMBIA: AN ETHICAL INVESTIGATION

By

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DECLARATION

I hereby declare the work presented in this study for the Master of Arts Degree in Philosophy and Applied Ethics is the result of my own work and it has not been previously submitted for a degree, diploma or other qualification at this or another university. Various persons and organizations to whom I am indebted are greatly acknowledged.

Signed: ..... Date: 05/06/06

Student

CERTIFICATE OF COMPLETION OF DISSERTATION

I Chrispin Chomba hereby certify that this dissertation is the product of my work and in submitting it for my Master of Arts Degree in Philosophy and Applied Ethics programme, further attest that it has not been submitted in part or in whole to another university.

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I/We Dr. George SPIELTHENNER having supervised and read this dissertation; am/are satisfied that this is the original work of the author under whose name it is being presented. I/We confirm that the work has been completed satisfactorily and is ready for presentation to the examiners.

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CERTIFICATE OF APPROVAL

This dissertation of Chrispin Chomba has been approved as partial fulfilment of the requirements for the award of the Master of Arts degree in Philosophy and Applied Ethics by the University of Zambia.

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Examiner III

ABSTRACT

There were about 40.3 million people living with HIV/AIDS in the world by the end of 2005, and approximately 95 per cent of them live in developing countries. During 2004 alone nearly three million people died of AIDS related illnesses in the world and a similar number of deaths were experienced by the end of the year 2005. Sub-Saharan Africa is by far the worst affected in the world by the AIDS epidemic. This region accounted for about 64 per cent of all people living with HIV by the end of 2005. In Zambia 920,000 adults and children were living with HIV and AIDS by the end of 2004.Many of these deaths can be prevented by providing access to adequate treatment with antiretroviral drugs (ARVs) for opportunistic infections

The Zambian government declared its commitment to provide antiretroviral drugs for all people in Zambia who need them. However, despite government commitment, antiretroviral drugs are accessible only to a minority of those who need these drugs. Currently there are about 200,000 people in Zambia who need antiretroviral drugs. However, as of January 2005, only about 15,380 of those people who need ARVs were put on treatment. This means that only a few of those who need ARVs have access to them and this raises the question of how these scarce drugs *ought* to be fairly distributed among the many people who need them.

On the basis of this background, the main objectives of this study are firstly to assess the current government distribution policy of antiretroviral drugs in Zambia from an ethical point of view and secondly to suggest ways in which this distribution mechanism could be improved.

In order to achieve these aims the dissertation is designed as follows: chapter one highlights the current HIV and Aids situation in Zambian in relation to antiretroviral treatment and shows that even though there are many people who are infected and need antiretroviral treatment, only a small number of these patients are put on treatment. The second chapter explains how ARVs are currently distributed in Zambia. Its main finding is that there is no written policy on distribution of antiretroviral drugs in Zambia. However, a mechanism of distributing these drugs exists. In chapter three an attempt is made to critically evaluate the Zambian mechanism of distributing ARVs. Its strength and weaknesses are explained in a detailed way. The main strengths with Zambian mechanism of distributing antiretroviral drugs are that currently these drugs are

distributed to patients free of charge. The distribution of ARVs is demand driven and thus prevents wastage of these drugs. The other strength is that each patient is given equal rights in receiving ARVs. The major weakness with the system is the lack of a specific policy of distributing these drugs. The other weakness is the use of first-come-first-served principle in distributing ARVs to patients. It has also been established through the study findings that the Zambian ART distribution system has largely used the clinical and lacks ethical considerations in administering of these drugs. In the last chapter, a number of recommendations are made on how the current system of distributing antiretroviral drugs could be improved. These suggestions are based on analysis of various distribution principles.

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I would also like to extend my deeply felt gratitude to St. Bonaventure Seminary management for their permission to use their library material that has been of great help to me. I sincerely thank the Librarian for her assistance and understanding at all the times I spent in the well-stocked library.

To all the Directors of health facilities I visited during this study, I say thank you for your openness and willingness to provide me with information on how ARVs are distributed at health facilities.

My very sincere gratitude is also extended to all those I am not able to remember but who contributed to this study in some way.

DEDICATION

This dissertation is dedicated to the disadvantaged groups of Zambia who are living with HIV and AIDS. These people include the poor, the physically incapacitated, the children and those living in remote parts of the country and have little or no access to ARVs.

TABLE OF CONTENTS

ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral Therapy
ARV	Antiretroviral
BMA	British Medical Association
CBoH	Central Board of Health
CHAZ	Church Association of Zambia
CIDRZ	Centre for Infectious Diseases Research in Zambia
DHMT	District Health Management Team
DHS	Demographic and Health Survey
ELT	Exotic Medical Life Saving Therapy
HAART	Highly Active Antiretroviral Therapy
HIV	Human Immunodeficiency Virus
KCM	Konkola Copper Mines PLC
MoH	Ministry of Health
NAC	National HIV/AIDS/STI/TB Council
PMTCT	Prevention of Mother-to-Child Transmission
UNAIDS	Joint United Nations Programme on AIDS
VCT	Voluntary Counselling and Testing
WHO	World Health Organization
ZAMDHARP	Zambia Disability HIV/AIDS Human Rights Programme

INTRODUCTION

Many medical resources are potentially scarce. These may include medical machinery such as ventilators and dialysis units, drugs, blood, organs and even the medical practitioners. When demand for medical resources is greater than the supply, difficult moral problems emerge. McConnell (1997: 15) noted two moral problems that arise if this is the situation: firstly, as long as the supply of a given resource is inadequate, to whom do we allocate it? Secondly, what should we do to increase the supply? Other moral questions that are triggered when the demand or the need for a medical resource exceeds the available supply are: who among the patients shall receive the scarce resource and what criteria should be used in deciding who receives the scarce resource? How should the scarce resources be fairly distributed among various districts or health centres? The decisions to these questions are not purely medical but also moral. Antiretroviral drugs (ARVs) are among the scarce drugs in many countries worldwide, particularly in developing countries. Even though the majority of the people who are infected with HIV are in Africa, only some among them access ARVs.

USAID, UNAIDS, WHO, UNICEF (2004) reports that comprehensive treatment with ARVs has reduced death rates for people living with HIV and AIDS[1] by 70 per cent in the rich continents such as North America and Europe, where these kinds of drugs have been available since the mid 1990s. ARV drugs have the potential to dramatically improve the health and extend the lives of people with HIV/AIDS. Yet the high cost and demanding clinical requirements of these drugs put them out of reach of the vast majority of people with HIV. This problem is especially acute in developing countries where HIV infection levels are high and public resources are extremely scarce.

Antiretroviral drugs are among the scarce medical drugs in Zambia. Because of the benefits that these drugs have to HIV/AIDS patients and because of the country's economical situation, the number of patients who need these drugs currently exceeds the available ARVs. Statistically only about 7.6 per cent of the people requiring the drugs in

[1] HIV and AIDS do not mean the same thing. HIV stands for Human Immunodeficiency Virus and it refers to the virus that attacks the human immune system and weakens it to an extent where it becomes prone to attacks from several other viruses. HIV is a virus that causes a condition that is called AIDS. AIDS stands for Acquired Immunodeficiency Syndrome. It is a condition that develops in the body of the infected when the infection becomes advanced and the body's immune system becomes too weak to protect it from various attacks. This condition brings in opportunistic diseases such as Pneumonia, Tuberculosis and Syphilis.

Zambia are currently on ARVs (MoH and CBoH, 2004: 8). Given the scarcity of these drugs in relation to the people who are in need of them, it becomes necessary to have a distribution mechanism that ensures that the ARVs are fairly distributed. It is in fact the aim of the government that these drugs are distributed fairly. This thesis, therefore, makes an attempt to discuss how ARVs could be fairly distributed in Zambia with reference to the current existing distribution mechanism. In order to systematically do this, the paper will first of all throw light on the current status of ARVs and HIV/AIDS pandemic in Zambia while stressing the benefits of ARVs to the people living with HIV and AIDS.

Given this background, this thesis is designed as follows: Chapter one gives a general overview of the HIV/AIDS pandemic and the ARV treatment in Zambia. Chapter two looks in detail at how ARVs are currently being distributed in Zambia to health facilities and to individual patients in different districts. Chapter three presents a critical ethical evaluation of the current distribution mechanism of ARVs in Zambia. Chapter four makes some suggestions on how the current ARV distribution mechanism could be morally improved by making reference to various ethical theories and principles of justice.

Purpose of the Study

The main objective of this study is:

- To assess the current government distribution policy of ARVs in Zambia from an ethical point of view and to suggest ways in which it could be improved.

Specific objectives

- To critically investigate the existing ARV distribution framework of the government and other organizations involved in distribution.
- To investigate ethical theories and principles concerning their suitability for the distribution of ARVs in Zambia.
- To make suggestions and recommendations on how the current ARV mechanism in Zambia could be fairer.

Significance of the Study

The main reason for undertaking this study is its relevancy to the current Zambian HIV and AIDS situation. There are many people who are infected with HIV/AIDS and need ARVs. On the other hand, the amount of these drugs cannot cater for all the patients who need them. The Zambian government through the Ministry of Health has set targets in ensuring that all the HIV/AIDS patients are put on ARVs by 2006. Despite the government commitment, not all of the people who need ARVs will be put on treatment. It becomes very relevant, therefore, to assess whether the distribution of these drugs is done in a fair manner. A contribution that this study should make to the fight against HIV/AIDS is the promotion of justice in the distribution of ARVs in Zambia. Despite the abundance of information on HIV/AIDS, very little has been researched and written on the ethics that ought to govern the distribution of ARVs. Much has been written on the problems surrounding the allocation of scarce resources such as dialysis machines and drugs but not specifically on ARVs and particularly not focusing on Zambia. Much of bioethical literature has particularly focused on ethical principles and theories, such as confidentiality, informed consent and the right to privacy in the treatment of HIV infected people.

Another significance of this study is that the findings would be helpful to policy makers and other stakeholders involved in the distribution of ARVs to make just decisions. It is hoped that by so doing, it will contribute to the existing body of knowledge.

Methodology

The methodology of this study is a philosophical investigation coupled with a qualitative study. The study will be largely a documentary that relies on reviewing relevant philosophical literature in relation to distributive justice. The methodology will also involve gathering empirical data from the Central Board of Health and health centres in order to establish how ARVs are currently distributed in Zambia. Eight health facilities will be visited during this study. The health facilities are: UTH, Chelstone clinic, Bauleni clinic, Mtendere clinic, Kabundi east clinic in Chingola, Chibwe health centre in Kapiri, Kapiri Mposhi district hospital, Chawama rural centre in Chingola and Kabwe general

hospital. These data will be obtained by use of scheduled interviews with relevant authorities. Several documents obtained from these sources will be reviewed. The data on other countries' distribution mechanisms will be obtained through the Internet. The philosophical investigation will be based on critically analyzing the existing antiretroviral drugs distribution mechanisms of the Zambian government. Various policies and guidelines regarding distribution will be subjected to critical scrutiny. In order to do so, different ethical theories and principles will be evaluated in order to come up with suggestions of how to make the distribution of ARVs in Zambia more just.

The information on the Zambian ARV distribution mechanism presented in this dissertation is based on a number of personal interviews the researcher had with the ART programme national coordinator, Directors of District Health Boards, Administrators of Health facilities and information on distribution mechanism obtained from other government policy documents.

Limitation of the Study

The study will be limited to public health facilities. There are a number of private organizations and institutions distributing ARVs to people in Zambia. This study, however, will concentrate only on how ARVs are being distributed in public health centres. There might be differences on how ARVs are distributed in private organizations and Non Governmental Organisations. The suggested mechanism of distributing these drugs in Zambia therefore only applies to public health facilities. The study also will not look at how ARVs are being distributed in each and every health centre of Zambia; rather it will be based on selected health facilities.

The study is also limited in subject scope coverage. There are many issues regarding HIV and AIDS, but this study is interested in the ethical dimension of distributing ARVs. There are many issues related to the distribution of scarce medical resources that the researcher is aware of but which are beyond the scope of the study. For instance, there are a number of ethical issues dealing with procurement and pricing of the ARVs that have not been tackled in this study. One ethical problem that the researcher is aware of but will not deal with in this study is the acquisition and supply of ARVs in Zambia. It is mainly the central government funded by donors that are involved with acquisition and supplying of ARVs. A number of Non-Governmental Organizations are also involved in this process. A major issue in distribution has to do with drug sourcing

and quality control. But these problems are beyond this study. There have been some concerns about governance issues relating to sourcing and distribution of ARVs in Zambia, just like other different third world countries.

CHAPTER 1: OVERVIEW OF HIV/AIDS AND ANTIRETROVIRAL TREATMENT IN ZAMBIA

This chapter outlines the current HIV and AIDS situation in Zambia and the use of Antiretroviral Therapy (ART). This statistical information is relevant to the understanding of the AIDS trends in relation to ARVs. ARVs have the potential to reduce the number of deaths caused by AIDS but they are usually in short supply in relation to the number of people who are infected.

According to estimates and projections from the UNAIDS/WHO AIDS Epidemic Update (December 2005), there were about 40.3 million people living with HIV/AIDS in the world by the end of 2005, and approximately 95 per cent of them live in developing countries. Nearly half of all people living with the virus in the world are now women. The Sub-Saharan Africa is by far the worst affected in the world by the AIDS epidemic. Even though the region has just over 10 per cent of the world's population, it accounted for about 64 per cent of all people living with HIV by the end of 2005. The proportion is set to grow even further as infection rates continue to rise in countries where there is poverty, poor health care systems and limited resources for preventing the spread of the virus. Zambia is one of the countries most affected by the HIV/AIDS pandemic. At the end of 2004 about 920,000 adults and children were living with HIV and AIDS;[2] 470,000 of these were women aged between 15 and 49. Young women are particularly vulnerable, with 11 per cent of women in the 15-24 age group infected, compared to three per cent of men in the same age group. During 2004 alone nearly three million people died of AIDS related illnesses in the world and a similar number of deaths were experienced by the end of the year 2005. Many of these deaths can be prevented by providing access to adequate treatment, including for opportunistic infections and ARVs, for all people living with HIV/AIDS (USAID, UNAIDS, WHO, UNICEF, 2004: 42).

