Universal Antiretroviral Drugs for HIV: What are the obstacles to its implementation in South Africa?

Farhaad Haffejee

A Mini-thesis submitted in partial fulfilment of the requirements for the degree Magister in Public Health in the Faculty of Health Sciences of the University of the Western Cape.

Supervisor: Dr Mickey Chopra

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ABSTRACT

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Farhaad Haffejee

MPH mini-thesis, School of Public Health, University of the Western Cape.

Perhaps one of the most interesting and controversial debates occurring nationally at present is the one around HIV/AIDS and the cost, availability and supply of antiretrovirals (ARVs) in the public health sector. On the 8th August 2003, the cabinet instructed the Minister of Health to have a detailed operational plan in place and to begin some kind of an ARV roll-out by the end of September. At the time of writing this (November 2003), the plan was still awaiting cabinets approval.

It is the aim of this study to try and investigate what the obstacles to providing ARVs at different levels of government are. This study reviews the background literature on ARVs and its proven efficacies. Thereafter, the literature on patent laws and the Trade Related Aspects of Intellectual Property Rights (TRIPS) as well as South Africa's negotiations at the World Trade Organisation (WTO) with specific reference to generic ARVs are examined.

Some key informants have been interviewed to get a clearer understanding on the obstacles to universal ARV distribution. These include a negotiator from the

South African Department of Trade and Industry (DTI), a representative from the Western Cape Provincial Department of Health, the head of the Medicines Control Council (MCC) and an experimental and clinical pharmacologist. These interviews have been dissected and analysed so that all points of view are represented. This thesis suggests that areas of concern are, drug prices, human resources and importantly, political will. It also recommends that patient selection criteria be developed after proper consultation, human resources and staff training be addressed as part of a national strategy. Further conclusions include the sourcing of the cheapest possible prices for ARV drugs, ensuring a proper distribution strategy for the ARVs, as well as looking to other countries with experience for assistance. Finally, it examines using existing infrastructure such as the tuberculosis programmes as a basis for implementing the ARV programme and also considers implications the programme may have on equity within the health services.

November 2003

DECLARATION

I declare that *Universal Antiretroviral Drugs for HIV: What are the obstacles to its implementation in South Africa?*, is my own work, that it has not been submitted for any degree or examination in any other university, and that all sources I have used or quoted have been indicated and acknowledged by complete references.

Farhaad Haffejee

November 2003

Signed

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I would like to thank my wife Rashmi for her unconditional love, patience, sacrifice and support, that has given me the strength to complete this degree. The same thanks to my immediate family who, no doubt, will raucously celebrate with me.

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CHAPTER 1: INTRODUCTION

Of the world's 42 million people infected with HIV or full-blown AIDS, 29.4 million live in sub-Saharan Africa, which had 3.5 million new infections last year, and 2.4 million AIDS-related deaths. Of those, according to UNAIDS, 360 000 occurred in South Africa in 2001 – an average of 986 a day.[1]

The National HIV and Syphilis sero-prevalence survey of women attending public antenatal clinics in South Africa 2000 showed an alarming increase in prevalence of HIV in the decade 1990 to 2000.

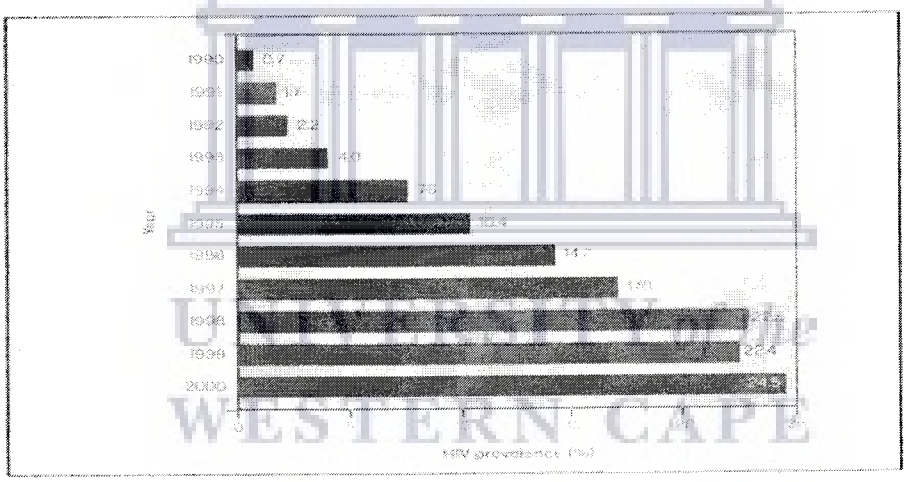

Figure 1: National HIV prevalence trends among antenatal clinic attendees in South Africa: 1990-2000.[2]

Source: Department of Health. National HIV and Syphilis sero-prevalence survey of women attending public antenatal clinics in South Africa 2000. Pretoria: Department of Health; 2001.

It is estimated that if South Africa does not implement a large scale AIDS treatment plan soon, five million people will die from AIDS in the next eight to ten years.[3] By 2006, if no antiretroviral (ARV) therapy was given to prevent and treat AIDS, there would be an average of 1,4-million AIDS cases annually in South Africa. From 2004 onward, without interventions to treat and prevent HIV effectively, there would be about 700 000 deaths a year. Universal ARV treatment would see mortality figures drop to 400 000 a year.[3]

There is no doubt that ARV treatment is an essential component of fighting the AIDS pandemic. Studies on ARV therapy have shown that viral loads can be reduced by 99% [4] and mortality can be reduced by as much as half.[5,6] One study showed that between 65% and 81% of those with the triple combination therapy had reduced their level of viral load to undetectable levels after 6 months of treatment.[7]

In so-called developed countries, widespread use of ARV regimens have substantially reduced AIDS-related morbidity and mortality, and the use of ARV prophylaxis among HIV1 positive women has almost eliminated perinatal transmission.[8,9] Data from studies performed with pregnant women have revealed that the probability of mother-to-child transmission (MTCT) can be reduced by about two thirds when the women are provided with AZT in the last month of pregnancy.[10]

An interesting and controversial debate occurring nationally at present is around the cost, availability and supply of ARVs in the public health sector. Much has been written about, spoken about and demonstrated around this issue in the last few years, yet to date nothing of tangible significance (aside from some pilot projects) has transpired. On the 8th August 2003, however, the South African parliamentary cabinet, it's decision making body, instructed the Minister of Health to have a detailed operational plan in place and to begin some kind of an ARV roll-out by the end of September. Judging from the Ministers comments subsequently though, it seems like a national ARV roll-out still seems very far away. At the time of writing this thesis (November 2003), the plan was still awaiting cabinets approval. In the meantime, pressure groups and social activists have begun organising themselves as a more structured force and the pressure on government is rising.

It is the aim of this study to investigate what some of the obstacles to providing ARVs at different levels of government are.

This study will begin by reviewing the background literature on ARVs and its proven efficacies as well as their associated complications. Thereafter, the literature on patent laws and the Trade Related Aspects of Intellectual Property Rights (TRIPS) as well as South Africa's negotiations at the World Trade Organisation (WTO) with specific reference to generic ARVs will be examined. The latter parts of the literature review looks at ARV costs and examines current and past ARV programmes in developing countries.

Research design and methodology is then discussed after which the interviews that have been conducted with the key informants are analysed and discussed in the penultimate section of the thesis. The last part of the thesis details some of the limitations of this study and draws some conclusions.

CHAPTER 2: LITERATURE REVIEW

It is estimated that between 5 and 7 million South Africans are expected to succumb to AIDS by 2010 [11] and the country is predicted to have more than 2 million orphans by the same year.[12] Antiretroviral (ARV) drugs, if used correctly, provide significant opportunities to change the pattern of these two important indicators. Recent developments at the negotiating table of the World Trade Organisation (WTO) around patent rights and generics, the completion of a report by a task team appointed by government to explore an ARV roll-out and an international drop in the prices of ARVs all seem to stand in South Africa's favour as the country gears itself up to turn the tide of this deadly pandemic. Yet there are many other factors such as current infrastructure, human resources, drug procurement strategies, counselling, patient adherence and compliance, treatment protocols, laboratory monitoring and more importantly, political will, that needs to be considered in order for this national intervention to be successful.

The structure of this literature review is as follows: it will start with an overview of the scope of the problem and then look at the history of ARVs. This will then be proceeded by a perusal of the problems of patient compliance and ARV complications. The literature review then unpacks the convoluted subjects of intellectual property rights – the ethical issues that arise from this, the Trade Related Aspects of Intellectual Property Rights (TRIPS) agreement, WTO negotiations and the South African perspective. The last part of the literature

review examines costs of ARVs and then looks at lessons to be learnt from ARV programmes in developing countries.

2.1 Scope of the Problem

The most devastating HIV and AIDS epidemic is in sub-Saharan Africa. Already, AIDS mortality has had a severe demographic impact, and population projections suggest that AIDS mortality will lead to further declines in the region's health status.[13]

Speaking at the Global Forum on Health and Development at the African Union Summit in Maputo in July 2003, the Executive Director of the Joint United Nations Programme on HIV/AIDS (UNAIDS), Dr Peter Piot, said that sixty million Africans have been touched by AIDS in the most immediate way.[14] They are either living with HIV, have died of AIDS or they have lost their parents to AIDS. But the toll of those directly affected is even higher.

With up to 1000 adults and children dying of AIDS each day in some of the worst affected countries in Africa, Africa is losing a significant portion of its young people and productive workforce. "Only if AIDS is rapidly brought under control will social and economic development be able to flourish," said Dr Piot. "This can become a reality if African leaders make it their business to invest in both AIDS prevention and care and treatment." Today, fewer than one in five people at risk of HIV infection in Africa are targeted by an HIV prevention program.[14]

In addition to scaling up AIDS prevention programmes, ensuring wider access to care and treatment for people living with HIV/AIDS must also be a priority for African leaders. "The price at which antiretrovirals are available to developing countries has dropped significantly, but technical facilities and sustainable financing are still major barriers," said Dr Piot. "African governments must seize the opportunity to expand access to HIV care and treatment in their countries." In sub-Saharan Africa, only some 50,000 people have access to ARVs out of an estimated 4 million people in need of the medicines.[14]

2.2 ARVs – A Brief History

In March of 1987, AZT became the first ARV approved for the treatment of Persons with AIDS (PWAs) in the United States (US). The next ARV, ddI, was not approved in the US until October 1991. By December of 1995, saquinavir, the first protease inhibitor, received approval from the US Food and Drug Administration (FDA). Over the next 16 months, 3 more protease inhibitors received approval.

There are currently three types of ARVs that have been approved by the US FDA:

1) nucleoside reverse transcriptase inhibitors (AZT, ddI, ddC, 3TC and d4T),

2) non-nucleoside reverse transcriptase inhibitors (nevirapine and rescriptor) and

3) protease inhibitors (saquinavir, ritonavir, indinavir, and nelfinavir).

The ideal treatment strategy for PWAs involves the use of a protease inhibitor and two reverse transcriptase inhibitors. The combination of these three drugs has become known as triple combination therapy.[15]

Results from medical studies on triple combination ARV therapy have been extremely impressive, especially among patients who have never been exposed to an ARV. Studies of triple combination therapy have shown that viral loads can be reduced by 99% [4] and mortality can be reduced by as much as half.[5,6] One study showed that between 65% and 81% of those using the triple combination therapy had reduced their level of virus to undetectable levels after 6 months of treatment.[7]

Despite these remarkably positive results, the 93% of people infected with HIV who live in developing countries cannot obtain ARVs.[15] When the issue of access to ARVs is raised in developing countries, the response of policymakers has typically been that these drugs are too expensive or that the purchase of other drugs should take priority. In South Africa, the concern of toxicity of these drugs has also been raised by government.

Reductions in the price of AZT and its use in preventing the transmission of HIV from a mother to her child has encouraged its expanded use in some developing countries. Yet it is generally agreed that such monotherapy (using only one ARV

drug) is less than ideal, and in fact may make patients less responsive to future treatment regimens.[15]

It is however clear that ARV suppresses HIV replication and significantly alters the natural history of the infection.[16,17] In more developed countries, widespread use of ARV regimens have substantially reduced AIDS-related morbidity and mortality, and the use of ARV prophylaxis among HIV1 positive women has almost eliminated perinatal transmission.[8,9] Data from studies performed with pregnant women have revealed that the probability of mother-to-child transmission (MTCT) can be reduced by about two thirds when the women is provided with AZT in the last month of pregnancy.[10] Trials done in Africa among breastfeeding women have shown the effectiveness of short-course ARV regimens for preventing vertical transmission of HIV1.[18,19,20,21] Of all the advances, this finding may be of greatest relevance to less-developed countries, where the cost of ARVs have made triple drug treatment inaccessible to most of those infected.[22]

Studies done in South Africa have shown how lives may be prolonged if Highly Active Antiretroviral Therapy (HAART) is introduced as part of a comprehensive intervention.[23] Figure 2[24] below illustrates life expectancy under three different scenarios. The vertical axis shows age while the horizontal axis depicts the year. The three lines depict how long the average South African will live in a particular year. For example, in scenario one (treated for opportunistic infections, OIs, only) the average South African lives to just above 40 years in 2009. However in

scenario three (treatment and prevention) the average South African lives until about 50.

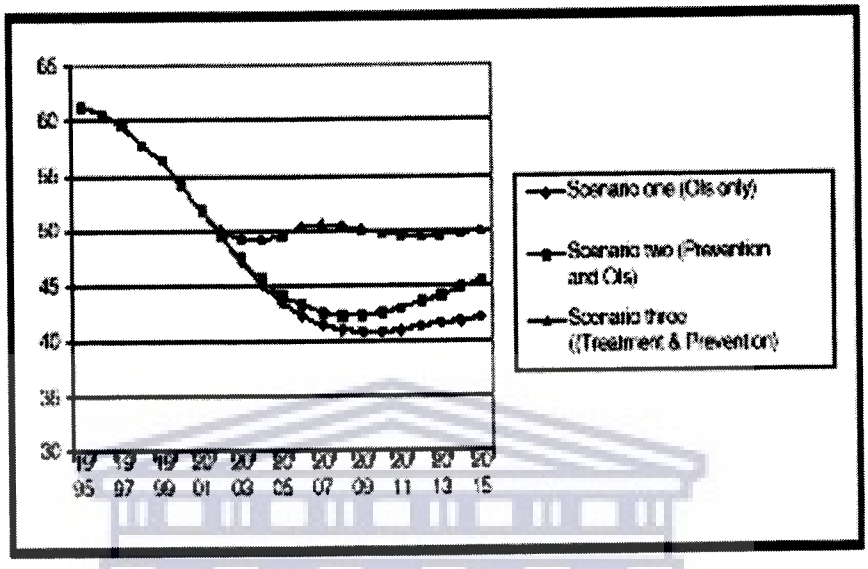

FIGURE 2: Life expectancy under three different scenarios.[24]

Source: Johnson and Dorrington, 2002, quoted in TAC fact sheet.

Figure 3 [24] below shows that between July 2002 and June 2015, scenario two (prevention) will reduce HIV infections by over 1.5 million. It will reduce AIDS by less than 500 000. Scenario three (treatment and prevention) reduces the number of infections and AIDS deaths by over 2.5 million each.

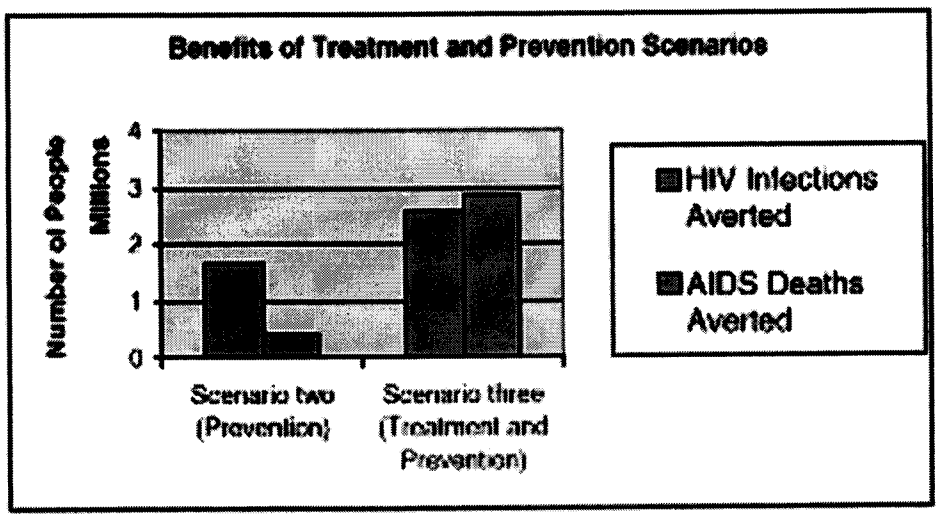

FIGURE 3: HIV infections and AIDS deaths averted, July 2002 to June 2015.[24]

Source: Johnson and Dorrington, 2002, quoted in TAC fact sheet.

2.3 Compliance and Complications

Treatment with ARVs should fail only if mono or dual therapy is used. Only triple combination therapy is able to achieve the levels of viral suppression required for effective treatment. In addition, it is absolutely essential that the drugs be taken regularly. Poor compliance from the patient will lead to treatment failure. It will also lead to mutations in the virus, effectively rendering it resistant to the drugs used. Should there be a failure of treatment, the patient must be switched to a second line regimen in which all three drugs must not have been previously used. The second line treatment may not however be as effective as the first line as some class resistance may have developed to the second line

drugs. Good adherence will not only allow for the best results for the majority of patients to the first line regimens, it will also limit the spread of resistant viruses.

Mild or severe side effects are an important reason for patients to stop treatment with one or more drugs. These side effects, because of the high frequency, discourage patient compliance. More common amongst these side effects are skin rashes, headaches, dizziness, diarrhoea, lactic acidosis, cramps, fatigue and insomnia to mention but a few.

Pharmacological advances over the last two years have significantly improved the ease of adherence. A few years ago, patients on HAART were required to take 10 or 12 tablets 3 to 4 times a day. There are now regimens available that are far simpler. The number of tablets and doses that are to be taken was found to be a significant factor in adherence.[25]

Studies in Botswana, Uganda, Senegal and South Africa have found that on average, AIDS patients in these countries take about 90% of the pills in their ARV drug regimens, compared with 70% among patients in the United States.[26]

2.4 Intellectual Property Rights and Ethics

Why is the cost of ARVs so prohibitive? A major part of the answer to this question has to do with trade policies, patent laws and their impact on generic medication.

a) Issues of global equity

Equity in health is often understood and explained as the responsibility of national governments towards their citizens. The problem of access to advanced treatment for PWAs in developing countries presents both conceptual and practical challenges to our notions of equity. Factors which influence access to care in developing countries are multiple and frequently inter-related. For instance, protease inhibitors and other advanced ARV medications are produced mainly by US companies and are therefore completely controlled by US trade policies.