Until recently these drugs were not available in many countries of the developing world. The estimations in 2003 were that, out of the six million people who needed antiretroviral drugs in developing countries, only seven (7) per cent (approximately 440,000) received them. The Zambian National AIDS council (National HIV/AIDS/STI/TB Council, 2004) also reported that out of 179,000 people who needed

[2] http://www.state.gov/s/gac/rl/cp/50895.

the ARVs in the year 2003 only 1,121 people accessed these drugs in Zambia. This represents only 0.6 per cent of the people who needed these important drugs. Compared to the year 2003, the number of people currently on ARVs has increased in the year 2005 to about 7 per cent. The MoH and CBoH (2004) report indicates that about 200,000 people needed ARVs in Zambia and the immediate target by the Ministry of Health was to put 100,000 people on antiretroviral drugs by the end of 2005. However, as of 1st January, 2005 only about 15,380 were put on these drugs (MoH and CBoH, 2004: 7). This is only about 7.6 per cent per cent of those who require ARVs. There are currently about 12,856 people in Zambia receiving ARVs through the public healthcare sector. There are, however, others who are accessing these drugs from the private health sector. These include those that receive ARVs provided for by their employing companies such as KCM.

Even though ARV drugs are a relatively new strategy for controlling the HIV/AIDS epidemic, their benefits to HIV and AIDS patients cannot be overrated. Lessons learned from developed countries have shown that ART[3] has reduced HIV/AIDS related mortality and morbidity, prolonged life expectancy, and improved the quality of life and productivity of AIDS patients. Helena (1999: 17) also noted that when used for preventing mother to child transmission, ARV drugs have reduced HIV incidence among new born and paediatric AIDS cases. ART has also acted as an incentive for Voluntary Counselling and Testing (VCT) and has broadened the reach of prevention messages. ARVs are also used to treat HIV-infected people by using Highly Active Antiretroviral Therapy (HAART). This consists of using a cocktail or mixture of ARVs, usually three types of drugs, plus other support drugs and services. It is recommended that a person with HIV/AIDS to whom antiretroviral therapy has been initiated remains on ART for life. Though ART can lead to significant improvement in the quality of lives of AIDS patients, it does not lead to a cure of HIV/AIDS but can enable a person with HIV/AIDS to live close to normal life.

Even though ARV treatment involves many aspects such as medical and socio-economic issues, this paper focuses on the problem of fair distribution. It presents a

[3] ART refers to the treatment of HIV positive adults or children with at least three antiretroviral drugs. Even though these drugs are not a cure for AIDS, they can stop HIV from developing into AIDS. ART consists of three drugs which work against HIV infection by inhibiting the reproduction of HIV in the body, hence preventing the spread of HIV to other cells of the human body. These drugs are referred to as antiretrovirals (ARVs).

detailed and critical investigation of the ethical issues that ought to govern policies and guidelines in the distribution and accessibility of antiretroviral drugs in Zambia. There has been an increase in research focusing on various aspects of HIV/AIDS, including principles that should guide the physician-patient relationship in the treatment of this dreadful disease. However, little has been explored on the ethical principles that should govern the distribution of ARVs. Some countries have clear guidelines and policies guiding the allocation of ARVs to the people. However, Zambia does not have a written policy on how ARVs should be fairly distributed. There are also no clear guidelines in Zambia on various aspects such as who should be given priority to access ARVs in relation to sex, location and age of the infected and on who should not access ARVs when they are in short supply.

The problem at hand is two-fold. On the one hand, there is the problem of accessibility and on the other there is the distribution problem. However, these problems are related because accessibility is partly a consequence of the distribution mechanism. If the distribution services are biased, then the services will not be accessible to some people. The service is said to be accessible if it is available and people are accessing it with ease. Distribution, on the other hand, has to do with making the service available. It is possible that the service is available and yet it is not accessible to the marginalized groups such as women and children, people living in rural areas and the poor. The problem with regard to ARVs in Zambia has to do with both distribution and accessibility. However, this study confines itself to the problem of distribution. Event though the major aim is to answer the question of how ARVs can be fairly distributed, accessibility will also be discussed in as far as it is a consequence of distribution.

Ethical problems arise in the distribution and accessibility of ARVs in Zambia on grounds that there is an urgent need for ARVs by the infected, while on the other hand most of these cannot access them because they are beyond their reach. As of 2005, ARVs have been free. However, there are a number of constraints that still place these drugs beyond people's reach. Among these constraints are: long distances to facilities, shortage of the drugs and the fact that many of the patients are too poor to afford the nutrition requirements that should go along with taking these ARVs. Furthermore, even some of the patients who can afford ARVs are not put on treatment because the available ARVs are not enough for all those who need them. One major ethical question is how the

government should distribute these drugs in a fair way. Another issue that needs to be looked at is the ethics of prescribing ARVs to a population that cannot afford it and a medical infrastructure that is too weak to deliver even the most basic health needs. Many Zambian hospitals can neither afford routine HIV tests nor monitor the safe use of many drugs including ARVs. Because of these requirements such as nutrition, these drugs are out of reach to many HIV infected Zambians who earn less than K500,000 per month (National HIV/AIDS/STI/TB Council, 2004: 69).

Before 2005, an ethical aspect that required further investigation was the cost of ARVs. The National Aids Council (2004: 71) reported that the cost of the antiretroviral therapy in Zambia ranged from K40,000 to K150,000 per month before they were made free in August 2005. Accessing the ARVs from public facilities was costing K40,000, while accessing the ARVs from private clinics was costing them between K100,000 to K150,000 per month. This was the greatest barrier to accessing these drugs for the majority of Zambians where more than 80 per cent of the people live below the poverty line. ARVs are now provided free of charge in public health facilities in Zambia. However, ART involves other costs such as the amount of money needed to be spent on nutrition given that antiretroviral drugs need to be taken with food for life. Once a person begins taking ARVs, they have to continue taking them. This is called *drug adherence.* If patients are unable to take these drugs every day, HIV might become resistant, which means that the drug will no longer be effective. This is a problem, as there are only a limited number of antiretroviral drugs available. It is therefore important that a constant supply is ensured and that people should access these easily at all times. The ethical question facing the physician, government and other providers of the service is therefore: would it be ethical to offer and initiate a first therapy when they know that patients may not be able to afford the later therapy?

The Ministry of Finance (2005: 28) acknowledged that there is inequitable access to basic health services in Zambia between locations, sex, age, and social class. In the urban areas, 99 per cent of households are within 5 kilometres of the health facility compared to 50 per cent in rural areas. At the end of the year 2004, there were approximately 18 per cent (922,000 - 1,000,000) of Zambians living with HIV/AIDS. The National HIV/AIDS/STI/TB Council (2004) indicates that 18 per cent of women were infected as opposed to 14 per cent of men in the year 2003. The worst affected were

those aged between 25 to 34 years. More than 50 per cent of those who had access to ARVs were male as opposed to only about 30 per cent of their female counterparts. Only about 20 per cent of the children accessed these drugs in 2003. The majority of those who had access to these drugs lived in towns and were from the middle and higher class (USAID, UNAIDS, WHO, UNICEF, 2004). The above statistics show that the distribution of ARVs in Zambia is biased towards sex, age, location and socio-economic status. An ethical concern that needs to be looked at is whether access to ARVs should be based on sex, age, location, or social economic status or rather on equity. It is within the parameters of this study to evaluate all these issues with a view of suggesting a more just distribution policy.

Another aspect that ought to be addressed in relation to distribution of ARVs in Zambia is the administering of these drugs in hospitals and clinical infrastructures that cannot adequately support this exercise. In order for antiretroviral drugs to be used safely and effectively, they need to be incorporated into health systems with functioning and affordable services. Among other things, the system should include quality laboratory support for diagnosis of HIV infection to monitor the progression of the infection and the development of drug resistance, counselling and support for patients to promote drug adherence and highly qualified informed and trained physicians to ensure proper use of the drugs. Health care facilities are not accessible to the majority of the third world countries. Geloo (2004) laments that Zambia's cash-strapped hospitals can neither afford routine HIV tests nor monitor the safe use of any drug, let alone ARVs. As a consequence, access to ARVs is high in urban areas that have good health infrastructure. Despite the many distribution centres across the country, people in remote rural areas have trouble accessing treatment, due to the lack of adequate transportation and the cost involved.

Helena (1999: 6) observed that the enormous advances in HIV medicine have not been of much benefit to the developing world, where, according to her, more than 80 per cent of HIV infected individuals reside. One reason for this is the fact that ARVs are so expensive that many of these countries would exhaust their entire health budgets if they decided to provide all the HIV-infected individuals with antiretroviral therapy. The Zambian government has declared its commitment to provide antiretroviral drugs for all people in Zambia who need them by the year 2006. However, looking at the progress

made so far in achieving this ambition, it is clear that it will not be possible for the government to put all people who need ARVs on treatment by the end of 2006. There is, therefore, still the problem of how ARVs ought to be fairly distributed.

This study will evaluate the current ARV distribution mechanism in relation to equity based on various ethical principles and theories of justice. Among the principles that will be critically evaluated in line with the current system are:

- Each according to equal share
- Distribution according to free market
- Distribution according to social value
- Distribution according to merit
- First-come-first-served

Some theories of justice that have also been looked at in this study includes:

- The Libertarian/rights theory
- Utilitarianism
- Egalitarian Theory

CHAPTER 2: THE CURRENT ZAMBIAN MECHANISM OF DISTRIBUTING ANTIRETROVIRAL DRUGS

This chapter will explain how ARVs are currently being distributed to each district and each health facility and it will discuss how individual patients access them. It is very important to understand how the system works before giving a fair analysis of that system.

2.1 Distribution of ARVs to Health Facilities

Zambia has been implementing health reforms since 1992 under the framework of the Sector Wide Approach (SWAP), which took a holistic development view of the sector. According to the Ministry of Health (2004: 12), the vision of these health reforms in Zambia was to 'provide equity of access to cost-effective, quality health care as close to the family as possible', with the main mission of significantly increasing life expectancy in Zambia by creating environments and encouraging life styles that support health. The health reforms ensured that the Ministry of Health was decentralized into five main areas.

The lowest level for health is the Area Boards of Health (ABH) that are set up to divide the population into manageable health districts. Among other functions the ABHs monitor and support the functions of health centres. These ABHs report to the District Health Boards (DHB). Among the roles of DHBs are the following: to administer the affairs of the district and to be responsible for the planning of the district. The DHBs are also responsible for monitoring the performance of health clinics and hospitals. The next level is the Provincial Health Office (PHO) whose roles include providing technical support, monitoring and evaluation, logistical support that involves the supply of equipment, drugs, vaccines, etc. from the national level to the districts. The provincial Boards then report to the CBoH, which in turn reports to the Ministry of Health (Ministry of Health, 1992: 30).

With the implementation of Zambian health reforms in 1992, new roles were assigned to the government, individuals and communities in the health care delivery system. This saw the establishment of the Central Board of Health (CBoH) in 1995. The mandate of the CBoH is to 'monitor, integrate, and coordinate the programmes of the Health Management Boards' (Ministry of Health, 1992: 37). After the reforms, the

Ministry of Health's role was primarily policymaking. The Ministry thus became a regulatory institution. The Ministry of Health no longer has any direct involvement in health service delivery; these are delegated to the central Board of Health (Bossert et al., 2005). With the growing concern of putting many HIV patients on ARVs, the Ministry of Health established the National ART Programme at the Central Board of Health. This programme is responsible for procurement and distribution of ARVs to the health centres in Zambia. The aim of the national ART programme was to provide a programme capable of treating 100,000 people living with HIV and AIDS in Zambia by the end of the year 2005. The ART programme is headed by the ART national programme coordinator Dr. Albert Mwango (Seshamani, 2002: 28).

According to the MoH and CBoH (2004: 7), there were, as on 31st December 2004, about 200,000 Zambians in need of ARVs. These are the people that have undergone Voluntary Counselling and Testing (VCT) and know their HIV status. However as of 1st January 2005, there were only 15,316 people on ARVs. Of these 12,856 were in public health facilities (government and mission hospitals and clinics), whereas 2,460 were in private health facilities. In terms of sex and age distribution, there were about 4,417 (28.82 per cent) men, 4, 855 (31.67 per cent) women, 403 (2.63 per cent) children and 5,653 (36.88 per cent) of those reported to be on treatment (MoH and CBoH, 2004: 7). As of January 2005, there were sixty-four (64) public health facilities providing ARVs across Zambia. (A summary on how ARV distribution centres are spread in Zambia is presented in Appendix I.)

According to Dr. Mwango,[4] there is currently no written policy on how ARVs should be distributed in Zambia. However there is a mechanism by which ARVs are distributed from CBoH to each district, from the district to each health facility and from health facilities to individual patients. The only policy guiding the distribution of ARVs is the Zambia health policy that stipulates that 'people have a right of equal access to affordable health care of good quality'. Elsewhere the policy stipulates that 'every able-bodied Zambian with an income should contribute to the cost of his or her health' (Ministry of Health, 1992: 28).