To take no more than one example, it is commonly believed that Most Favoured National (MFN) status in trade relations is often used as a political tool by many of the world's governments to achieve their geo-political objectives. Whatever the truth of that, the fact is that a concerted global effort has only just begun to be made to exclude AIDS-related medication and technology from such trade rules. There is at present an urgent need to review all trade policies that affect the affordability and the accessibility of AIDS-related technology and medications in developing countries.

b) Maximalist/minimalist perspectives of ethics and human rights.

Often, AIDS-related ethical issues are presented in a minimalist perspective. The common denominator of most of the discussion about the ethics of treatment is a

minimal requirement on ethics. The issue of prophylactic trials in developing countries presents an interesting case of such a minimalist perspectives of ethics.

A study carried out by the US Centers for Disease Control & Prevention (CDC) in Thailand on AZT use, compared a few weeks of AZT treatment to a placebo. Nine percent of the mothers given AZT passed HIV on to their infants, compared to 19 percent in the placebo group.[27] It is concluded therefore that the use of AZT for less than a month at the end of a pregnancy can halve the rate of AIDS transmission from mother to child in developing countries.

The CDC study marked a watershed in our ability to begin controlling HIV transmission in the 90% of the world where more costly and lengthy AZT courses are simply not available. It is findings like these that has lead to increasing demand for access to effective AIDS drugs.

However, many people in the developing world believe that, in reality, this finding will be almost like a license to print money issued to one single company. This is because the US Supreme Court has ruled that the patents assigned to Glaxo Wellcome covering the use of AZT for treatment of HIV-infection and AIDS cannot be challenged. The Supreme Court has recognised Glaxo Wellcome as the sole inventor and assignee for the main US patents covering use of AZT marketed under the trade name Retrovir.

So the AZT trials on antenatal mothers in developing countries may well adhere to notions of ethics in a minimalist perspective. But perhaps a maximalist perspective on ethics should also suggest ways and means to provide continuing preferential access to the technology and medications refined through such trials for the subjects of such trials and for their communities.

In such a maximalist perspective on ethics, the global trade policy which allows a single company to retain the patent rights of AZT for two decades would be questioned in a search for constructive solutions. Such policies and practices are increasingly becoming critical determinants in access to optimum AIDS treatment in developing countries.

Many pharmaceutical companies in developing countries are capable of producing AZT in a more cost-effective way. However the trade policies and barriers, and other associated deterrents, are preventing them from producing many of the advanced AIDS prophylactic and complementary technologies.[27]

Prices charged by pharmaceutical companies for patented drugs and diagnostic tests are commonly several orders of magnitude higher than their marginal cost (the cost of producing an additional unit of the drug). Low marginal costs explain why generic drug producers, as soon as they do not have to pay royalties to patent holders, are able to offer substitutes to branded products at comparatively low prices. Using the capacity of its national industry to produce cheaper generic versions of eight ARV drugs, Brazil has been able to deliver HAART for almost

100 000 HIV infected patients.[28] Taking into account current production costs of generic suppliers and potential economies of scale, marginal costs of delivery of some triple drug HAART combinations can be expected to be decreasing in cost per patient per year. In a perfectly competitive market, in which consumers will automatically buy a good substitute if its price is lower, international drug prices would spontaneously tend to be based on such marginal cost.

Of course, in the case of innovative products like ARVs, private firms argue that they need to recover their high overhead costs for research and development and for fulfilling the regulatory prerequisites of market approval in high-income countries.[29] Economic theory has long recognised that guaranteeing the intellectual property rights of the inventors, although it corresponds to the attribution of a "temporary monopoly power" to the patent owner, creates socially useful long-term incentives for private risky investments in research and development of innovations.[30] However, the international market of branded ARV products is characterised by imperfect competition: a limited number of firms (7) supplies a limited number of products (15); inside each of the classes of ARV drugs, the number of suppliers is even smaller (4).[31] In such oligopolistic markets, economics points out that private firms are in a position to impose prices and rates of return that may capture an "excessive rent", and that it is often in the interest of society to associate patent rights with compulsory licensing obligations in order to guarantee an efficient public disclosure of innovative knowledge.[32] Indeed, existing World Trade Organisation (WTO) rules about Trade-Related Aspects of Intellectual Property Rights (TRIPS) permit compulsory licensing: any

country may allow a third party to use a patent without the owners consent "in cases of national emergency" or "other circumstances of extreme urgency".[33] HIV/AIDS certainly qualifies for such status in most developing countries.[34]

2.5 *The Trade Related Aspects of Intellectual Property Rights Agreement (TRIPS)*

The TRIPS agreement establishes minimum standards in the field of intellectual property. All member states have to comply with these standards by modifying where necessary, their national regulations to accord with the rules of the agreement. The main charge with respect to pharmaceuticals, compared to the pre-existing multilateral conventions, is the obligation to grant patent protection to pharmaceutical product and process inventions.

Under the TRIPS agreement, member states have to grant patents, for a minimum of 20 years, to any inventions of a pharmaceutical product or process that fulfils the established criteria of novelty, inventiveness and usefulness. As soon as the agreement applies in a member state, the patent holder should therefore have the legal means to defend against copies of patented drugs. If a country fails to bring its legislation in conformity with the TRIPS agreement as such, it can be the subject of a complaint under the WTO dispute settlement system, and if, after an adverse ruling against it, it stills fails to comply, it then may incur trade sanctions authorised by the WTO.[35]

Although social benefits may arise from patent protection through the discovery of new drugs, the TRIPS standards derive from those of industrialised countries and are not necessarily appropriate for all countries' level of development. Public health concerns should therefore be considered when implementing the agreement.

The agreement leaves member states a certain amount of freedom in modifying their regulations. The terms *invention* and *discovery* are not defined in the agreement, yet how they are defined could have important implications in the biotechnological field. The agreement says that member states may provide limited exceptions to the patent holder's exclusive rights in their laws. National public authorities may be allowed, within the conditions laid down in the agreement, to issue compulsory licences against the patent owner's will when justified by the public interest. The agreement does not prohibit parallel imports. These restore price competition for patented products by allowing the importation (without the holder's consent) of identical patented products which have been manufactured for a lower price in another country.

It is generally accepted that pharmaceutical products cannot be regarded as ordinary goods or products. In the first place this is because consumers are not in a position to judge, for example, the quality of drugs, hence the need for a monitoring and surveillance system ensured by the state. Secondly, this is because drugs play a significant social role in that they are an integral part of the realisation of a fundamental human right – the right to health. That is why they

are classified as essential goods, to emphasise that they have to be accessible for all people.

The concept of accessibility is very important. It means that policies pursued must aim to make drugs available for all who wish to have them, and at affordable prices. If the objective is accessibility, then the best possible supply must be ensured.

The general paragraphs in the TRIPS agreement (preamble and general provisions) stress the need to promote adequate and effective protection of intellectual property rights, but to do so as part of a series of broader economic objectives.[36] The protection of intellectual property rights is not an absolute and exclusive obligation.

The TRIPS agreement requires patent protection to be available for any invention in any field of technology in all WTO member states. This provision is essentially aimed at pharmaceutical products, for which certain developing countries, as well as developed countries, had refused to grant patents. Because of the high prices of patented drugs and the large amount of expenditure required for research and development in the pharmaceutical field, some countries had chosen to imitate products patented in industrialised countries through reverse engineering, in order to meet their national requirements for drugs at a lower cost and to develop their technology. Other countries with no pharmaceutical industry bought these copies of patented drugs at competitive prices. This is similar to the practice adopted by

many developed countries some years ago when their own pharmaceutical industry was not yet highly developed.

Despite the positive contribution that the patent system may bring to public health by generating incentives for innovation, it should be pointed out that the emergence of a generic drug sector in a number of developing countries represents a set of successful social policies that may be harder to duplicate under TRIPS.[35]

South Africa had already, in some way, tested these waters. In April 2001, the government, backed by a number of civil society organisations and activist groups, won a court battle against 39 pharmaceutical companies which were seeking to stop legislation (the Medicines and Related Substances Control Amendment Act of 1997) that would allow the government to make use of parallel importation, compulsory licensing and the use of generic substitutes instead of patented drugs. The South African government argued that its tactics were legal under international patent laws. Under increasing international and local pressure, the pharmaceutical companies withdrew their case and looked for ways to appease the public. Mostly, they had offered to make donations of drugs or to offer reduced prices in certain circumstances. However this had also come under attack, as there were too many conditions attached. As an example, the offer of free fluconazole from Pfizer applied only to HIV-positive patients who had a spinal tap to confirm that they had cryptococcal meningitis. It would not be available for patients with other fungal infections who would also have benefited from the drug. The offer also expired six months after the patent of the drug

expired, apparently to prevent the government from buying generics in those six months.

2.6 Agreement Reached at World Trade Organisation Negotiations

As has previously been stated, flexibilities such as compulsory licensing are written into the TRIPS agreement — governments can issue compulsory licenses to allow other companies to make a patented product or use a patented process under licence without the consent of the patent owner, but only under certain conditions aimed at safeguarding the legitimate interests of the patent holder. However, some governments were unsure of how these flexibilities would be interpreted, and how far their right to use them would be respected. The African Group (all the African members of the WTO) were among the members pushing for clarification.

A large part of this was settled at the Doha Ministerial Conference in November 2001. In the main Doha Ministerial Declaration of 14 November 2001[37], ministers stressed that it is important to implement and interpret the TRIPS agreement in a way that supports public health — by promoting both access to existing medicines and the creation of new medicines. They therefore adopted a separate declaration on TRIPS and Public Health. It was agreed that the TRIPS agreement does not and should not prevent members from taking measures to protect public health. They underscored countries' ability to use the flexibilities that are built into the TRIPS agreement, including compulsory licensing and parallel importing and they

agreed to extend exemptions on pharmaceutical patent protection for least-developed countries until 2016.

On one remaining question, they assigned further work to the TRIPS Council — to sort out how to provide extra flexibility, so that countries unable to produce pharmaceuticals domestically can import patented drugs made under compulsory licensing.

Article 31(f) of the TRIPS Agreement[36] says products made under compulsory licensing must be "predominantly for the supply of the domestic market". This applies directly to countries that can manufacture drugs — it limits the amount they can export when the drug is made under compulsory licence, and it has an indirect impact on countries unable to make medicines and therefore wanting to import generics. They would find it difficult to find countries that can supply them with drugs made under compulsory licensing.

Members were deadlocked over how to resolve this question, and the original deadline of 31 December 2002 was missed.

To further complicate matters, the US and Japan opposed a compromise text that had been agreed to by all other member states. Their apparent concern was that the system would be abused and that cheap drugs that were destined for developing countries would end up in developed countries. They requested certain restrictions be added to the agreement. These were opposed by the

developing countries. The stance of the US was widely criticised as being hypocritical given its frequent use of compulsory licensing. According to the Washington based Consumer Project on Technology, in September of 2001, the US government itself issued 178 compulsory licences, mainly regarding software.[38]

WTO member governments broke their deadlock over intellectual property protection and public health on the 30 August 2003. They agreed on legal changes that will make it easier for poorer countries to import cheaper generics made under compulsory licensing if they are unable to manufacture the medicines themselves.

This agreement allows any member country to export pharmaceutical products made under compulsory licences within the terms set out in the decision (Annexure 1 of the agreement).[39] All WTO member countries are eligible to import under this decision, but 23 developed countries are listed in the decision as announcing voluntarily that they will not use the system to import.

A separate statement by the General Council chairperson is designed to provide comfort to those who feared that the decision might be abused and undermine patent protection. The statement describes members' "shared understanding" on how the decision is interpreted and implemented. It says the decision will be used in good faith in order to deal with public health problems and not for industrial or

commercial policy objectives, and that issues such as preventing the medicines getting into the wrong hands are important.

The deal was however damned with faint praise by the major advocacy groups involved in lobbying for a more generous deal. Oxfam and Médecins sans Frontières (MSF) said the deal did little to change the long-term trend in global trade.[40]

The Consumer Project on Technology pointed out that the deal gives the WTO Secretariat and the TRIPS Council the right to "oversee" the use of compulsory licensing. Far from creating a flexible system, their fears are that the deal will allow the WTO, dominated by developed world interests, to argue over interpretation of the deal at every stage.[40]

Countries will have to issue compulsory licenses for every purchase, and it is unclear if global procurement mechanisms, such as the facility being planned by the World Health Organisation (WHO), will have to go through time-consuming compulsory licensing procedures for each country that applies for help.

Advocates say that the deal does nothing to address the question of what happens if countries need cheap versions of drugs licensed in the US and Europe after 2005. Under the TRIPS agreement, any drug patented after 2005 cannot be copied by generic manufacturers in India or other major manufacturing nations.

2.7 South Africa Leads the Way

South Africa has begun leading the way on implementing the deal. A year ago, the Treatment Action Campaign (TAC) and others filed a complaint with the Competitions Commission, the South African body empowered to arbitrate complaints about restrictive and abusive business practices, against the pharmaceutical firms of Glaxo Smith Kline (GSK) and Boehringer Ingelheim (BI). These companies hold patents on certain ARV medications. GSK holds patents in South Africa on AZT (branded as Retrovir), lamivudine (branded as 3TC) and AZT/lamivudine (branded as Combivir). BI holds patents in South Africa on nevirapine (branded as Viramune). The original complaint in this matter was filed alleging that GSK and BI were charging excessive prices to the detriment of consumers for their patented ARV medicines.

On the 16th October 2003, the Competition Commission found that pharmaceutical firms GSK and BI had contravened the Competition Act of 1998.[41] The firms were found to have abused their dominant positions in their respective ARV markets.

In particular the Commission found that the firms had engaged in the following restrictive practices:

1. Denied a competitor access to an essential facility
2. Excessive pricing
3. Engaged in an exclusionary act

With this decision, the Competition Commission has cleared away patent barriers to access to medicines. The decision is the clearest example yet of effective implementation of the World Trade Organization's Doha Declaration on TRIPS and Public Health.

2.8 ARV Costs

Since 2000, the international prices of some first line ARVs have dropped sharply due to some of the reasons previously mentioned i.e. sustained public pressure, discount offers from patent holders, vocal criticism of TRIPS and the growing political attention being paid to the AIDS epidemic.

Figure 3 below illustrates the price drops for selected ARVs in South Africa from 1998 to 2002.[42]

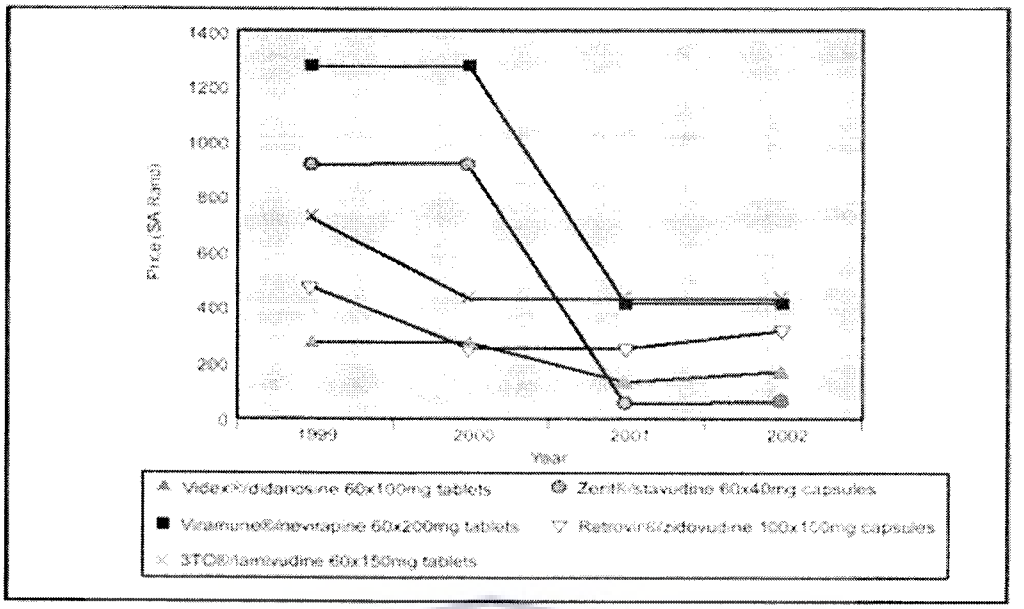

Figure 3: Prices of selected ARVs 1998-2002* in South Africa[42]

**Prices used are for drugs ex pharmaceutical companies, including VAT i.e. manufacturer price.*

Source: SAHR, 2002, chapter 13 ARVs, Martinson, N., et.al.

In 1996, after a presidential decree, HIV-positive Brazilians were guaranteed free universal ARV access. The Brazilians manufactured triple combination generic ARVs for less than US$3000 per patient per year as compared to US$10000 - US$15000 per patient per year for the original products in industrialised countries.[43] In May 2000, five pharmaceutical companies announced a new partnership called the Accelerating Access to HIV/AIDS Care, Treatment and Support (also known as the Accelerating Access Initiative – AAI). This is a public-private partnership with the United Nations to offer discounted ARVs to developing countries.

In February 2001, CIPLA an Indian generics firm, announced that it would sell a triple combination ARV for US$350 per patient per year. Médecins sans Frontières (MSF) which runs a number of ARV programmes around the world, including one in Khayelitsha, Cape Town, have reported that even with differential pricing, patent or originator medicines are much more expensive than generics.[43] They have stated unequivocally that generic production is necessary to introduce competition to the market and have shown how prices have drastically dropped in the last three years (see Figure 4 below).