The distribution of ARVs to each health facility is 'demand driven'. This means that ARVs are only distributed to health facilities if the health facilities or distribution centres

[4] Interviews on 27/06/05 and 13/07/05.

request for them from District Health Management Teams (DHMT). The DHMT on the other hand make requests for the amount of required drugs from CBoH. The Health facilities have a responsibility to recruit patients to be put on ARVs. The first step to be undertaken before any patient is put on ARVs at the health facility is VCT. Patients who are found to be HIV positive are then registered at the facility as HIV patients. Health facilities distributing ARVs have special clinics for HIV/AIDS positive patients called HIV/AIDS clinics. The next stage is that the HIV patients will undergo clinical screening to establish whether they are eligible for ART. Those who are found to be eligible for this treatment are enrolled at the health facility's ART clinic. Once a health facility has compiled the list of people who require ARVs, the facility's pharmacist will make a request for the required number of drugs for that health facility on a weekly basis from the District Health Management Boards. The district boards will then compile all the requisition lists from each health facility in the district and make a requisition for the required ARVs for the entire district from the CBoH. This is done after every three months. The procured drugs are then distributed from CBoH to District Health Management Boards in proportion to the number of people who require these drugs in each district. These drugs are later distributed to each health facility *proportionately* to the number of people on the requisition list. It can be seen from this that different districts will have variable supplies of ARVs depending on the number of people who need the drugs. What determines the number of ARVs to be provided to each district and later to each health facility is the number of patients on the requisition lists. The more people are on the request list, the larger is the demand and the more ARVs will be given to that particular centre. This does not, however, mean that the centres are always given as many drugs as they requested. This is because the finances and other constraints limit the amount of drugs that the government procures. For instance in the year 2004, the government managed to procure only a few of the needed ARVs. Of these that were procured, none of the '3 fixed dose combinations first regimens' that the majority of the Zambian patients are taking were received in the country earlier than the end of October (CBoH and MoH, 2004: 8).

Because of circumstances like these, the CBoH distributes the drugs *proportionately* to the number of people on the request lists in each district. To illustrate this, if the number of people who need ARVs on the Lusaka district request list compared to the

number of people who require these drugs on the Kabwe request list is of the ratio 3:1, then the number of ARVs to be given to these districts will also be of the ratio 3:1. For instance, assume there are 600 people on the Lusaka district requisition form, while there are 200 on the Kabwe list, but the amount of drugs procured by CBoH is only 300. Assuming that these are the only districts which had requested for the drugs and keeping other considerations constant, then Lusaka will receive 225 ARVs while Kabwe will receive 75 ARVs. This means that both districts receive much less ARVs than they requested for, but the distribution is proportionate. This is justified on grounds that the demand for ARVs in Lusaka is three times higher than Kabwe. Implicitly this means that if a district has not requested for ARVs, then it will not receive any. This criterion is also employed when allocating ARVs to each health facility from the district. For instance, assume that the people requiring ARVs at the following health facilities in Lusaka are: UTH: 500, Chelston clinic: 200, Kalingalinaga clinic: 150 and Bauleni clinic: 100 and that the available drugs for Lusaka district are only 224. In this case UTH would receive about 118 ARVs, Chelstone clinic would receive about 47, Kalingalinga clinic 35, while Bauleni would receive about 24 ARVs. The amount of ARVs received by each facility is proportionate to the number of eligible ARV patients on the request list presented to DHMT.

Apart from the demand, the amount of ARVs provided to the health facilities will differ depending on the consideration: that the centre must have enough trained ARV human resource. The centre should be equipped with at least one doctor, clinical officers, nurses, a counselling officer, pharmacy staff and laboratory staff. All these should have had some training in handling ART. The infrastructure should be able to support the ART. The health centre should also have a laboratory with the following equipment: Binocular analyser, Chemistry analyzer, Incubator, Distiller, Hot air oven, Electrophoresis tank, PH meter, safety cabinets and other equipment. One of the prerequisites for a patient to be put on ART is that he/she knows his/her HIV status as positive. This means that a centre should have a VCT centre in place to conduct this activity. Besides, the centre should have other logistics such as transport in place (MoH and CBoH, 2004: 22).

The amount of ARVs distributed to each centre will, therefore, be in accordance with the above considerations. This makes the distribution mechanism unclear because it is not

only proportionate to demand but other factors mentioned above are also considered. What this mechanism means is that a centre with more trained manpower in ART, adequate infrastructure, and adequate logistics will receive more ARVs than centres with less of the above. When the number of people who require ARVs exceeds the capacity of the health centre to support that number, patients are either turned away or referred to the nearby ART centre. The capacity of each health centre to support ART is assessed by the District Central Boards of Health.

In theory, if the centres meet all these conditions, then another factor is considered. This is the district population size and the AIDS prevalence rate. A health facility located in the district with a high population size of HIV positive people and a high HIV/AIDS prevalence rate will receive more drugs than those in districts with low HIV infected population and a low prevalence rate. In practice this means that health facilities located in Lusaka district which has a population size of 157,997 infected and HIV prevalence rate of 20.7 per cent[5] will receive more ARVs than a centre in Mkushi with a population size of 77,171 (HIV infected) and HIV prevalence rate of 11.6 per cent. According to the ART coordinator, this consideration does not work in practice because of difficulties that arise when one attempts to put it into practice. The difficulties arise firstly, because some districts with high HIV prevalence rate have low population sizes while some districts with high population sizes have low HIV prevalence rate. Secondly, HIV prevalence rate cannot be established with exact precision (National HIV/AIDS/STI/TB Council, 2004: 75).

2.2 Distribution of ARVs at Zambian Health Facilities

Most of the ARVs in Zambian health facilities are obtained from the government in collaboration with other partners, which are mostly donors. These drugs are stored at district pharmacies and at medical stores. In order for health facilities to obtain the drugs, the health centre pharmacists have to request for the required ARVs from the District Health Management Boards through writing on a weekly basis. The criteria for putting patients on ARVs at health facilities are that they fulfil clinical requirements such as CD4

[5] HIV prevalence refers to the percentage of persons ages 15 and 49 who are HIV infected, e.g., 20.7 per cent prevalence simply means that the approximate proportion of those aged between 15 and 49 who are HIV infected in Lusaka is 20.7 per cent. This percentage is obtained by dividing the number of 15 to 49 years olds who are HIV-infected by the total number of 15 to 49 year olds in the population.

count[6] and the 'WHO stages'[7] (See Appendix II). Clinical requirements are beyond the scope of this study and hence will not be discussed in detail. The first stage in the distribution of ARVs at health centres is Voluntary Counselling and Testing. If someone is found HIV positive, he/she is referred to the ARV clinic within the first week of visit. It is at the ARV clinic where the HIV patients are registered and also undergo post test counselling. Some issues that are considered at in this stage are a discussion on whether a patient would be able to afford being on ARV for life (e.g. being able to maintain the required nutrition). Questions of whether a patient has relatives or friends to remind him/her to take these drugs every day are also discussed. This stage is followed by an assessment of whether a patient is eligible for ARVs. Each patient's CD4 count and WHO stage is reviewed. The health facilities only recruit patients who have met these requirements and are provided with ARVs once these drugs are available. The health facilities keep a register of all HIV patients and a register of those enrolled for ART. If the ARVs are available, eligible patients are put on treatment in week two of their visit to the health centre. They are expected to stay on this treatment for the rest of their life. From then on, the patients have to go constantly to health facilities for review of the drug adherence and the drugs' side effects. Usually patients beginning the treatment will be given drugs that last for two weeks. After two weeks, they will be expected to go back to the facility to get more drugs. Before they are given more ARVs, they have to discuss with health providers issues concerning drug adherence. Those who are positively adhering to the drugs will then be given more ARVs to last them for about three months at their second visits. (The above-discussed stages are summarized in Appendix III.)

All patients who meet these medical requirements are put on ARVs. However, if the number of these drugs is less than the number of patients requiring them, most of the health centres use the principle of *first-come-first-served.* This principle is based on the assumption that each eligible patient is given an equal (non-zero) chance of receiving the ARVs. The findings from this study reveal that there are two ways in which the *first-come-first-served* principle is applied in different health facilities. In some health

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[6] CD4 refers to a group of white blood cells that co-ordinate the body immune system. HIV attacks these cells and destroys the DNA structure of these cells. Once this is done, the body cannot protect itself from several infections. It is at this stage that a condition called AIDS is reached. The normal CD4 count for a normal human being is between 800 – 1200.

[7] WHO stages refer to the level of HIV infection. There are four stages as established by the World Health Organization. These stages are identified by examining symptoms that HIV and AIDS exhibit.

facilities, there are no waiting lists for the ARV eligible patients, while some still use waiting lists. (i) In those centres that do not use waiting lists, they have two other lists: a list of all HIV patients that are registered at the centre and a list of eligible HIV patients for ARVs. These lists are only a bare record of all HIV and ARV eligible patients recruited at particular centres. ARV eligible patients will then be subjected to the *first-come-first-served* criterion in order to receive ART. Whoever is on the ARV eligible patient list can access the drugs provided he/she is the one who has gone to the centre earlier than the other when the ARVs are available. This means, for instance, that if a person who appears on position twenty of the ARV eligible patient list goes to the centre a day or some hours earlier than a person on position one of the same list, then this person receives the treatment earlier than a person at position one of the list. This means, if there were only drugs for one person available, then that person at position twenty will receive the treatment on the pretext that he/she went for treatment earlier than the other person.

(ii) Contrary to information that waiting lists no longer exist in health facilities as a criterion of employing the *first-come-first-served* criterion, findings show that some health centres distributing ARVs still use waiting lists. Waiting lists are utilized in the following ways: eligible patients are put on the waiting list and the drugs are provided to them in the order of their position on the waiting list. Those that appear first on this list have earlier access than those appearing at the bottom of the list. In cases where the available drugs can only cater for a few on the waiting list, those that appear at the bottom of the waiting list will have to wait for the health facilities to have more ARVs or wait for some people on top of the list to die. Though this criterion is employed, it has a number of difficulties as pointed out by Dr. Mwango, the ART national coordinator. The Ministry discourages use of the waiting lists because they give people false hopes thinking that as long as they are on the list, then they will receive the drugs[8]. In practice, this is not true in that some patients, though on the waiting lists, never receive the drugs. Besides, this approach disadvantages many people who are at the bottom of the list. Another problem as explained by Dr Mwango[9], is that some of the people would move from the centres where they were registered into another place or districts despite being on the waiting list. For example, a person may be enrolled at Mtendere health centre and be in the first position on the waiting list. If this person leaves town, and starts staying in

[8] Interview with the ART national coordinator Dr Mwango on 13/07/05.
[9] 13/07/05 interview.

Mazabuka withoult notifying the clinic, the clinic would still be keeping the drugs for this person who may never come back. This disadvantages those who are available but are either not on the waiting lists or are at the bottom of the list. This results in a waste of ARVs. The criteria that someone should meet to be put on treatment are that someone:

- must be HIV-infected;
- must meet clinical and laboratory criteria for symptoms, for instance, viral load, WHO stages and CD4 count;
- must understand potential side effects;
- must understand the importance of strict adherence.

(National HIV/AIDS/STI/TB Council, 2004: 74)

All the four conditions should be met for someone to be put on treatment. If one of the conditions is not met, then a patient should not be given ARVs. Individually, these are necessary conditions for ART, while together they are sufficient..

CHAPTER 3: EVALUATION OF THE ZAMBIAN ARV DISTRIBUTION MECHANISM

This chapter attempts to give a critical but fair evaluation of the Zambian distribution mechanism. It aims to show the strengths and weaknesses of the current system of distributing ARVs. This will provide a basis for suggesting ways in which the current ARV distribution system can be improved which is the topic of the next chapter.

3.1 Strengths of the Zambian ARV Distribution Mechanism

The Zambian ARV distribution mechanism has some strengths and weaknesses. This section highlights the strengths of the current ARV distribution system in Zambia. These strengths will be consolidated into the mechanism that will be suggested in chapter four.

3.1.1 Distribution Is Demand Driven

In my view, one of the strengths of the current system is that ARVs are distributed across the nation according to the demand. This is done at two levels: firstly at district level and secondly at the health facilities. To put this in a simple way, for these drugs to be procured and later distributed to various District Health Management Boards (DHMB) means that there are people at health facilities in districts who require these drugs. What, therefore, determines the amount of ARVs distributed to each district and each health facility is the number of people who are eligible for these drugs and are enrolled at health facilities. It should be emphasised that these eligible patients should also be enrolled or registered at a health facility because some people who are HIV positive or have AIDS may in fact meet the clinical and other conditions necessary to be put on ARVs, yet they have not undergone clinical screening in order to be registered as eligible patients for ARVs. These patients do not form part of the demand group and thus are not part of the determinant for the amount of ARVs to be distributed to each district and to each health facility. To illustrate this point, consider an HIV positive person with a CD4 count of less

than 350 who is a WHO stage 3[10] but who has not however, undergone VCT and does not know his/her status. This person is eligible for ARVs yet does not know it and hence does not demand for the drugs; and neither will any health facility demand for ARVs for him/her.

Before proceeding to show the advantages of *the demand driven principle,* it is important to understand how the concept of demand is being employed in this system. 'Demand' is defined in a number of ways and also used in different ways. In economics, the term refers to the ability and desire of people to purchase goods and services. But 'demand' is also used to refer to requesting something urgently either by use of force or by use of a legal claim.[11] However, the relevant definition of demand which is embodied in the demand driven principle is that of *need.* According to this definition, demand is defined as the need that a person has for something. This means that there are, on the one hand, people who require something, for example, drugs, and on the other hand there is the government that should provide what is needed by the people. The government will provide the resource needed by the people through an established mechanism. This mechanism or system will be said to be 'demand driven' or 'demand led' if the system responds to requests from its recipients, subject to certain criteria being met. To illustrate this, it is widely accepted that every human being is entitled to health care. This means that he/she has a right to be treated when he/she falls sick and presents him/herself at a health facility. In other words, it is her condition that creates the demand for her treatment. Similarly, a mother or any other person who takes the child to the health centre for treatment is demanding that a child be treated. Demand in this way is closely related to rights or entitlements of individuals. Individuals demand for what they are entitled to or have rights to. Even adults who take the children to health centres for treatment somehow demand for their children's treatment because the children have a right to good health.