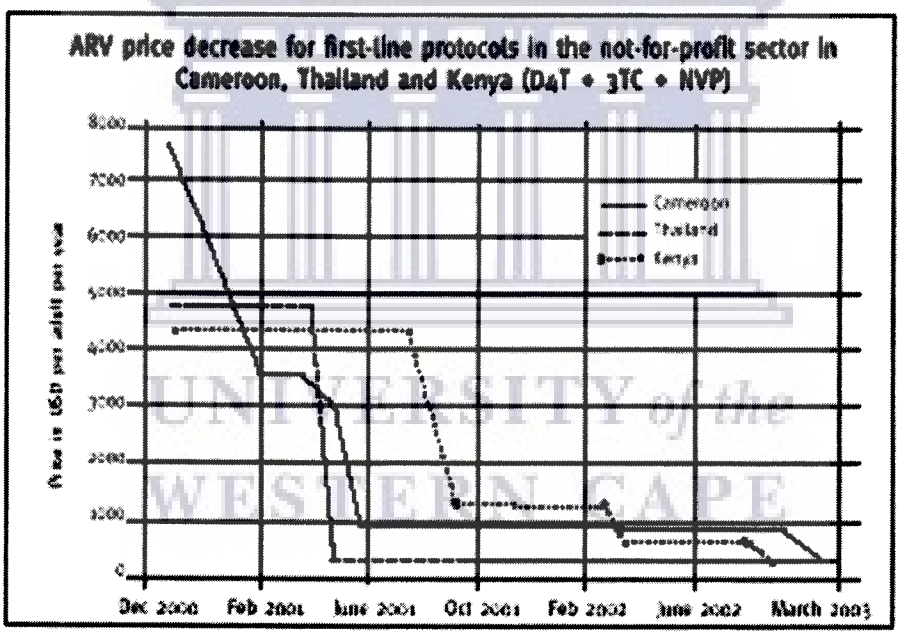

FIGURE 4: The reduction of prices offered to MSF and other not for profit treatment providers over the past three years in three countries [43].

Source: MSF Technical Report

At present in South Africa, there are still no ARV generics available on the market. MSF imports generics with a special authorisation and purchases patented ARVs at differential prices locally. They are now paying US$400 for a first line regimen of nevirapine and US$1000 for a first line regimen with efiravenz.[43]

At the time of writing this thesis, a South African company called Aspen, had just announced that they had struck a deal with the Clinton Foundation to begin manufacturing generic ARVs locally.

2.9 ARV Programmes in Developing Countries

Data lending support to use of ARV treatment in poorly resourced regions are few. Even in well-resourced countries, clinicians still do not have evidence-based answers to simple issues such as: when to start ARVs, how to monitor their therapeutic and toxic effects, and in what sequence to use them. Answers to such issues are greatly needed to speed up delivery of ARVs to the populations most in need of treatment.[44]

The challenges faced in establishing ARV programmes in developing countries/resource poor settings are many. Challenges include securing and mobilising funds and technical assistance from the international community, allocating scant national resources between competing health priorities, and developing or enhancing local systems of care.

A study by Weidle, Mastro, et al (2002) [45] noted that the capacity to provide high-level care and adequate diagnostic and monitoring facilities varies greatly between and within countries, thus approaches to care should be manageable within and adaptable to local conditions.[46,47,48,49] Public, private, and business sector efforts are needed to meet these challenges. Most people in need of care are reliant on the public sector, but are the least able in society to advocate for and access care beyond very basic services. Caring for these millions of people requires enhancement of governmental and non-governmental programmes, attention to political, community, and health-care infrastructures, and cultural matters (panel 1).[45] Because of the magnitude of the epidemic in many developing countries, the absolute numbers of people who could be managed in the private sector, with or without support from outside sponsors, is substantial.[49] Standards of care could be improved with use of models including training, assistance, and incentives for private practitioners to manage large numbers of patients. Finally, the business sector could enhance the productivity of their companies, and improve people's lives, by providing care to HIV-infected employees and their families.

Panel 1 [45]: **Considerations for the successful introduction of antiretroviral therapy into a community**

1 Acceptance of treatment by political and community leaders

2 Education and sensitisation of community

3 Training of health-care and community workers

4 Enhancement of health-care infrastructure to enable monitoring for effect and toxicity

5 Judicious and equitable patient selection process

6 Secure and sustainable system for acquisition and distribution of drugs

7 Design of the programme adapted to local conditions

8 Culturally appropriate methods to ensure adherence and provide support to patients

9 Preventive therapy for opportunistic infections

10 Continuing assessment of knowledge, attitudes, and behaviours

A pilot ARV drug therapy programme in Uganda was one of the first national programmes aimed at increasing access to ARV therapy in Africa. This pilot programme showed that, through modest increases of existing resources, an effective system for drug procurement, distribution, and accountability could be implemented and maintained.[50] This accomplishment led to an uninterrupted supply of drugs that supported sustainable management of patients, despite the often stated financial, logistical, and technical impediments to treatment access. Patients returning for visits reported good adherence to treatment. Virological and immunological responses to ARV drugs were similar to those seen in North America and Europe.[51,52,53,54] The early successes of the UNAIDS/Uganda Ministry of Health DAI pilot programme were the result of important human and financial investment and national commitment. Training and capacity building proved to be important components. Uganda's Ministry of Health has

incorporated the essential elements of this pilot scheme into a programme that is consistent with their HIV strategic framework.[55]

The limitations and problems experienced in this study were documented as follows:

> There were several limitations to this initiative, to this assessment, and to our ability to generalise these results. Patients paid for their own treatment, which constrained drug selection even for patients who were very ill. The virological and immunological results reported in this observational analysis could be biased: patients who survive and do well might have had more tests done, potentially overestimating the reported benefits of treatment. The median length of time observed in care was only 3-4 months for patients started on drugs, since many patients were lost to follow-up, stopped therapy, or died – events that tended to occur early – and nearly a third were started during the last 6 months of the assessment. Although the number of patients lost to follow-up was an important part of the assessment, the survival of patients lost to follow-up was unknown, which might have underestimated mortality rates. Additionally, we could not assess reasons why patients did not return for follow-up. However, the higher median CD4 cell count among those lost to follow-up suggests that a high near-term mortality rate was not the primary cause of not returning. Adherence information was incomplete and self-reported.

Laboratory monitoring of toxic effects was not routinely practised and safety data were limited. Costs of CD4-cell counting and viral-load monitoring were substantial and were supported by an outside agency; the effect of moving this financial burden to the patient or programme, or of expanding antiretroviral programmes to areas without the technical infrastructure to do similar monitoring, is unknown. An operational research agenda is needed to develop and assess simpler, more standardised treatment algorithms, less expensive monitoring technologies and algorithms, monitoring strategies for toxic effects, and strategies to ensure adherence to therapy. This pilot programme showed that AIDS patients in a developing country can be managed successfully with antiretroviral therapy. Promoting access to therapy earlier in the course of the patient's disease, increasing the use of HAART, and finding solutions to reasons for discontinuing therapy would further improve patients' outcome in this setting.[50]

In another study, researchers showed that it is possible to carry out an HIV treatment programme in a poor community in rural Haiti, the poorest country in the western hemisphere. Relying on an already existing tuberculosis-control infrastructure, they were able to provide directly observed therapy for tuberculosis with HAART to about 60 patients with advanced HIV. Inclusion criteria and clinical follow-up were based on basic laboratory data available in rural clinics. They showed that serious side-effects were rare and readily managed by community-health workers and clinic staff.[56]

In Brazil, free and widespread distribution of ARVs through the public-health system continues to be one of the best-known parts of the Brazilian National AIDS Programme. Because of the scale of the epidemic and the vastness of the country, Brazil had many logistical and strategic considerations to deal with. Part of this logistical challenge was to develop a strategy to both distribute and monitor ARVs through the public health system. Key aspects of this strategy included definition of locations at which people could receive drugs, creation of a system to track distribution of drugs, and establishment of a network of laboratories for clinical examinations.[57]

Senegal and Thailand have also successfully implemented ARV programmes. It must be noted however that all these countries have done so with full political commitment by their respective governments. Lange (2002) [58] noted that the main challenges to bringing ARV therapy to severely resource-constrained settings were:

- Lack of political commitment
- Cost
- Lack of infrastructure
- Lack of expertise
- Lack of common agenda and leadership in implementation

Concerns have been raised about beginning ARV programmes without ensuring that the adequate infrastructure is in place. Amongst these concerns are the

problems of toxicity, emergence of drug resistance strains, drug shortages, lack of monitoring and problems with human resources. However, from a review of the literature, it seems that although there are problems associated with embarking upon ARV programmes in developing countries, the benefits of starting such a programme far outweigh the technical and other hitches. The WHO has now formulated guidelines for scaling up ARV therapy in resource-limited settings.[59]

In South Africa, there are many obstacles that need to be overcome. Amongst these are serious shortages of doctors and nurses, huge disparities in different facilities in terms of clinical supplies, laboratory services, cold chain adequacies and in some cases, even fresh water supplies. In spite of this, there have been a few pilot programmes that have been running in different parts of the country. As with results in other developing countries documented above, the results have been good. In the MSF programme in Khayelitsha, Cape Town, after a year of treatment the adverse effects was found to be mild – only 8% of patients required a change in regimen and no deaths were attributed to HAART regimens.[60]

It is the aim of this study to understand what some of the aforementioned obstacles are. The next chapter will examine the research design and methodology used in attempting to do this before discussing the results.

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

Aim of the Study

To understand the obstacles towards the implementation of universal antiretrovirals (ARVs) for HIV positive people in South Africa at a global, national and provincial level.

Objectives of the Study

1. To review the background literature on ARVs, it's benefits and proven efficacies.

2. To review the potential obstacles or opportunities presented by the current negotiations around patent laws and the Trade Related Aspects of Intellectual Property Rights (TRIPS) to the provision of generic ARVs in developing countries.

3. To ascertain the obstacles associated with an ARV roll-out at a national and local (provincial) level.

4. To make known the findings of the above, and, based on these, to draw conclusions on steps that may be taken to overcome some of the problems.