In a *demand driven* distribution system, it does not necessarily mean that patients in need of the drugs physically or directly ask for what they are entitled to from the government. For instance, HIV and AIDS patients may not necessarily voice out that they

[10] WHO stage 3 means that someone has one of the following symptoms: Severe bacterial infection, oral thrush/hairy leuplakia, >1 mo. diarrhoea, TB in last year or weight loss of less than 10 per cent of body weight, no diarrhoea, fever (CboH and MoH, 2004: 12).
[11] These definitions plus several others can be found at www.worldnet.princeton.edu/perl/webwn.

need ARVs. By virtue of them having a right to basic health care, these patients potentially demand to be treated as long as they are eligible for the treatment. Once the patients have undergone clinical screening and have met the conditions needed for them to be put on ART, they create demand, whether they have voiced it or not. The duty of the health facilities at this stage is simply to make requisitions for the ARVs on their behalf from the DHMB, which will then request for these drugs from CBoH. The Ministry of Health through CBoH will procure ARVs on recognition that there are people who will be treated with these drugs. In this way it is clearly seen that it is demand that is determining the supply of ARVs.

Two conclusions can be drawn from this demand driven distribution system. Firstly, if there is no patient at any health facility who needs ARVs, then the government will neither procure these drugs nor distribute any to the health centres. This conclusion is related to the *'law of supply and demand'* (Singh, 1963: 64). According to the principle of supply and demand, supply is only possible if there is demand. In one interpretation of this law, if there is no demand, then there would not be any supply. Demand is, therefore, a necessary condition for supply. The second conclusion drawn from the Zambian ARVs demand driven mechanism is that it is demand that dictates the amount of ARVs to be distributed to each health facility. This demand is simply the number of HIV and AIDS patients at the facilities. Both conclusions are very plausible and in the following paragraphs I will attempt to give reasons why these are plausible positions.

The demand driven principle is justifiable on two major grounds. (1) This principle prevents wastage of national resources and it fits well into the concept of rationing of resources. Given the Zambian economic situation, it is justifiable that the amount of drugs supplied to health facilities be based on the demand. Zambia is rated seventeenth in the world among the poorest nations in the world[12], with about 80 per cent of its citizens living below the poverty line. The budgetary allocation towards social services such as education and health has been very poor. In the year 2005, the Ministry of Health was only allocated about 7.4 per cent of the national budget[13]. The Ministry of Health must, therefore, ensure that the resources available to their budget are rationed in a proper manner. The BMA (1993: 300) defines rationing as using existing resources as

[12] http://www.aneki.com/poorest.html.
[13] http://www.sarpn.org.za/document/doo1120/index.php.

effectively as possible. Rationing tries to prevent wastage of resources. Rationing is a method of allocation of resources that presupposes a rational plan for making decisions regarding who will receive what and why.

The '*no demand, no supply*' principle prevents medical resources such as drugs from being wasted. ARVs are very expensive especially for Zambia that usually obtains them by importing from foreign countries. If these drugs were bought and supplied to hospitals even when no one required them at that moment, they would not be used and later on they would expire. This translates into wastage of money that could have been used on other health related issues. Given these considerations, it makes sense to base the procurement and distribution of ARVs on the available demand.

Critics of the '*no demand, no supply*' principle would argue that it would be lack of long term planning if ARVs should only be procured and distributed when there is demand for them. This argument is that a distribution system that is entirely based on the actual demand will not provide for emergency cases. The argument seems to suggest that a fair distribution system is one that would also consider those who may need the drugs even before they fall sick. This argument holds that there should be *supply without demand* and thus demand is not a necessary condition for supply.

The supply-without-demand argument does not overturn the demand driven principle. I think that it is a misunderstanding of this principle to think that the demand driven principle would not account for emergency cases such as those falling sick today. The demand driven distribution does not necessarily mean that people must always be there in *actuality* to demand for the resource but also makes reference to *potential* demand. It is possible that drugs could be procured and supplied to health facilities without anyone in need of these drugs in actuality. This would still be demand driven because the distribution of these drugs will be based on the understanding that there is a potential demand for them. It is based on the likelihood that someone would get infected and may need the drugs any day. Therefore, drugs such as ARVs could still be bought in anticipation of the emergency demand for them.

However, the distribution based on potential demand is uneconomical, unsustainable, and can result in wastage of the drugs. This is because in a system that is dictated by potential demand, it would be very difficulty if not impossible to estimate the number of people who may need the drugs. While it might be easy to come up with estimations of

people who may need drugs such as Panadol (one of the widely used pain killers in Zambia), it is very complicated to estimate the potential demand for ARVs. The complication is that, to come up with the approximate number of people who may need the drugs, one would need first of all to estimate the number of HIV patients who would go for VCT, then estimate the number of those who would be eligible for ARVs and later estimate the number of them who would be willing to be put on ARVs. Because of these complexities, a distribution system that is based on potential demand is likely to result in a situation where the procured ARVs are more than enough for people who require them. Another scenario that is likely to occur is when fewer drugs are procured than the number of patients who require them. The system that is solely driven by potential demand does not fit in any of the rationing criteria. It is because of these difficulties with the *'potential demand driven'* system that the distribution based on *actual* demand is more plausible and economical.

Another strength of the demand driven distribution system is that it ignores the differences between persons and instead rests rationing decisions simply on the amount of resources available in relation to the number of people who may need such a resource. Shannon (1976: 528) calls this criterion of rationing health services 'Resource-Centred Criterion'. It avoids controversial comparisons between persons. As long as the patients have met the clinical conditions to be given these drugs, they are included on the list of those who demand for these drugs despite any other difference that may exist between these persons.

(2) The demand driven system of distributing ARVs can also be supported by the principle of utility. According to act-utilitarianism, an action is right only if it maximizes the good of all the parties that are affected by that action. One version of this theory, also known as 'classical utilitarianism,' was proposed by Jeremy Bentham (1748-1832), John Stewart Mill (1806-1973) and Henry Sidgwick. Subsequent versions of this theory are partly based on the formulations of Bentham and Mill. At this stage, I will not go into details of utilitarianism but it is important to say that all formulations of utilitarianism judge the rightness of an action by its consequences and thus utilitarianism is referred to as a *consequentialist theory.* According to utilitarianism, the rightness and wrongness of an action depends solely on the consequences of this action. A recent formulation of the principle of utility that could be found in writings of modern philosophers is :

> Actions are morally right if and only if they maximize the intrinsic good of all affected parties.

By 'intrinsic good' is meant that something is good for its own sake. In philosophy, there are different views of what is intrinsically good. For instance, some philosophers have regarded well-being as good for its own sake. Similarly, people who are infected with HIV and AIDS would regard their well-being as something that is intrinsically good. This well-being could be maximised if they had good health and ARVs could enhance this.

The utility principle takes into account the number of people that would benefit from a given action. Any distribution system that would yield more benefits to all those that are affected by it would be said to be fair according to this principle. Just like the resource-centred criterion for rationing medical resources, the utility principle also avoids controversial comparisons between persons and only focuses on the resource availability and on the number of people who are likely to benefit from it despite their differences.

The demand driven principle does have the best overall consequences for all affected (HIV positive and healthy) and is therefore in accordance with the principle of utility. This can be seen by the fact that resources would be rationalised in such a way that there is no wastage. This would discourage over-allocation of resources to one sector, e.g., health that may not even be used. For instance, if the number of people requiring these drugs is not known, then the government may over-estimate the amount of the drugs that are needed. These would expire and this translates into wastage of resources.

While the demand driven criteria for distribution ARVs is justifiable, it is not completely adequate to determine the amount of drugs to be distributed to each health facility. Other factors such as the availability of an adequate infrastructure, equipment and the necessary trained manpower to handle issues relating to ART will have to be considered alongside the demand at health facilities. The demand driven principle just goes as far as estimating the number of drugs to be distributed to each district. It does not help in answering the question of 'who' at each facility should be given preference to receive ARVs.

3.1.2 Free Distribution of ARVs

One of the biggest obstacles to accessing ARVs especially in developing countries has been the cost of ART (Helena, 1999). The problem of cost arises on two levels. The first

is the national level. Most of the developing countries do not manufacture ARVs locally; they procure ARVs by importing them from developed countries. Huge sums of money are spent on the procurement of these important drugs. Zambia as of 2006 does not have a company that manufactures ARVs locally. All the available ARVs in public health facilities are, therefore, either procured by the government or NGOs such as CIDRZ from international sources. Plans to have a local production of ARVs are underway, but for now there is none.[14] However, even after having the local production of these drugs, ARVs will still remain costly to the government because of the cost involved in the production of ARVs. It is because of these costs that many countries ask the patients who require ARVs to contribute towards their treatment.

The situation in Zambian for anyone to access ARVs in public health facilities before 13th June 2005 was that each one had to contribute about K40,000 per month towards his/her treatment. This was in accordance with the Zambian Health Policy that stipulates, 'Every able-bodied Zambian with an income should contribute to the cost of his or her health' (Ministry of Finance, 2005). However, the policy gives exemptions to children under the age of five and to adults over 65 for treatment of diseases such as TB, HIV/AIDS, STDs, cholera and dysentery, safe motherhood and family planning services, immunization, and treatment of chronic hypertension and diabetes. This is aimed at enhancing an equitable and appropriate delivery of health services to all Zambians. The amount of money that the patients were required to contribute towards their treatment made ARVs inaccessible to many poor Zambians. It should also be pointed out that ART entails more than just accessing the drugs. Patients on these drugs need good nutrition that goes with the treatment as otherwise they would experience side effects of ARVs which may lead to a quick death (National HIV/AIDS/STI/TB Council, 2004: 71).

One of the strengths of the current Zambian ARV distribution system is that ARVs are now provided free in public health facilities. According to a memo released by the Director General of CBoH dated 2nd August 2005, the government of the Republic of Zambia as of 13th June 2005 decided that all government health facilities in Zambia should provide free ART.[15] The decision by the government of Zambia to provide free

[14] Times of Zambia, Wednesday, February 23, 2005.
[15] This information was contained in the memo from Dr. B. U. Bulaya in his capacity as Director General-CBoH to Provincial Health Directors, Managing Director –UTH Executive Directors-General and Central Hospitals, District Directors of Health and the Director-CHAZ.

ARVs was made with a view of increasing access to ART for all Zambians who are chronically ill with AIDS. Two pressing issues that were taken into consideration were, firstly, the overwhelming poverty levels in the country and secondly, the high cost of accessing ART. This decision has been made into a policy and it has been implemented. All government health facilities, government non-health sector facilities such as the Ministry of Education and other line Ministries are providing free ARVs. Other organisations providing free ARVs are: NGO facilities accessing GRZ funding or development assistance, Church Association of Zambia (CHAZ) health facilities and other facilities that are providing ART to Zambians but are supported by cooperating government partners.

The provision of free ARVs to HIV patients is a great positive step in arresting the HIV and AIDS pandemic in Zambia. One of its positive aspects is that it will encourage more people to go for VCT, knowing that they will access free ART afterwards. This will increase the number of people who should access these drugs who could not have done so previously because they could not afford the cost, thus reducing the number of people dying from AIDS. This also means that patients that could not afford paying for their treatment can now use the money they used to contribute towards their treatment for other costs, for instance, this money could be used to improve on their nutrition status.

Two important notions that need to be clarified are that even if ARVs are provided free of charge, it does not necessarily follow that more people will have access to these drugs than before. Increasing access to ARVs requires more than just making them free. It is possible that despite having a policy for providing free ARVs, the number of people who are being put on the treatment is still low. In order for these drugs to be more accessible, it requires that more are procured in relation to the number of people who need them. It is possible to increase the number of people attending VCT, but once the drugs are not adequate to cater for all who are undergoing VCT and are eligible for ART, the number of people accessing ARVs will still remain low. From this study it has been observed that although most of the health facilities in Lusaka have an adequate supply of drugs for all the patients, it is not so in many of the health facilities outside Lusaka. Increasing access to the available ARVs also entails finding solutions to high level of stigma and traditional taboos associated with HIV and AIDS in several sectors of our society. Provision of free ARVs does not of itself mean that there will be a reduction in

the HIV/AIDS infection rates. In fact, chances are that there might be an increase in the number of people getting HIV and AIDS because ARVs have the potential to make someone look healthier even than those that are not infected. This may result in HIV patients (looking health) indulging themselves in unprotected sex with uninfected people and thus resulting in an increase in HIV and AIDS cases.

While acknowledging that provision of free ARVs is a positive stance in the Zambian distribution system, mere provision of free ARVs does not adequately answer the problem of how the amount of the available ARVs ought to be distributed fairly.

3.1.3 Equal Rights for Similar Cases

The Zambian health policies are based on the recognition that each citizen has a right of access to affordable health care of good quality. The Government of the Republic of Zambia believes that no one should be discriminated against in health care on the basis of factors such as gender, location or social standing in society (Ministry of Health, 1992: 28). This entails that whenever patients present themselves at health facilities with a need for treatment, for example, ART, they should be treated in a fair manner. To illustrate this, let us assume that two persons go to the health facility to request for ART and both of them are eligible for the treatment. If the drugs are enough for both of them, then they should both be given these drugs without any of them being discriminated against because of their sex. Both have a right to be treated. Let us assume that the drugs are only enough for one person. Again the policy is that whoever is given the treatment in preference to the other, the decision to do so must be other than sex, location or the social class because both of them have a right to good health care. One of the justifying factors employed in the Zambian health facilities in distributing ARVs when they are not enough for everyone is that if one comes for treatment earlier than the other, this person should receive these drugs.

It is widely accepted that each individual has rights to essential needs such as basic healthcare and education. These rights are derived from the fact that each human being has a right to life. A right could be understood as a stringent claim or entitlement that a person or a group makes on society in general or on a group or on an individual. I do agree with proponents of rights to basic needs that the right to life would not be protected if certain social and economic conditions that support this right are not protected. The

right to basic healthcare is thus understood as a claim that an individual or a group has for society to provide conditions that enhance health. Among these conditions are money, health care personnel, health care facilities, drugs and whatever else is necessary to ensure that individuals receive necessary health care (Purtilo, 1993: 29). The right of access to health care takes on several meanings. Firstly, it may just mean that no one should be prevented from obtaining health care and secondly, it may mean that each person has a right to obtain health services such as treatment to which every entitled person has an equal claim (Beauchamp and Childress, 1994: 355). It is because of the different meanings of right to access to health that it becomes very important to understand what is meant by having a right of access to affordable healthcare in the Zambian health policy.

What the health policy seems to suggest is that first of all every individual is entitled to health care, but it goes further to state that this health care should also be affordable and good. Affordability entails that the health services are not free but people have to contribute some money to receive them. This is based on the policy which states that 'every able-bodied Zambian with an income should contribute to the cost of his or her health' (Ministry of Health, 1992: 28). The policy of income contribution towards health makes exceptions to treatment of diseases such as AIDS and TB. Today AIDS drugs are provided free of charge. The policies, besides acknowledging the right to health that individuals have, also emphasize that drugs such as ARVs be distributed in an equitable way. Campbell (1997: 186) argues that to ensure equity in distribution of health services, we have to ensure that people in need of the service are treated as fair as possible by ignoring irrelevant differences between them but taking into account relevant differences. For example, it is inequitable to deny people ART on the basis of their tribe, because tribe is an irrelevant difference.

In theory the Zambian health policies emphasize equitable distribution of drugs and also emphasize the right of individuals for treatment. However, these policies are rather shallow in providing guidance on how equity could be achieved and how the rights to health of the individuals could be protected. Despite these shortcomings the Zambian health policies should be given credit for embracing these key concepts of fair drug distribution. All that is needed is to work on these concepts in such a way that they become specific and relevant to the distribution of drugs such as ARVs.

3.2 Weaknesses of the Zambian ARV Distribution Mechanism

Despite the system having a number of strengths, it has also shortcomings. This section explains the weaknesses that seem to me most relevant in the Zambian ARV distribution system.

3.2.1 No Written Policy

One of the weaknesses of the Zambian ARV distribution mechanism is that there is no specific written policy to guide the distribution. There is, however, *a way* in which these drugs are allocated to health facilities and to individual patients. The distribution of ARVs in Zambia is guided only by the general health policies, particularly the policy that says that essential drugs and medical supplies should be distributed in equitable manner to all health institutions and to patients (Ministry of Health, 1992: 47). There are a number of problems that are associated with this general health policy.

The Zambian health policy of distributing drugs is firstly, *too broad* or *too general.* The policy simply states that drugs should be distributed in an equitable way; it does not elaborate how each type of drugs could be distributed in an equitable way. The problem is that other drugs are hardly ever in short supply and thus the question of equity in distributing them is not so much of an issue. This is not true of ARVs which are in short supply and thus the health policy needs to clearly state how equitability could be ensured in the distribution of ARVs. This is not currently the case with the Zambian health policy.

Secondly it is *not quite clear* what is meant by equity in the policy. The Zambian health policy on distributing drugs only says that there should not be serious factors (such as sex, religion and colour of the skin) in distributing drugs. It does not, however, describe factors that are serious. Distributing other drugs may not require 'serious' factors, but ARVs distribution requires serious considerations. Other drugs are readily found and are less costly but ARVs are among the scarcest drugs in Zambia today. They are not only scarce but also costly because they are procured from abroad. The available ARVs in most clinics particularly rural health facilities are not enough for the number of patients that require them. The moral problem facing health service providers in health centres where there is scarcity of ART is how they could pick one patient over the other to be put on ART. The current distribution policy in Zambia cannot provide solutions to this dilemma.

It is because of the lack of the written policy on ARV distribution and the broadness of the existing national health policy that the ARV distribution mechanism in Zambia is very unclear. For instance, ARVs are said to be distributed proportionately to the number of patients at the facilities, yet there are other factors that also determine ARV distribution. These include infrastructure, among other things. It should be said however, that the distribution of ARVs from the CBoH to DHMT is quite fair in that each district is given an equal opportunity to request for ARVs proportionate to the population of ARV eligible patients in health facilities of each district. What is unfair is the distribution of these drugs to each eligible patient at the health facility, which is compounded by the lack of policy. Due to lack of a clear ARV distribution policy, it subjects the health service providers to having to make biased decisions when they are faced with this moral dilemma. For example, what happens if a health worker is presented with a situation where he has ARVs for only one person, and two eligible patients for ARVs come at the same time to request for them? Let us call these persons *X* and *Y*. Both have satisfied the CD4 count and WHO stage necessary to be put on ART, but person *Y* is also a friend of the health care provider. It is very likely that *Y* would be put on ART rather than *X*. Person *X* will be disadvantaged firstly, because, he is not a friend of the health provider and secondly because there is no policy or guidelines for such a situation. The current health distribution policy acknowledges that each individual has a right to health care and treatment but it is silent, for instance, which of two patients should be treated and which one should not if both have a right to this treatment but there are only enough drugs for one of them.

The only guidelines available (documented) to health worker providers with regards to how they should distribute ARVs to patients are clinical conditions. Patients who have undergone clinical screening and are eligible for ART are supposed to be given the required drugs. However, this is not always the case in reality because the drugs required are most of the time not enough for all people who require them. This situation is more pronounced in predominantly rural health facilities than in urban facilities. A moral decision, therefore, has to be made on who to treat and who not to treat. It has been explained that when health providers face this dilemma, they adopt what has been called by McConnell (1997: 223) '*first-come-first-served*' principle. This principle works in such a way that when the required resources are outstripped by the number of people who

need them, then these people will receive the resources in relation to the time they present themselves for that service. If for instance, person *X* went for the resource earlier that person *Y*, then *X* receives that resource and not *Y* (assuming that the resource in question is enough for one person only). In the next section, I will give reasons why I find this principle inadequate for choosing who should receive ARVs and who should not.

The current ARV distribution mechanism does not look at moral aspects that ought to be considered when scarce resources such as ARVs are distributed. It emphasizes demand (quantity) in terms of the number of people who require ARVs and pays less emphasis on the *quality* of that demand. While applauding the system driven by demand as economical and rational, it should not just be the number of patients who need the drugs that should determine the distribution of ARVs but that any fair distribution system should also look at differences existing between individuals who need the drugs. In this case, I think that a fair distribution mechanism should also pay attention to the marginalized individuals in society. These include the children, the women, orphans, people in remote parts of the country and the disabled HIV/AIDS patients. To clarify my point, imagine a situation where the government procures drugs and distributes them to health facilities based on the actual number of people who presented themselves at the facilities. This would leave out the people who, because of their situation did not present themselves to the health facility to demand for the drugs. These groups may not be able to walk to the health facility and, even if they did, they may not do so in time. The current ARV distribution mechanism does not take into account the plight of the disabled people. This can be substantiated by the cry made by the Zambia Disability HIV/AIDS Human Rights Programme (ZAMDHARP) president in the Times of Zambia (Wednesday, 23rd February 2005: 5). According to him:

> ...[P]ersons with disabilities throughout Zambia hardly access VCT, ART and are, therefore, unaware of their HIV/AIDS status. This group is also excluded from HIV/AIDS facilities such as hospices and home-based care as these persons with disabilities are usually referred to the Ministry of Community Development and Social Services that does not have these facilities.

Another weakness of the Zambian ARV distribution system is its adherence to the utility principle. The primary concern of utilitarianism is the overall benefit of those affected by an action (Purtilo, 1993: 11). While this is a good goal, however,

maximizing the benefits may have unintended negative consequences on the minority. The utilitarian principle can, under certain circumstances, justify the sidelining of the marginalized groups in the distribution of ARVs. The criticism advanced against the utility principle is that it fails to take the distinctiveness of persons seriously. It is argued by critics such as Shannon (1976: 528) that the utility principle is faulty by not taking into consideration the morally relevant differences that exist between individuals. There is a morally relevant difference between the able individuals and the disabled and thus to subject them to the same criteria of receiving ARVs is unfair. A fair distribution mechanism is therefore, one that also recognizes these differences between individuals.

3.2.2 The First-Come-First-Served Principle

This is one of the criteria that are employed for distributing scarce resources. It is also one of the principles of distributive justice.[16] How this is employed in Zambian health facilities when administering ARVs to patients has been explained in Section 2.2 of Chapter 2. At this stage, I will give four reasons why this principle is *inadequate* for distributing ARVs to people in the Zambian set up.

(i) The first problem with the Zambian ARV distribution system based on the first-come-first-served principle is that this criterion is not enshrined in the country's health policies. Though it is not in the health policies, this criterion is practiced by some health facilities when they are faced with the moral dilemma of choosing one patient to be put on ART over the other. The fact that this criterion is not in the health policies leaves much room for arbitrary decisions on how to employ this criterion. This also means that there is no uniform way of employing this criterion. As evidenced from this study, some health clinics, contrary to the initial information obtained from CBoH, still employ the waiting lists while some of them do not. In some of the rural health facilities visited, it was discovered that the list of eligible ARV patient was used as a waiting list. The patients who appear on top of the list were given priority to those who are at the bottom. This was, however, not so with Lusaka health facilities visited. Waiting lists were not used in Lusaka health facilities visited during this study. This could be explained by the

[16] For more details on the first-come-first served principle see McConnell (1997: 225).

fact that at the moment almost all health facilities in Lusaka have enough stocks of drugs for those who need them.

(ii) The *First-Come-First-Served* criterion of distributing resources works well in situations where the population that needs these resources is homogenous. Homogeneity in this case would include the following, viz., that people in need are living at similar distances from the health facility, have similar energy to travel to the health facility, are of similar age and have also similar physical abilities. This is not the case in Zambia. There is inequitable access to basic health services in Zambia between provinces and between urban and rural areas. In urban areas, 99 per cent of households are within 5 kilometers of a health facility compared to 50 per cent in rural areas.[17] The spread of ARV distribution centres in Zambia is concentrated in urban centres and in towns. For example, out of 74 ART centres as of 1st May 2005 in Zambia, about three quarters were located in urban areas and in provincial headquarters that are typically urban. The justification for this is that these are areas that are equipped with the necessary infrastructure and equipment for ART. Having a concentration of ART centres in urban areas on the ground that the urban health facilities have a better infrastructure than those in rural areas, is not a good justification at all because rural health facilities could also be well equipped to handle ART. What is needed is improvement in all the health facilities' infrastructure, in urban as well as in rural.

(iii) In view of the diverse distances that each patient has to go to obtain drugs from the health facility, the first-come-first-served principle is disadvantageous to patients that stay far from the health facility compared to those who stay near the health facility. For example, in Chingola district, which is urban, a health centre called Kabundi East clinic serves about four settlements, namely, Kabundi, Soweto, Kapisha and Kamitate. Kubundi is the nearest to the clinic while Kamitate is the furthest. Patients living in Kabundi will spend an average of 20 minutes walking to the clinic. On the other hand people from Kamitate spend about two to three hours walking to this facility. The system of first come first served will favour those who live in Kabundi clinic over those that come from Kamitate. Extreme cases are found in rural provinces like the Western province. Some districts in this province do not have health facilities distributing ARVs. People from Shang'ombo district have to travel to other districts which have these

[17] http://www.access2insulin.org/html/zambia_s_health_system.html .

facilities. They have to spend days travelling to ART centres of other districts. Patients living in districts with ART centres are thus favoured over those living in districts without these facilities if the first come first served principle is used. Similarly, patients who have quicker means of finding themselves at the health facility, for instance, those with cars, will be more favoured than those who need to walk to the health facility. In the same vain, people who are disabled will be disadvantaged by the first-come-first-served criterion. For instance, an HIV patient who walks on crutches and stays very far from the ART may never find himself at this facility and thus may never be served. HIV patients who are incapable of finding a means to present themselves at the health facility where the needed drugs are being distributed will also not be served by use of this criterion. For example, the young children who need adults to take them to the health facility may be disadvantaged by this approach.

(iv) Another problem of the first-come-first-served criterion is this: Where waiting lists are used; only the people who appear first on the list will most likely be having access to ARVs. Those at the bottom of the list may never access the drugs unless the supply increases or some of the people who appear on top of the list die. Worse still, some patients may never be put on the waiting lists as long as the supply of ARVs remains constant or goes down.

Because of these difficulties and given also the fact that the population that need the drugs is not homogenous, the first come first served criterion of distributing ARVs is very inadequate in the Zambian situation.

CHAPTER 4: TOWARDS AN IMROVED ZAMBIAN ARV DISTRIBUTION MECHANISM

The aim of this chapter is to make suggestions on how the current distribution system could be improved. In order to do so, I have addressed some of the weaknesses identified in the previous chapter and I have also built on some of the strengths from the current Zambian ARVs distribution mechanism. This chapter, therefore, identifies and evaluates several principles of distribution. It gives reasons for finding some of the principles for distributing health resources inadequate, particularly in the Zambian situation. Some principles of distribution that seem to me relevant to the distribution of ARVs in Zambia have further been discussed. Some of the approaches that I have found to be irrelevant distributing ARVs in Zambia are those that place predominant emphasis on the following requirements:

- Equal distribution to everyone
- That distribution should be in accordance with the free market and the patient's ability to pay
- Distribution should be based on the social worth of a person

4.1 The Concept of Distributive Justice

In order to systematically evaluate some of the principles and theories regarding the distribution or allocation of medical resources, there is need to understand the concept of justice. There are many types of justice. Traditionally, justice has been categorized into three classes, namely retributive, commutative and distributive justice. Retributive justice deals, for instance, with fairness in punishing criminals. Proponents of retributive justice point out that the retribution should be proportional to the crime, and that minor crimes should have mild punishments while major crimes should have harsh punishment. It is assumed in this kind of justice that punishments are justified on the grounds that the criminal has created an imbalance in the social order that must be addressed by action against the criminal. Proponents of retributive justice emphasise that criminals receive fair punishment according to the crime committed. For instance, a person who has murdered someone deserves a more harsh punishment than someone who has stolen some

money from another person.