Study Design

The research took the form of an exploratory, qualitative study. Qualitative methodology was chosen because the study, being exploratory, was better suited to an approach that is inductive and allows for a more flexible investigation of the issue. In addition, a qualitative approach allowed the researcher to record the diversity of views and meanings of the different informants.

Study Population

In-depth interviews were conducted with the following role-players.

i. The chief negotiator from the Department of Trade and Industry who is working on negotiations with the World Trade Organisation (WTO),

ii. The Western Cape Provincial Deputy Director of Health (Services and Programmes) from the Provincial Administration, Western Cape who is also an advisor to national government on the issues of HIV/AIDS and a national treatment programme,

iii. A member of staff from the Department of Pharmaceutical Chemistry at the University of the Western Cape who is also the

chairperson of the Medicines Control Council (MCC) and chairperson of the Pharmacy Council.

iv. A member of staff from the Department of Experimental and Clinical Pharmacology at the Nelson R Mandela School of Medicine, University of Natal.

Sampling

Systematic, non-probabilistic sampling or purposeful sampling, was used to identify a sample of key informants to participate in the study. It was decided to interview people within these particular organisations, as these are the major role-players within the national debate. By purposefully selecting a sample of diverse and, what Patton (1987) [61] refers to as information-rich cases, the study attempted to describe the variation in the experiences and views of the key informants.

Data Collection

The key informants were interviewed in no particular order. They were all approached and given an outline of the aims and purposes of the study, after which they were asked whether they were willing to take part in the research. Interviews were held at a place of the informants choosing, and at a time that suited him/her best. All interviews were conducted in English, on a face-to-face basis with two of the informants, via telephone with the other informant and via

emailing of questions with the fourth informant. Permission was requested and granted to record the interviews for the two face-to-face interviews, and notes were taken during the process of the telephone interview. The author of this study conducted all the interviews.

Validity of data

The validity of the findings of social research is an important issue, and is of considerable importance given the popular perception among some scientists that qualitative research is not scientific. By its very nature – this study, in recording the experiences, feelings and opinions of a group of stakeholders about a particular issue at a given point in time – can only claim to offer one view or interpretation of the subject under discussion. The process and outcome of the interviews may also have been influenced by the researcher and the way he interfaced with the key informants.

In order to assess the validity of the findings, the researcher made use of different sorts of triangulation, and contrasted the material drawn from the interviews with information gathered from other sources. The different types of triangulation that were be used include:

- Theoretical triangulation – involves the use of several frames of reference or perspectives in the analysis of the same set of data

- Data triangulation – attempts to gather observations through the use of a variety of sampling strategies to ensure that a theory is tested in more than one way
- Methodological triangulation – the use of two or more methods of data collection procedures within a single study, i.e. the original meaning.

In that way, appropriate checks and balances were used to increase the strength and rigour of the research findings. Other sources of information that were drawn upon included, related journal articles, current and archived newspapers, websites as well as the information from other key informants. Since the topic under study is so topical, there is a wealth of information available from these other sources. Also, the research findings have been fed back to the key informants to see whether they regard the findings as a reasonable account of their experience. The latter is a validation strategy sometimes used in qualitative research.[62]

Data Analysis

The qualitative data that was obtained from the transcripts of the interviews were content analysed[61] to identify coherent themes and patterns that emerged from the course of the interviews. By making use of content analysis, the researcher looked for quotations or observations across the interviews that referred to the same underlying idea, issue or concept.

CHAPTER 4: RESULTS and DISCUSSION

Interviews were conducted with the following role-players.

i. The chief negotiator from the Department of Trade and Industry, Mr Xavier Carim who is working on negotiations with the World Trade Organisation (WTO). He has been coded as the 'DTI informant',

ii. The Western Cape Provincial Deputy Director of Health (Services and Programmes), Dr Fareed Abdullah. He is from the Provincial Administration Western Cape and is also an advisor to national government on the issues of HIV/AIDS and a national treatment programme. He has been coded as the 'DOH informant',

iii. A member of staff from the Department of Pharmaceutical Chemistry at the University of the Western Cape, Professor Peter Eagles. He is also the chairperson of the Medicines Control Council (MCC) and chairperson of the Pharmacy Council. He has been coded as the 'MCC informant',

iv. A member of staff from the Department of Experimental and Clinical Pharmacology at the Nelson R Mandela School of Medicine, University of Natal, Mr Andy Gray. He is also a consultant to the Health Systems Trust. He has been coded as the 'ECP informant'.

4.1 Collaboration at WTO

There does not seem to have been a great deal of consultation between all levels of the Department of Health (DOH), the DTI and civil society, on such an important national and international issue as negotiating the TRIPS agreement at the WTO with specific reference to generics. According to the MCC informant the MCC had no input whatsoever while the DOH informant replied that national government had probably had some representation. The DTI representative replied as follows:

> The Department of Health has a representative in Geneva at the South African Mission. This person liased with DTI's representative there and vice versa over the course of the negotiations. A consultation and feedback mechanism exists.

The ECP was not so convinced that such a mechanism was very effective:

> ...apart from the support Minister Erwin gave then Minister Zuma in the parliamentary debates on Act 90 in 1997, there has been precious little contact between DOH and any other Ministry/Department over medicines access issues. During the Pharmaceutical Manufacturers Association court action the DTI was involved in more classic "business friendly" investigations into the pharmaceutical industry –

> not much emerged until late last year, and action on the ground is still in early stages. Treasury has played an interesting role – not directly in WTO negotiations, but more broadly in terms of access to medicines (and ARV therapy in particular).

This is reinforced by reviewing the literature. None of the literature reviewed, including newspaper articles, websites and departmental documents, has shown any collaboration between these departments in developing a strategy for negotiating the above-mentioned issues.

This collaboration should have been the next logical step after the central role played by the DOH in bringing the court action against the pharmaceutical companies. As has been elaborated upon in the literature review, in April 2001, the government, backed by a number of civil society organisations and activist groups, won a court battle against 39 pharmaceutical companies which were seeking to stop legislation (the Medicines and Related Substances Control Amendment Act of 1997) that would allow the government to make use of parallel importation, compulsory licensing and the use of generic substitutes instead of patented drugs. The South African government argued that its tactics were legal under international patent laws. The pharmaceutical companies, realising that they were in a no-win situation, withdrew their case. The court action was a direct endeavour by the DOH and had the full support not only of civil society but also of all government departments. The DOH should have at

this juncture, having gained the legal high ground, formed a joint working group with DTI to feed into the WTO negotiations.

Should such a working relationship have been present, it would surely have been in the best interests of the DOH to capitalise on this by making their role known to the public. This could undoubtedly have swayed public opinion and strengthened both South Africa's stance at the negotiations as well as endeared the DOH somewhat to its many critics by showing that they were intimately involved in fighting the developed world prejudices. There have been no joint statements either by the respective departmental Ministers on this internationally high profile matter.

This lack of collaboration has thus resulted in the DOH having had to accept the outcome of the negotiations even though it may not be fully to their advantage. Had the DOH been involved, they would surely have offered a much more focussed view of issues related to generics as compared to what seems to be a broad, trade related view espoused by the DTI.

4.2 Different Perspectives on the Outcome of the WTO Negotiations

For the DTI, the outcome of the WTO negotiations have been hailed as an outstanding success:

> From our side, we view it as a victory. It has laid to rest some long outstanding issues (from the Doha Ministerial Conference in 2001).

> The resolution lies essentially, in an agreed chairman's text that gave comfort to the U.S. that the decision would not be abused but without weakening the agreement reached in December. The Chairman's text is a political undertaking (let's not weaken it further!) – that there will be no abuse etc.

As has been elucidated upon in the literature review, this is not the viewpoint of the many different organisations and observers who are concerned about the arduous nature of some aspects of the agreement, such as the bureaucracy involved in having compulsory licences issued. Asked to remark on the concerns of these observers, the DTI informant noted:

> While we understand their concerns, I think they got it wrong. They have complained that the agreement puts in onerous obligations on countries that want to use this agreement because of a series of safeguards built into the agreement. The reality is that we were seeking a solution and navigating a path that addressed decisively our concerns – provision of medicines to countries with insufficient or no manufacturing capacity – while ensuring the integrity of the patent system, which is important, and address the concerns of the US and its pharmaceutical companies.

Making the point in summary, he said:

> The agreement maintains the patent system, addresses concerns about abuse as well as provides a multilateral and legally sound trade solution.

It is not, as has previously been mentioned, everyone that has such an assenting outlook. The ECP informant noted that Doha was an important stride forward but that the final agreement reached was, as seems to be generally accepted, bureaucratic:

> the initial Doha Declaration was a very important step in the right direction, in that in enshrined the idea that public health took precedence over profits. It also identified that the timelines initially negotiated for the TRIPS agreement becoming binding on all member countries of the WTO needed re-thinking – however, the extension to 2016 for Least Developed Countries (LDCs) is of little use if they have no sources of supply. That's why the paragraph 6 issue was so important, and why it became so incredibly difficult to settle before Cancun. The outcome of the paragraph 6 issue was somewhat disappointing, as the process decided upon is lengthy and bureaucratic – unless a country makes a blanket change to its own patent law (as is being tried by Canada).

Paragraph 6 of the Doha Declaration was an instruction by the Ministerial Conference to the Council for TRIPS to find an expeditious solution to the

problem of the difficulties that WTO members with insufficient or no manufacturing capacities in the pharmaceutical sector could face in making use of compulsory licensing under the TRIPS agreement.