Commutative justice deals with fairness in all agreements and exchanges between individuals or private social groups. It demands respect for the equal human dignity of all persons in economic transactions, contracts, or promises. For example, workers should be paid proportionately to their work input. The workers owe their employers diligent work in exchange for their wages. Employers are therefore, obligated to pay their employees fair wages in exchange for the work done and establishing conditions and patterns of work that are proportionate to their input.

The object of distributive justice is to distribute resources in an equitable manner. It takes into consideration the different conditions of the people in need of the resources. For instance, if medical resources such as drugs are scarce, distributive justice could demand an equitable distribution of these resources. It is this kind of justice that is significant for the allocation of healthcare benefits and that has been adopted in this study in evaluating the Zambian ARV distribution system.

Beauchamp and Childress (1994: 327) define distributive justice as referring to 'fair, equitable and appropriate distribution in society determined by justified norms that structure the terms of social cooperation'. Included in distributive justice are policies that guide how benefits and resources are to be shared. What makes distributive justice different from other types of justice is that it is concerned with fair allocation of resources among diverse members of the community. It takes into account the total amount of goods to be distributed, the distribution procedure and the pattern of distribution

Problems of distributive justice arise under conditions of scarcity and competition. This is because societies have a limited amount of wealth and resources (Beauchamp and Childress, 1994: 327). To illustrate this, if, for instance, natural resources such as trees were non-diminishing and cutting them would not have any consequences on human beings as well as the natural environment, then there would be no need to restrict cutting them down. The restriction is necessary because this resource would not be available to other beings that may need it if it was allowed to be cut down unrestrictively. Similarly, if the amount of medical drugs was abundant for everyone in need, there would not be any need of a criterion for selecting only some from a pool of those who need the drugs. Seen from the above illustrations, it is clear that the scarcity of resources brings in a question of how those resources or benefits ought to be distributed. The common answer is that

scarce resources should be distributed in a way that ensures that each and every individual receives a fair share. This, however, is far from being clear because it leaves open the question of what constitutes a fair share.

Several ethical theories and philosophical principles of distributive justice have been advanced to show how resources or benefits ought to be distributed in a fair manner. Many if not all of the distribution mechanisms in the world today, whether knowingly or unknowingly, embrace one or more of the ethical theories or principles of distribution and the Zambian ARV distribution system is not an exception to this. If we consider how each one of these principles can be applied to allocation of scarce resources, it can be seen that some of these principles are fairer than others. In what follows, I will first consider some principles of distribution that I consider irrelevant to the distribution of ARVs in Zambia, and then I will evaluate some principles that I consider relevant to distributing ARVs in Zambia.

4.2 Inadequate Principles of Distribution

This section evaluates some of the principles that I regard as *inadequate* for the distribution of ARVs in Zambia. These principles would be of little or no use if we applied them in distributing ARVs in Zambia. This is not to say that they could not be relevant in distributing medical resources in other countries. For instance, the principle of the ability to pay could be applied in distributing resources in countries that are more developed. This is because many people in those countries can afford paying for their treatment.

4.2.1 To Each Person an Equal Share

Many people argue that in distributing scarce medical resources, primacy should be given to respecting the equality of individuals[18]. The basis for this line of thought is that every individual is equal and has equal rights to receive healthcare.[19] This simply means that people who are in similar circumstances must be treated equally, without favouring anyone. This principle is regarded as formal because it states no particular respect in

[18] This notion of equality can be traced back to the German philosopher, Emmanuel Kant (1724-1804). According to Kant, every person has intrinsic worth and dignity. This worth of every person is inherent in the fact that we are persons.

[19] A right in this context refers to legal entitlement of every individual to health care. The Zambia constitution specifies that each human being is entitled to good health that includes treatment and care. See Part III, Article 11, of the 1996 Zambian Constitution.

which equals ought to be treated equally and it does not also provide a criterion for determining equality.

Treating each individual according to the principle of equality can mean two different things: Firstly, it can mean that everyone should get precisely the same share as everyone else. *The second meaning would be that everyone should have an equal chance of getting* the required resource. I shall now consider these meanings in turn.

(1) The first meaning of this principle, that everyone should be treated according to strict equality, raises a number of problems when one attempts to apply it to distributing scarce resources. The first problem is that it can only be applied to limited situations. This could be in situations where the health needs of the people are the same and their conditions are also the same. But people's needs for healthcare and their conditions obviously vary greatly. Even if two people need ARVs at the same time, their conditions may be different and might dictate treating them unequally. For instance, if two people want ARVs from a health facility at the same time, but their condition is such that one of them is able but the other is disabled, then it would be unfair to treat the two equally. This was also pointed out by Aristotle who said 'Equals must be treated equally but unequals must be treated unequally' (Beauchamp and Childress, 1994: 328). Similarly it would be unfair to treat children and adults equally in providing them with ARVs. Fisher and Gormally (2001: 109) point out that the general requirement that one should treat people equally leaves questions unanswered which have to be answered if we are to have a reasonable criterion for allocating scarce medical resources. In addition, the principle that each one should get an equal share, provided they are equal, is very unclear. It is unclear in that it does not elaborate in what respects two different people could be considered as equal or unequal. It does not give the meaning of equality. It also does not specify the conditions that people should satisfy in order to be said to be equal or unequal.

Furthermore, the principle of strict equality fails to acknowledge the relevant differences that exist between individuals or groups. It just says that people should be given equal shares of the required resource. According to this view, a system designed to provide medical resources such as ARVs to a group or to individuals (HIV and AIDS patients) would be said to be unjust if it does not provide equal shares to every member of that class. In other words, according to this principle, if the members of the class cannot all be given the resources equally, then none of them should be given. The problem with

this view is that this principle would be of no help in allocating scarce resources when the number of people is more than the available resources. If none of the needy is provided with the resources such ARVs just because the available drugs are not enough for everyone, then it could result in the loss of some people's lives which could otherwise have been saved. This is clearly unethical. In many developing countries, the available medical drugs are not always adequate to cover everyone in need of these drugs. For instance, ARVs are in short supply in some health centres, particularly in rural health facilities of Zambia, and thus the ethical position to take is to ensure that at least some of the people who require these drugs are served in a fair way. However, it would be immoral to deny access of these drugs to everyone who requires them on the pretext of preserving equality. According to the principle of strict equality, if the drugs are not enough for all who need them, the fair position to take would be not to distribute them to any of the needy but to wait until the drugs are enough for everyone. Indeed that implies that everyone is treated strictly equally. But it is a fatal position to take as the scarce drugs such as ARVs may never be in adequate supply in some health facilities. Applying this principle would therefore translate into waiting indefinitely. This will not be an appropriate way of allocating ARVs in our Zambian set up. An adequate and appropriate criterion of allocating ARVs will be one that ensures that even if the drugs are not enough for all who require them, at least some among the needy can have access to the drugs. However, the selection of who should access them and who should not ought to be done in a fair way.

Though inadequate in the distribution of ARVs in Zambia, distribution according to equality does rightly disallow preference on the basis of race, religion, gender, marital status, intelligence, quality of life, education, beliefs, social status or social contribution.

(2) The second meaning of 'to each an equal share' requirement is that everyone should have an equal chance of getting the required resource. This is thought to be satisfied either by selection through lottery or by the first-come-first-served system. According to this interpretation of the equality principle, when the available resource are not enough for all people requiring the resource, then the just position to take is to subject these people to random selection (Zucker, 1992: 177). I find this second interpretation of the equality principle more plausible, though with some reservations. The form of randomness or chance in selecting individuals to receive the resource could either be the

first-come-first-served criterion or the lottery method. The first-come-first served criterion and its weaknesses have already be discussed in the previous chapter. What should be mentioned at this point is that my argument against the first-come-first-served criterion has so far been that it is inadequate as a single basis for distributing ARVs in Zambia. It is even inadequate if it is used as a first consideration in allocation of medical resources. This is not, however, to say that it could never be applied in distribution of resources. There are circumstances that may suggest the use of this principle. My own view is that random selection should be considered only after other factors such as the needs of each individual patient have been considered.

The lottery criterion is yet another way of ensuring random selection of individuals to receive treatment in times of scarcity. This may involve a form of a draw where patients who require the drugs may be given random numbers to choose from. Only those who pick luck numbers will be treated. This kind of random selection is based on chance. For example, if ten patients go to a certain health facility to seek for ART, but the available drugs are only enough for five of them, the health worker may subject these patients to a form of a draw in order to select who to give the treatment to. The health worker or anyone administering ART may, for instance, ask each of the patients to draw a number out of a box containing ten numbers of which five are luck numbers. Only the patients who pick luck numbers would be given treatment. As long as the draw is done openly and every one of the patients agrees to it, the selection is said to be fair. In this process of selection, there is no consideration of other factors such as the values and needs of each of the patients. Each is given an equal chance to be treated.

The criticism that Childress (1982) levelled against the lottery criterion is that it is irrational because it is based on gambling. His argument is that the lottery method, by subjecting the patients to gambling, does not pay attention to human values. The argument advanced against selection through lottery is that human beings are rational beings and as such they should be able to use their reasoning in selecting who should receive treatment and who should not. Rather than leaving the selection of patients to receive treatment to pure chance, health workers or selectors should pay attention to the values and needs of each patient. However, this argument against the lottery principle is not convincing. The lottery criterion is still rational provided other factors have been considered. For instance, if factors such as the *needs* and *conditions* of the patients who

need treatment have been considered and yet it still is the case that the available drugs are just enough for only some of them then it becomes justifiable to subject these patients with equal need to some form of a lottery. I think that the first step in selecting patients should be to apply firstly those principles that make reference to the needs of each individual as suggested in section 4.4 of this chapter.

4.2.2 Distribution In Accordance With the Free Market Principle

This approach is advocated by libertarians such as Robert Nozick and John Stuart Mill. Libertarians regard individual human beings as autonomous entities who ultimately should make their own decisions of what is best for them. Libertarians recognize that there is great variety of human beings. Not one individual is the same as the other. Individuals differ in capacities and potentialities and thus they should be treated differently. However, treating individuals differently, as libertarians argue, does not mean treating them unequally. Their argument is that by treating each and every individual differently, equality is assumed. Hayek (1960: 128) argues that 'from the fact that people are very different it follows that, if we treat them equally, the result must be inequality in their actual position and the only way to place them in an equal position would be to treat them differently.'

Based on the above assumptions, libertarians go on to argue that a justifiable system of allocating scarce medical resources is one that is dictated by the free market. A free market approach leaves it to the health providers and patients to make their own bargains regarding the apportioning of healthcare. In this regard health providers may apply any standard they wish to adopt, for instance, profit maximization. It will then be up to an individual patient to accept the standards set up by the health provider. Patients should decide for themselves what proportions of their income they wish to invest in healthcare. Those who cannot afford to pay should rely on charity of one kind or the other, according to Nozick and other libertarians, because health care should not be regarded as a public good, but as private. As such, the distribution of healthcare services and goods is best left to the market place which operates on the material principle of ability to pay either directly or indirectly through insurance. It is immoral, according to this view, for any government to tax people and use the money obtained to underwrite state support of the indigent through welfare payments. This is seen as an unjust distribution of private property through immoral expropriation of individuals' financial

resources through taxation. Robert Nozick, who refers to his theory of justice as 'entitlement theory', believes that the government action is justified if and only if it protects the rights or entitlements of citizens to private property. All libertarians argue that there are no welfare rights and therefore no rights to health care (Nozick, 1974).

In relation to the Zambian situation with regards to the distribution of ARVs, libertarians would argue from the free market point of view that ARVs should not be publicly funded through taxes and later freely distributed to the needy. A just distribution mechanism would be seen as a situation where the government leaves the procurement and distribution of ARVs to private companies. These privately owned companies should be the ones to fix the prices for these drugs and it would be up to individual patients to either pay or not to pay for these drugs. If they cannot afford to pay, then they should rely on ARVs donated through charity by NGOs such as CIDRZ. In this system, nobody's personal property would be coercively extracted by the state to benefit others. Society, according to this view, is not obliged to provide funds to cover health care.

The free market principle is *ethically* inadequate in the distribution of ARVs in Zambia. The main defect with this view is that some people will be refused treatment because of their inability to pay and some will be given preference over others on the basis of their greater ability to pay. The poor in this case will be excluded from treatment. This would be catastrophic to many Zambians who live below the poverty line and cannot afford to pay for their treatment. The BMA (1993: 309) rightly noted that the allocation of resources based on the ability to pay can lead to over-treatment at one end of the scale - for those who can afford to pay - and almost complete failure to treat at the other end for those who cannot afford to pay. Advocates of the free market principle would argue at this point that the poor will be taken care of through charity. The problem with this thinking is that there is no guarantee that the wealthy, be it individuals, organizations or countries, will always donate some of their wealth to the poor. They are not obliged to do so. Even if one agrees with the view that the poor will receive assistance out of the donations made through charity by the rich, the amount of resources received through charity may not be adequate for the poor majority. Furthermore, the time that these resources would reach the poor would be unpredictable. Many of the poor would have died by the time the ARVs are made available to them.

Another shortcoming with the free market criterion is treating of healthcare as a private good. I think that healthcare, just like educational services, are a social good that should be treated as public. What makes it social and public are the benefits and effects that it has on the people and the nation as a whole. Starting from the family, if one member of the family is sick, his/her sickness will also have an effect on the other members of the family. Similarly, if a number of people are infected in the country, their sickness will have effects on the entire nation. Having said this, if infected people are denied treatment on the pretext that they are unable to pay for the drugs, they will in the short or long run affect even those who are able to pay for the drugs. These effects may include the inability of the infected to contribute to national development, thereby contributing to the country's poverty. For instance, if a person dies earlier than he/she would have died had she/he not been denied ART because of his/her failure to pay for it, several people like the relatives and friends would be affected. He/she would also be denied his/her contribution to the nation's productivity.

Fisher and Gormally (2001: 113) raise another serious criticism against the free market approach. They hold that it is very damaging to the practice of health care if doctors and patients relate purely as suppliers and consumers with health workers vetting their patients on the basis of income or insurance policies. The patients, on the other hand, will be viewing the health professionals as being there only to exploit them financially. The driving force in this kind of a set up will be profit maximization and as such only people who are able to pay for their treatment will be treated with respect. To a large extent, this approach would influence the health workers to be devoid of commitment to equal care and respect for the sanctity of life. It is highly likely that in this approach the poor and the disadvantaged will not be cared for in the same way as the rich.

Because of the above difficulties, the free market approach is very inadequate in the distribution of ARVs in Zambia. However, the libertarians' view that a just system should be able to recognize that each individual is different and unique from each other and that the differences should be encouraged and respected is plausible. However, despite these differences, there are certain things that human beings will hold in common. These are necessities of life such as health and freedom. It is generally accepted that people are entitled to basic needs. The government is obliged to provide people with their

basic needs. It is from the understanding that health is one of the basic needs of people that it becomes necessary to make health care a public rather than a private good. Even if one argues that health care is not a public good, it will still be justifiable to publicly fund the distribution of ARVs in Zambia because of their direct benefit to the HIV and AIDS patients and indirectly to the nation as a whole. It should be emphasized that by publicly funding the distribution of ARVs, it does not follow that individuals cannot privately access these drugs from private sources if they choose to. Each individual is at liberty to acquire ARVs, for instance, from private clinics, provided he/she has the ability to pay.

4.2.3 Distribution According to the Social Worth of a Person

Another criterion of distributing scarce medical resources that is inadequate for distributing ARVs in Zambia is the criterion that puts emphasis on the social value of a person who is in need of a resource. This criterion of distribution holds that when you are faced with a dilemma in selecting who should receive the resource and who should not, reference should be made to the social worth of a person. People who are more socially worthy than others are to be preferred to people who rely on society for help.

The social value of persons is usually determined by the past and present contribution of persons to society. Distribution according to the social worth of a person stresses that preference should be given to individuals or to that section of the community that have either in the past or presently made the greatest contribution to the community. Those individuals who always rely on society for help are the greatest burden to society and should thus be given the least priority. These include the poor, the old, the disabled and the criminals who are serving their sentences in prisons. Under this criterion, reference is made to a person's past and present contributions to his/her community. Hence, when ARVs are scarce and the available ones can only cater for a few, preference should be given to people like leaders, those that pay more taxes or those that give to charity over criminals, unemployed people, welfare dependents and those that exhibit anti-social behaviour (Campbell, 1997: 185).

While social contribution is undoubtedly a relevant consideration when distributing certain benefits such as honours and rewards to people who have socially or otherwise contributed to the community, it cannot be morally justified to apply it to the distribution of medical resources. This is because health is one of the common needs of

all people and thus healthcare should not be compared to other social issues such as sport. In addition social reward is usually based on subjective human judgment. For instance, to say that one individual, say, a footballer, has contributed more to society than a boxer, is to make a judgment based on our subjectivity. Campbell (1997: 185) rightly points out that 'health is too vital an aspect of individual well-being for it to be dependent upon such prejudiced human judgment'. To deny someone ARVs on the pretext that he/she is of lower societal value than the other is to discriminate against someone and thus to depart from the norms that should guide the provision of health care, i.e., that each human being has a right to equal treatment. The children and the disabled will, therefore, be denied access to ARVs if we adopted this principle.

Another difficulty with the social worth of a person principle is that it does not recognize that the lack of contribution to society could very often be attributed to factors such as under-endowment in natural talents, poverty, illiteracy, lack of socialization and genetic defects. HIV patients from these groups have their situations made worse by the disease, and to deny them access to ART is to compound their disadvantage.

4.3 Adequate Principles of Distribution

As noted, there are a number of distributive principles that could be applied to the allocation of medical resources. There is no single principle that may be adequate for the distribution of any scarce medical resource. However, it needs to be mentioned that some of the principles of distribution are more relevant to the distribution of certain scarce medical resources in given situations than others. Usually distributing medical resources will require a combination of more than one principle. This section evaluates some of the principles that seem to me adequate to the distribution of ARVs in Zambia. These are *Distribution according to needs* and *Distribution according to Merit.*

4.3.1 Distribution According to Needs

The major defect with the principles of distribution analyzed in the previous sections is that they pay insufficient attention to the fact that patients who require the scarce drug will always have different needs. This simply means that though people may require ARVs at the same time, they may require these drugs differently. To some it might be a matter of life and death to be put on ARVs, meaning that their condition requires that

they be put on treatment immediately or earlier than others. In this case, it is the condition of the patient that determines the need for treatment. If it could be established that a patients' condition is such that if they are not put on treatment, they will be incapacitated, then they have a greater need than someone who requires the drug but his condition is such that even if he is not put on ART, he/she will not be incapacitated.

The term 'need' has a variety of meanings. However, the meaning of 'need' relevant in this paper is requiring something which is in your best interest. In other words, it is a requirement for your existence. Need in this case is used interchangeably with requirement. Needs also should be differentiated from wants. For instance, someone people who are HIV positive may want ARVs, even when they are not eligible for them. They do not need the drugs but simply want them.

Different individuals or groups of people will have different needs for the same resource. The principle of need requires that when one is faced with a dilemma in allocating scarce resources to individuals or to groups, the reasonable criterion would be to ensure that people with the same needs should get equal shares and that those with greater needs get greater shares or get priority in receiving the scarce resource (Fisher and Gormally, 2001: 115). Let us assume that two individuals named Peter and John to go a public health facility to seek for ARVs. Their conditions are that besides both of them being eligible for ART, their economic status is that Peter comes from a high social class and can afford paying for the treatment even from private clinics, while John cannot afford it and he entirely depends on the ARVs provided freely by the governmental health facilities. John has a greater need for ART from public facilities than Peter and thus it would be fair to give ART to John. Similarly, if two people who require ART and one of them is a child, then it would be justifiable and fair to treat the child rather than the adult on grounds that the child, because of his/her condition, has greater need for treatment at that facility. These conditions include the fact that the child may not be able to travel greater distance and find another health facility distributing ARVs. It is justifiable that if a decision has to be made between two HIV patients in different conditions, priority should be given to the disadvantaged one so that where you have a rich and a poor patient, the poor should receive ART; and where you have a pregnant woman and a not pregnant woman, the pregnant woman should receive the treatment. Between the able person and the disabled the disabled should receive ART.

As the examples given above indicate, the least advantaged people have a greater need than the advantaged. These differences in need between individuals who require the same resource are arising because of different conditions these people are in. My argument is that a fair distribution system will be one that identifies needs with the conditions that people are in. Priority should be given to the disadvantaged in receiving treatment over the advantaged because they are in greater need. This is not, however, to say that the need principle alone is adequate to a fair distribution of ARVs. The point is that in order to select a patient to receive treatment over another in a fair way in situations where there is scarcity of drugs, we need first of all to recognise the needs of the patients who require the drugs. This must be the starting point in the selection process. If the people who have a greater need for treatment are selected and the drugs available are now enough for each of them, then the principle of need in itself will be said to be adequate. It is not clear, however, that the need principle alone would be helpful in situations where two people who require ART have equal need. For instance, if two patients who require the drugs are both disabled and poor and yet the available drugs are only enough for one patient, this would call for the application of another principle of distribution. The second principle that should be applied is the 'future contribution' principle. A detailed analysis of this principle will be given in the next section.

I find the need principle superior to the free market approach, equality, and the social worth principle. Distribution according to the free market principle seems at first sight sound by asserting that each individual is unique and has a variety of differences from others. Individuals have different capacities, abilities and endowments. The free market principle does not, however, go on to point out that despite uniqueness, individuals also have different needs. It, therefore, does not recognize need as a basis for distribution, but rather emphasises individual choice as a basis. It fails to recognize that some people do not have any choice at all because of their conditions. The free market principle also fails because of its insistence on the ability to pay. This excludes a number of disadvantaged people from receiving treatment. The equality principle rightly stresses that each individual should receive equal treatment because it is his/her entitlement. It, however, fails to acknowledge that people are different because of their different needs. It does also not outline which differences among the people who are in need are important. Practically, this principle cannot be helpful to the Zambian situation. Distribution

according to social worth also fails because it falsely assumes that each individual is endowed with the same ability to contribute to society and as such it denies treatment to those who cannot contribute. Distribution according to need takes into account all these weaknesses and is thus superior.

4.3.2 Distribution According to Merit

Yet another criterion that has been proposed for healthcare allocation is the future contribution principle. Some authors like Campbell (1997: 184) calls this principle the 'merit' principle. The principle according to future contribution is a variant of the past and present contribution criterion. Rather than focusing on the past and present contribution to society, this principle would involve allocation of treatment according to the probable future contributions that prospective patients would be expected to make to society. This principle is defended on grounds that state-paid medical care is an investment which expects and deserves repayment. The basis for treating someone according to this approach is that he/she will contribute more to society. Because of their potential to contribute more to society, some people deserve a certain preference in the healthcare and treatment (BMA 1993: 311).

The principle holds that when there is scarcity of medical resources, priority should be given those who are likely to contribute more to society. For instance, two people are in need of ART, one of whom is a mother of three children and three dependents. The other who requires the drugs is a mother of only one child with no dependents. The available ARVs at the health facility are only enough for one person. The principle according to future contribution would say that a mother with more children and more dependents should be given the drugs. The reasoning is that she has more responsibilities than the other woman. She would also be said to be contributing more to society by raising these children who would make a greater contribution to society.

This principle is relevant to the distribution of ARVs in Zambia. The reason is that to date, no cure has been found for HIV and AIDS. ARVs are not a cure but are essential drugs that sustain the HIV and AIDS patients and allow them to live longer. They improve the human immune system and help the infected to continue with normal duties and, in this way to contribute to both personal and national development. The distribution of ARVs is to some extent based on the assumption of patients' future contribution to

society. It needs to be established before a patient is put on ART that there is a high chance of survival of that patient. With our weak economy, it is justifiable to distribute ARVs mainly to those patients who have a high chance of survival and to those whose length of stay after they have been put on treatment is reasonably long. It should, however, be stressed that according to this principle, just surviving long after a patient has been put on treatment is not a key for the patient to receive treatment. The key requirement is that a patient who needs the treatment is likely to contribute to society. For instance, it might be justifiable to put an HIV/AIDS doctor on ART even if it is, for instance, established that he will only survive for one more month if it has also been established that in this month he might discover a cure for AIDS. Let us assume a situation where the available ARVs are only enough for one person, yet there are two people who need them. These two people are the doctor described above and another man. The condition of the other man is that if he is put on ART, he will live for 10 more years. It is also established that this man will, after he is put on ART, contribute less or nothing beneficial to society. For instance, if it is ascertained that he will in those years continue with womanising and abusing children, then it would be justifiable to put the doctor on ART rather than the other man. These are some hard choices but they are nevertheless unavoidable.

The future contribution criterion is in practice very difficulty to apply in that it is very difficult to predict someone's future contributions to society. However, if predictable future contributions of the patients who need the scarce ARVs could be established, this criterion would be very helpful to the distribution of ARVs in Zambia. Even with this difficulty pointed out, the future contribution approach could still be very useful to guide the distribution of ARVs. This could be done by making an assumption that patients with higher chances of survival and living longer after they are put on ART are more likely to contribute more to society. In times of scarcity, these should be given priority over those who have lower chances of survival and living longer.

Though plausible, this principle has its own difficulties. The major problem is that it excludes people whose future contribution to society is unknown. Furthermore the future contribution of any individual is only a likelihood and not certain. In fact it is absolutely impossible for anyone to predict someone's future. The consideration of contribution requires a determination of what an individual might also be expected to

give to society at a future date. To require a contribution to society as a prerequisite to receive services is likewise considered unfair. The mechanism of projecting or determining future contributions for prospective recipients such as infants and children, or those from poorly educated and unskilled backgrounds is not realistically feasible. Furthermore, a uniform calculation basis for considering future social contributions is simply not known. Future contribution also requires that data or evidence-based decision making be adopted. These data are empirically derived from clinical screening. This criterion leaves much room for prejudiced decisions in selecting candidates to receive ART. Because of these difficulties, this principle should not be the first considered in distributing scarce resources; it should rather follow the need principle.

4.4 A Suggested Mechanism for Distributing ARVs in Zambia

In this section an attempt is made to suggest on how the relevant principles of distribution could be put into use in distributing ART in Zambia. This mechanism is based on Rescher's (1969) paradigm of distributing scarce resources, though with some modifications. Some elements of the current Zambian ARV distribution system have also been incorporated in the suggested system of distribution.

In the suggested system of distributing ARVs, the following assumptions about the environment in which ARVs are distributed are made:

- Some people are in a condition such that if they are not provided with ARVs they will die soon.
- The available drugs are not enough for the number of patients who need them.
- The facilities available in terms of human resources, mechanical instruments and other required materials allow distribution of ARVs only to some of the people who require them.

Given these assumptions, which are typical of the Zambian ART situation, the problem is how one should select from the pool of the afflicted patients the ones to be given treatment. In response to this problem, Rescher suggests that we should use general criteria for selecting the eligible patients from the rest. These are the criterion of *Inclusion,* which I find very plausible and the criterion of *Comparison* which I have discarded.