It is on this issue that we can begin to see the influence of the US and their multinational pharmaceutical companies on the South African government. Besides the uproar that centred around the Presidents utterances on what has commonly become known as the dissident view, treatment lobbyists have also criticised government for not declaring the pandemic a national emergency. Should it be given emergency status, they argue, it would open many doors to dealing with the pandemic, including the ability to provide generic ARVs via compulsory licensing.

The DOH informant succinctly summed up the U.S. influence on the way the South African government has been dealing with the HIV/AIDS issue when he was asked why the pandemic was not declared a national emergency:

> ...it was basically the WTO. We didn't have the power to do it... We're not strong enough to take them on. Our whole growth policy is dependant on, as the ultra-left would put it, finding acceptability with the Washington consensus.

The complexities of trying to appease different governments as well as different local ministries was emphasised by the ECP informant:

> The Free Trade Agreement negotiations also place stress on this relationship – whereas DOH can see things in a narrow light, DTI has to balance these concerns with the broader ones of agricultural and industrial subsidies and tariffs etc. Australia's negotiations with the US provide an interesting insight into such problems – also those in the Free Trade Agreement Association (FTAA) and involving Singapore.

With the US appeased at the WTO, a deal was struck shortly after the South African government did what was considered a u-turn in their approach, by appointing a task team to draw up a strategic plan for rolling out ARVs in the country.

4.3 Impact on Drug Procurement

Commenting about what the agreement reached at the WTO negotiations meant to government and their drug procurement strategies, the DTI informant responded:

> In a large measure using the new mechanism is a last resort. Thus, South Africa is unlikely to revert to these measures ordinarily. We have some domestic manufacturing capacity. Compulsory licensing is really a last resort. The first step would be to negotiate with the drug companies. There are a number of companies here that have already

been granted voluntary licences. No developing countries have ever had to use compulsory licensing to bring down prices. Also, if you want compulsory licences issued, it is quite a long process. Most drugs that we use can be produced in South Africa, but we cannot be sure of this at all times. We may not have all the ingredients, new strains of diseases may arise, etc. The possibility now exists for us to overcome these problems if the need arises. The mechanism is also now in place to allow for exports within regions. Compulsory licences can now be issued and South African firms, if they have the capacity, can manufacture and export drugs to countries within our region.

It thus seems that the agreement reached really does not have much bearing on South Africa apart from export opportunities. The ECP informant summarised it quite well:

In purely local terms, however, neither Doha nor the pre-Cancun "solution" really has much application to SA. Our own Patents Act is already almost TRIPS plus, and has not been used effectively. However, there are some import-export issues for the Southern African Development Countries (SADC), but some of those countries fall into the LDC camp, and therefore have until 2016 to comply anyway.

Generic medication has been available in South Africa for some time now and has even been insisted upon by certain medical-aid schemes, yet not a single generic ARV can be purchased at present in the country. The MCC are also supportive of the need to make generic drugs available

> I think, you know, its government policy to promote generic use. The Medicines Act Amendment of the 2nd of May makes it in fact obligatory to substitute patent scripts for generic substances, if they are available. The pharmacist is then mandated by law to do that. So from the point of view that he or she has to actually tell the patient that there is a generic available and these are the benefits price-wise.

However the MCC has come under attack from various quarters for different decisions that have been made by them with regards to generic drugs. They have however made it clear that they are not a legislative authority but only a registering one. Their role has been stressed as being one of ensuring public interest on issues of safety and efficacy around new drugs that are to be made available on the South African market. South African law has almost thrown up contradictions between Acts that may prove to become legal precedents in the next few months. On the issue of patents and the Patents Act, the MCC representative was also quite perspicacious:

> When we register a drug we actually give marketing authorisation. Now we've already given permission to a few generics which are still

under patent. But nothing in our Act says we can't do that. So DTI has come to us because of complaints by patent holders... We have taken a legal opinion on this which said we are quite entitled to do this because nowhere in the Medicines Act which governs the MCC, does it say that we can't accept drugs for marketing authorisation that is still under patent. So the onus then rests on the manufacturer to fight the patents battle under the Patents Act with DTI. We said to DTI, well, we're going to continue doing this, as we believe in making ALL generics accessible. ARVs we've got 23 or 24 registered, some of them are still under patent. We've said that if DTI wants to change it then they must negotiate with the public. But we as the MCC take our lead from the Medicines Act and the Medicines Act supersedes any Act when it comes to registering drugs.

It can thus be seen that although a generic drug has been approved as being both safe and effective, and that the MCC in effect has approved its public usage, it is only problems with intellectual property ownership that stands in the way of it being sold at what would probably be a cost of the originator drug.

The dichotomy between the Acts is clearly revealed by the following situation as described by the MCC informant.

There's a section of the Act which says that if you want to apply for registration of a drug, you have got to submit all the all the data but

also, you have you have got to submit the sample. Now in patent law, once you have a sample of something that's patented, there's a legal case to be made that you've counterfeited or that you're doing it contrary to the Patents Act and also the Medicines Act to a certain extent, but I think more the Patents Act because now you've got a sample of something that's not your intellectual property. It belongs to somebody else, but you've submitted this for assessment as your own, and we noted this. We still continue because we still believe it is in the public interest to register as many drugs as possible for whatever complaint – even more so for HIV/AIDS.

4.4 ARV Costs

The broader barriers in making the cheapest drugs available were highlighted by the ECP informant. He was asked if he thought that these generics would be readily available in South Africa soon:

So much depends on what you mean by "readily". Initially, Aspen was hamstrung by agreements with the innovators regarding the markets into which they could sell their versions, once developed and registered (remember, there was no technology transfer at all). Those agreements did vary between innovators – almost nothing stipulated by Bristol Myers Squib (but then it didn't hold one of the key patents itself, and Yale had indicated that it was not to be exercised in Sub-Saharan Africa), most restrictive from Glaxo Smith Kline (GSK), with

> Boehringer Ingelheim (BI) somewhere in between. The Competition Commission decision has seemed to prompt a re-think, with GSK now allowing Aspen to sell into the private sector as well as to export to Sub-Saharan Africa. However, "readily" might read to imply access to a variety of suppliers. Ranbaxy has positioned well with Adcock (as Thembalami) and Cipla is also well poised, but both lack access to licenses – that's the next challenge for government – do they intervene or not?

The entire debate around the ARV issue has centred on the subject of high costs brought about by patents and intellectual property rights. For the last few years, organisations and governments around the world have been trying to overcome developed countries prejudices to bring about cheaper drugs for what has been described as a basic human right – the right to health.

As a consequence of competition, certain drug prices have begun to fall. In explaining what the South African government was doing to take advantage of these developments, the MCC commented as follows:

> Government has decided in its legislation to make international tendering possible. In other words, it's a tool really to drive down prices. Now what can happen, is that government through its tender process can be getting cheap drugs as it is but they could even drive

those prices down more dependent on what is on the international market.

He cited a case in point from Brazil where the generic market has been fully supported by government:

> To quote you another example, in Brazil, particularly with generics, what they've shown is that prices have been driven down to about 20% of the patent product by having lots of generics on the market and promoting competition. Now that's something we haven't done because I think of the skewed pricing between the public acquisition programme and the private acquisition costs. The thinking in the early 90's was that you should get a system in place which promotes generic usage and scientifically supports generics by good evaluation. The idea was that if you could promote this kind of EDL, standard treatment guideline, access to generic drugs – it could carry over into the private sector.

Another point that seems to be raised amongst those in lobbyist groupings is the cost differential between what drugs are available at via the public sector and the private sector. Dispensing doctors and other such entities are now being more fiercely regulated by law says the MCC:

> In South Africa now you have doctor groupings for example buying lots of drugs and selling it to pharmacies. They sell it cheaper than what you can buy it from the actual manufacturer... What they do is they form big societies and they are the negotiating vehicle between the manufacturers and the market and that's the problem really. And so it keeps prices artificially inflated sometimes... So government has been putting into place a pricing committee to actually deliberate on the mark-up. So we've learnt from other countries.

As has been earlier stated in this thesis, the US is itself very guilty of practices which it wants prohibited, controlled or restricted in the rest of the world. The MCC informant noted that:

> Substitution has always taken place in the States – it's always been happening unofficially. They buy what's cheapest for them.

The South African pharmaceutical company Aspen has recently been in the news because they have been the first South African company to be granted voluntary licences by multinational pharmaceuticals to manufacture certain ARVs. Recently there has also been an agreement, the details of which are still very unclear, with the Clinton Foundation. The ECP informant was asked what the conditions of the Aspen deal were:

> The Clinton "deal" makes that all the more important. Regardless, prices have dropped and continue to drift lower. For the first line

> nucleoside reverse transcriptase inhibitors and non-nucleoside reverse transcriptase inhibitors access should not be a problem, but (as Brazil found), access to lower cost protease inhibitor products is going to get more and more important over time.
>
> The conditions of the initial licenses keep changing… The interesting bit is the new Clinton "deal" – it apparently covers not only the prices (lower), but also new raw materials access (now via Matrix, where before Aspen bought from Hetero) and something (as yet not known) about local production (and maybe even export).

Access to lower cost protease inhibitors are an important issue as these patented inhibitors are a necessary component of the combination drugs that need to be produced to ensure easier drug regimens for patients. Increased access to these inhibitors allow for a significant drop in prices of combination ARVs.