4.4.1 The Criterion of Inclusion

The criterion of inclusion involves selection from among all possible candidates by a suitable screening process of a group to be taken under serious consideration as candidates for the therapy. In the Zambian case, this would involve selecting among the HIV patients those who are eligible for ART. To determine the eligible patients, clinical screening would need to be rigorously employed. Among the clinical conditions that the medical personnel would look at are the following: the CD4 count, viral loads, WHO stages, and adherence to drugs. Eligible patients would be registered at particular health facilities and they would become members of that facility ART clinic. Each ART eligible patient will belong to only one health facility. In this way they meet what Rescher calls the constituency factor. This simply means that any health facility has the normal clientele boundary. Those who are not members of the facility will be left out unless they register to be members of the ART clinic, that is, after undergoing clinical screening. The criterion of inclusion is currently the most common approach being used in distributing ARVs to patients in Zambia. This approach alone, however, is not adequate for the distribution of ARVs because the available drugs are not enough for all the patients who meet clinical conditions and need ARVs. There is, therefore, need for another criterion which Rescher (1969: 184) calls the criterion of Comparison.

4.4.2 The Criterion of Comparison

Whereas the criterion of inclusion is purely medical or clinical, the criterion of comparison is a moral criterion. It involves actual singling out those from the group of the eligible ARV patients to whom the therapy is to be given. Rescher (1969: 187) suggests the use of the past and present contribution principle (social worth) in the choosing of those who should be given treatment. In section 4.2, it has been shown that this principle is weak and cannot be applied to the distribution of ART in Zambia. I thus discard his suggestion and instead suggest that the following principles of distribution be adopted in Zambia. The principles below will be considered after the criterion of inclusion has been applied.

1. Need principle: It has been shown that this principle is relevant to deciding on who should be put on ART and who should not. Priority should be given to those most in need. Those most in need are the least advantaged.

When the amount of ARVs available is enough for the patients who have equal need for them, the need principle alone would be adequate. However, if the available drugs are not enough, then the second principle should be adopted.

2. Distribution according to Future Contribution Principle: If, after applying the need principle, it is still apparent that the available ARVs are not still enough for the patients who have equal need for these drugs, then reference should be made to particular conditions of the needy and their future contribution to society. This implies that among these patients, those who have a higher chance of longer survival after they are put on ART should be given priority over those that have a lower chance of survival. The guiding assumption during selection at this stage is that the patients who have a chance of longer survival after they are put on ART would contribute more to society. For instance, women with children would be selected because, even if they may not have a high chance survival, their children might have. The children may be born HIV-negative and are likely to contribute to the development of society.
3. Random Selection Principle: If the above principles are not sufficient, then a justifiable position would be to subject the neediest singled out by the two principles to some random selection. This could either be through lottery or first-come-first-served criteria.

To illustrate how this mechanism would be put into practice, let us take a scenario of an ARV distribution centre such as Mtendere clinic in Lusaka. Let us also assume that about forty patients have been tested HIV positive at this facility. The first criterion is the criterion of inclusion. According to this criterion, the HIV infected patients will be enrolled at this facility's AIDS clinic. At this clinic these patients will undergo clinical screening to ascertain their eligibility to ART. Among other conditions are CD4 count and the WHO stages (see Appendix II). Those that meet these clinical conditions will then be enrolled at ART clinic. If, among the forty, only twenty are eligible for ART, then only these would fulfil the inclusion criterion. Let us, however, assume that the available ARVs are only enough for five eligible patients. The selection of five patients out of twenty will, therefore, require another criterion. The first consideration should be

the needs of each of the patients. Among the twenty, there are ten patients who are in the high economic class and could buy ARVs from private clinics or centres; ten are from the low social economical class. Among the two groups, it could be seen that the least advantaged are those from the low class and thus these are in more need of ARVs. If we select the ten from the low class, we will still have a problem of selecting five out of this number. At this stage, we can apply the merit principle. Since they have equal need for the drugs, reference should be made to their likelihood of contributing more to society. This will involve looking at their chances of survival and how long they will stay after they put on ART. The assumption is that those who have a high chance of survival and staying long will contribute more to society. If among the ten, two of them will only stay one month more after they are on ART, while others will stay for more than two years, then it would be justifiable not to put these two on treatment. Even after applying this principle, eight patients are most in need of ARVs and they can be expected to contribute much to society because of their high chances of survival. To select five patients, we could apply the random selection principle. The five patients could either be selected using the first-come-first-served principle or by a lottery method.

4.5 Conclusions and Recommendations

It has been established through the study findings that the Zambian ART distribution system has largely used the clinical considerations in distributing ARVs. In some health facilities, the first-come-first-served criterion is employed although arbitrarily. This study has shown that the way ARVs are distributed to DHMT from CBoH is fair. However, the distribution mechanism lacks ethical distribution criteria of how the ARVs could be distributed fairly, particularly at health facilities. It has also become clear from this study that the way in which ART is distributed in Zambia is only known among the medical personnel, particularly those that are involved in administering the drugs to patients. The level of awareness among the policy makers for distributive justice and equity with regard to HIV/AIDS is very low. In addition, the national health policy does not have guidance on how ART could equitably be distributed.

It should be mentioned before hand that the researcher is aware of the financial constraints that the government is going through to ensure quality health care and to arrest the HIV/AIDS pandemic in Zambia. The government will continue spending on

this problem until a cure is found. Some of the recommendations made below require funding for them to be implemented. It requires political will on the part of the policy makers to put them into practice. Once this is done properly, it will be beneficial to the distribution mechanism in ensuring rationing of these scarce resources and may not require further funding.

Key recommendations to the government and other stakeholders are:

Based on the critical evaluation of the Zambian ART distribution system and various principles of distribution, the following are recommendations on how the current system can be improved:

1. To stress distributive justice and equity in the allocation of ARVs in the national health policy.
2. To increase funding towards the procurement of more ARVs.
3. To scale up HIV treatment and care. There is need to have more ART centres. Ideally there should be one at each public health facility in addition to more trained manpower and more adequate infrastructure.
4. To establish broadly representative ethics advisory bodies.
5. To create opportunities for public dialogue on equitable access to HIV treatment and care. Rationing decisions should involve full consultation among health care professionals, the government and the public.
6. To develop policies for scaling up HIV treatment that are firmly based on human rights and ethical principles.
7. To identify vulnerable, marginalized or other potentially underserved populations.
8. To consider the need for special policies and outreach programmes to prioritize these groups and to overcome barriers to their accessing care.
9. To establish a fair process for setting priorities in the distribution of HIV treatment.
10. To raise awareness on the importance of VCT.

On the whole, if the above recommendations could be implemented, it would no doubt help to come up with an equitable mechanism of distributing ARVs to those that are infected with HIV and AIDS.

APPENDICES

Appendix I: List of ART Centres in Zambia (as at 31st December 2004)

Province	District/Town	Government and Mission Health Facility ART Treatment Centre
Lusaka	Lusaka	UTH-Clinic V
	Lusaka DHMT	Chelstone Health Centre
	Lusaka DHMT	UNZA Health Centre
	Lusaka DHMT	Mtendere Health Centre
	Lusaka DHMT	Kalingalinga Health Centre
	Lusaka DHMT	Kanyama Health Centre
	Lusaka DHMT	Matero Referral Health Centre
	Lusaka	Chainama Psychiatric Hospital
	Kafue	Kafue District Hospital
	Luangwa	Katondwe Mission Hospital
	Chongwe	St Luke Mission Hospital
Copperbelt	Ndola	Ndola Central Hospital
	Kitwe	Kitwe Central Hospital
	Ndola	Arthur Davisons Children's Hospital
	Ndola DHMT	Lubuto Clinic
	Chingola	Nchanga North General Hospital
	Mufulira	Ronald Ross General Hospital
	Ndola*	Flying Doctor Service
Eastern	Chipata	Chipata General Hospital
	Lundazi	Lundzi Distric Hospital
	Petauke	Petauke Distric Hospital
	Chipata	Mwami General Hospital
	Katete	St Francis Mission Hospital
Northern	Kasama	Kasama General Hospital
	Mpika	Mpika District Hospital
	Mbala	Mbala District Hospital
	Chinsali	Chinsali District Hospital

Southern	Livingstone	Livingstone General Hospital
	Monze	Monze General Hospital/Mission Hospital
	Siavonga	Saivonga District Hospital
	Mutendere	Mutendere Mission Hospital
	Choma	Choma District Hospital
	Mazabuka	Mazabuka District Hospital
	Chikankata	Chikankata Mission Hospital
North-western	Solwezi	Solwezi General Hospital
	Kasempa	Mukinge Mission Hospital
	Kabompo	Kabompo District Hospital
	Mwinilunga	Mwinilunga District Hospital
Western	Mongu	Lewanika General Hospital
	Lukulu	Lukulu District Hospital/Mission Hospital
	Kaoma	Kaoma District Hospital
	Senanga	Senanga District Hospital
	Sesheke	Sessheke District Hospital
	Kalabo	Kalabo District Hospital
Luapula	Mansa	Mansa General Hospital
	Samfya	Kasaba Mission Hospital
	Samfya	Lubwe Mission Hospital
	Kawambwa	Kawambwa District Hospital
	Kawambwa	Mbereshi Mission Hospital
	Nchelenge	St Pauls Mission Hospital & MSF
Central	Kabwe	Kabwe General Hospital
	Mumbwa	Mumbwa District Hospital
	Serenje	Serenje District Hospital
	Kapiri Mposhi	Kapiri Mposhi District Hospital

*Not providing ART services yet

Awaiting Accreditation and certification

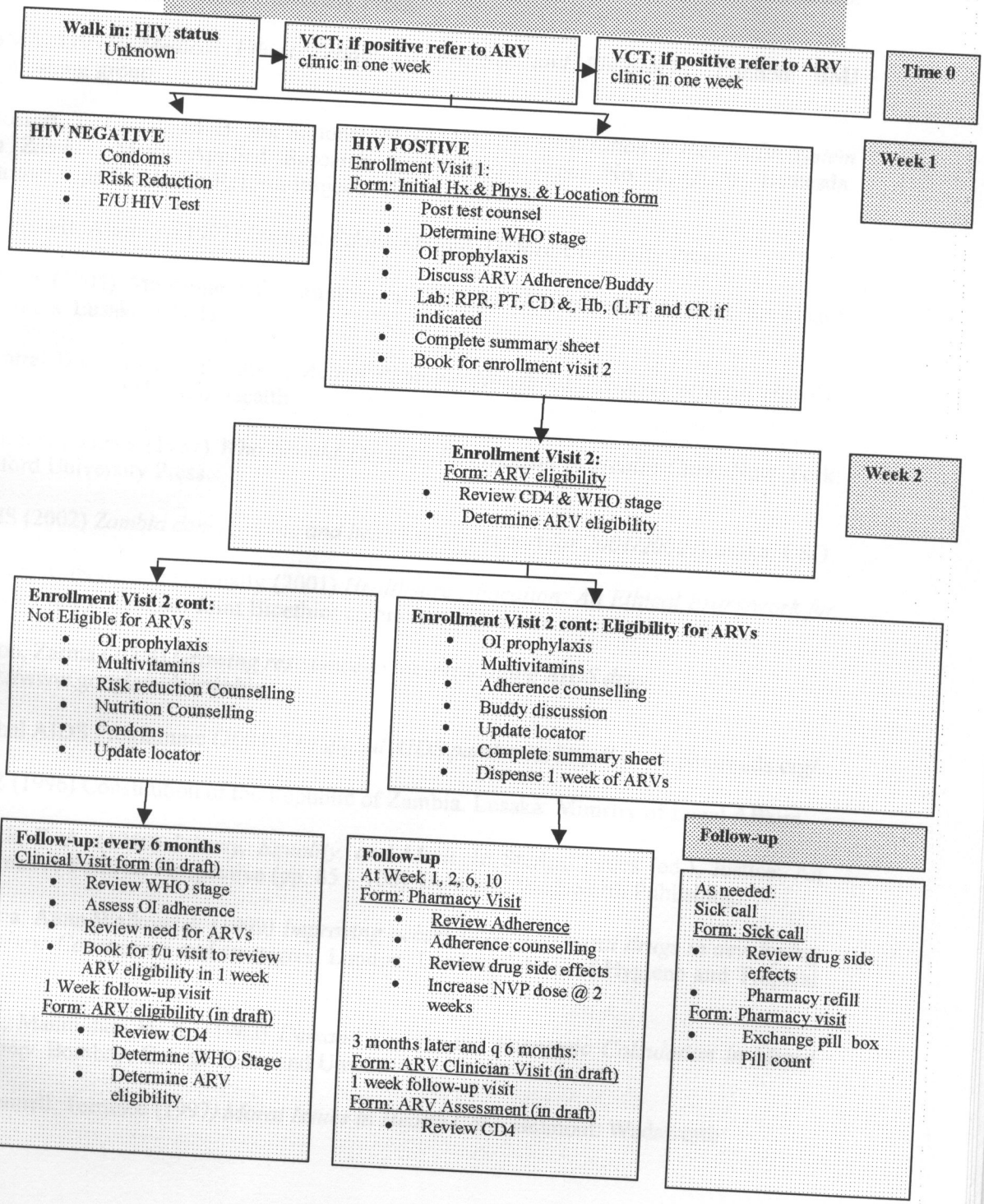
Other ART Centres

Province		District/Town	ART Treatment Centre
Lusaka	1	Lusaka	Maina Soko Military Hospital
Copperbelt	2	Chililabombwe	Konkola Mine Hospital
	3	Kitwe	Mopani (Wusakile)
	4	Lusaka	Our Lady Hospice

Source: MoH and CBoH (2004)

Appendix II: Patients Eligible for ARVs
CD4<200 and WHO Stage 1
CD4<200 and WHO Stage 2
CD4<350 and WHO Stage 3
Any CD4 count and WHO Stage 4

Appendix III: Patient Flow



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