The Clinton deal is an agreement between the South African pharmaceutical company Aspen Pharmacare and the US-based Clinton Foundation for the manufacture of ARVs. The Foundation reached an agreement with Aspen and selected other leading multinational generic drug manufacturers on a major reduction in the price of ARVs

The agreement covers ARVs delivered to people in Africa and the Caribbean where the Clinton Foundation is working with governments and organisations to set up countrywide integrated care, treatment and prevention programs.

Under the Clinton Foundation agreement, the price of one of the commonly used triple drug therapy combinations will be available for less than US$140 per person per year - or 36-38 US cents per person per day - a reduction of one- third to one-half in the current price of drugs in the developing world.[63]

In the medium term expenditure framework on HIV/AIDS announced by the Minister of Finance, Trevor Manuel, it is estimated that approximately R12 billion will be directed towards HIV/AIDS over the next three years. The TAC has praised the budget and the deal in a newsletter:

> ...the Minister of Finance clarified that R1.9 billion will be for antiretroviral treatment. Our rough calculations indicate that this is sufficient to rollout a comprehensive treatment programme with the potential to meet TAC's target of at least 200,000 people by March 2005. At the price brokered in the recently announced Clinton Foundation deal with four generic companies of just over R80 per month per patient, the money put aside could cover every person in South Africa requiring antiretroviral treatment in the public sector by 2006.

The DOH representative was asked to comment on the rumour that government has already struck a deal with the pharmaceutical company Aspen to buy ARVs without going out to international tender.

His response was as follows:

> If there is a deal with Aspen, I know nothing about it and I must go further and say that my own opinion is that there is no deal between government and a manufacturer. There is a pecking order of procurement options. The two first choices would be price negotiations with patent holders or local production… I think that the government view is not to have a sole supplier – one generic producer. It is anathema to all our thinking and that I can say with a strength of conviction. Our idea is to have twenty producers with local suppliers with licences and you know beat them down to prices that are so marginal. I mean they must make a few cents on every pill that they sell. And we think that we'll be buying big enough. The second group then is compulsory licences and parallel importation for which we have the legislative framework…

Although government has legislated that international tendering be possible, it does not seem as if this is the option of choice. This was alluded to not only by the DOH informant as documented above but also by the ECP informant who, when asked if he thought that government will source the cheapest possible ARVs via international tender, relied:

> No – I think they'll rely firstly on local registration, since Aspen, Ranbaxy and Cipla already have registered products – what is more

> important is whether or not they'll use the normal tender process (which implies more than 1 potential supplier – which means Ranbaxy and Cipla must get licenses somehow) or negotiate directly with Aspen or the others. International tender still requires a registration step with the MCC, and even fast-track is too slow to make this a viable option. Short-term, I can see section 21 being used to exempt a particular product from registration for a period, rather than using international tender.

An important and telling statement made by the DOH representative was:

> I can tell you that the Treasury is absolutely single-minded to get the lowest prices.

4.5 Infrastructure

The other important theme to arise from the interviews centred very much on the aspect of infrastructure.

One of the main reasons used by the South African government for not instituting an ARV programme has been that the country does not have the adequate infrastructure in place to successfully roll-out such a programme. There has also been much written about the dangers of beginning such a programme without first ensuring that the correct infrastructure exists. Amongst the dangers noted have

been patient non-adherence, patient complications and emergence of drug resistant strains.

The DTI informant certainly seemed to think so:

> The impact of the WTO negotiations has, in some assessments, been overblown. It is important to be able to import drugs when the need arises, but for South Africa this is not the major barrier. It is one aspect of a much more complex set of issues. There are more immediate problems such as health infrastructure, managing the toxicity of these drugs, patient adherence, counselling, etc.

When questioned on whether he thought that the country has the appropriate infrastructure in place to begin an ARV roll-out, the MCC informant replied:

> Well I think it's possible. I don't think it's an insurmountable problem...I've met six of the MEC's (Member of Executive Councils)... and what they've been saying to me is in fact that there should be no reason why you should not get drugs out to the sites...At the end of the day, if there is political will and buy-in and you throw enough resources at it, there's no reason why it shouldn't go as smoothly as possible.

In response to the same question, the ECP informant had a very different view on the issue. He brought up the very important issue of stigma and voluntary counselling and testing (VCT) which is still very much a crucial issue in South Africa and Africa as a whole. The stigma and denial around HIV have resulted in most South Africans regarding HIV to be a problem of other groupings, and therefore very few South Africans see the need to be tested. Asked if the country did have the necessary infrastructure to handle an ARV roll-out, he replied:

> In places yes, in others no. Certainly the urban settings should have the ability to rapidly take on as many as they can identify. How to do that is still a problem – widespread VCT depends on breaking down stigma first, and will miss many suitable cases. A more targeted approach is perhaps needed – e.g. starting with TB patients. However, equity demands that where infrastructure is lacking, this be created in the shortest possible time.

Talking about the Western Cape's infrastructural ability to begin an ARV roll-out, the DOH informant said:

> We can start at 15 sites in the next six months…there are five sites at the moment. We will just expand them and add another ten sites but I've already got doctors for these…The Achilles heel of implementing the service are staffing. And it's about getting the right salaries to attract staff to the primary level, it's about a general shortage of nurses

in the country at the moment and that we haven't been training enough…

We advertised Medical Officer posts at all our hospitals and we didn't get a single application. So we've got a serious problem with medical staff in this country.

He did not seem to believe that there were any other serious infrastructural problems, for the Western Cape at least, aside from staff:

Other problems are security of the drugs, buying them at the right prices, getting them distributed in the minimum time. We certainly are upbeat though…

I think counselling is not a problem and in the first two years we'll get good adherence.

The other problem would be to get the drugs into the remote areas and getting a good uptake. Absolutely top of the list however would be staff.

The human resource problem was further emphasised by the ECP informant who noted that:

The rate-limiting step is probably staff – well-trained, competent, sensitive to stigma issues, with high morale. Thereafter, lab facilities. Infrastructural deficits are primarily in personnel, with some degree of

> lab equipment/transport problems – but without the right staff in the right place this could be a mess. That is also what could impact very negatively on overall quality of care if not properly managed.

When asked how it was intended to deal with the staff problem, the informant replied:

> What I'm looking at is a whole comprehensive strategy. From the creation of posts through to be able to attract doctors and nurses at a slightly higher salary. The key is…at the fifteen sites, for every doctor we employ for the ARV programme, we will employ another doctor for the general outpatients.

Asked what he thought could be done to overcome what seemed like the major obstacle of staff, the ECP informant observed that:

> Firstly, sufficient resources, then operation planning – devoting the right staff to doing this right the first time. Then massive re-training of staff, while actually doing the roll-out. Can't be delayed.

Human resources constitute a critical component of the health system and account for almost two-thirds of the national health care budget. Problems in human resource development in South Africa include:[64]

- Maldistribution of personnel

- Insufficient and inappropriate training and education
- The dearth of skills in health management

Expertise of health care providers is important when providing ARVs. Studies in settings where combination ARV therapy is widely available show that doctors with expertise and experience in treating HIV deliver more effective HAART. Health care workers in SA have not however, been exposed to ARVs in their training.[42]

While the detail of the operational plan for the national ARV roll-out has been a tightly guarded secret, insiders close to the task team say it proposes that each health district in the country should have a "service point" to deliver ARV drugs. This means that initially there will be 56 service points countrywide. These will be centred at hospitals, but may also include the clinics that the selected hospital serves. Metropolitan areas, which each count as a health district, are likely to be permitted to have more than one service point. According to the current proposal, doctors will be in charge of the plan. They will assess patients, prescribe the ARV drugs and check on patients every three months. However, patients will be expected to come to their service centre every month, where nurses will check their progress and drug adherence.[65]

The plan thus seems to be district-based, doctor-driven and nurse monitored, emphasising the role of staff and appropriate training.

In the Chapter Human Resource Development of the SAHR 2002[66], Lehman and Sanders clearly spell out the problems afflicting personnel in the health services in general.

Drawing from the draft national health bill, they point out the Minister's responsibilities on the regulations governing human resource development within the national health system as follows:

a. Ensure the availability of adequate resources for the education and training of health care providers and health workers to meet the human resource requirements of the national health system

b. Ensure the education and training of health care providers and health workers at all levels in accordance with recognised norms and standards in order to meet the requirements of the national health system

c. Prescribe new categories of health workers and health care providers to be created, educated or trained

d. Identify shortages of key skills, expertise and competencies within the national health system and prescribe strategies for recruitment of health care providers or health workers from other countries or strategies for the education and training of health care providers or health workers in the Republic of South Africa in order to make up the deficit in respect of scarce skills, expertise and competencies: provided that such strategies are not in conflict with the provisions of the Higher Education Act

e. Prescribe strategies for the recruitment and retention of health workers and health care providers within the national health system

f. Prescribe circumstances in which health workers and health care providers may be recruited from other countries to be employed as such, or to deliver health services, within the Republic of South Africa.

Every one of the above points is directly linked to human resource requirements for the proposed ARV roll-out. Resources, training, recruitment and, of vital consequence, staff retention, are all unequivocally coupled to an expansion of the health services as would occur with the roll-out.

They also emphasised the critical issues of management and support:

> Management and support are crucially important to health personnel performance: good support and able management (including planning and supervision) will vastly improve work satisfaction and ability to function productively, while lack of management and support contribute substantially to low productivity and demotivation and lead to what can be termed 'transformation fatigue' among health personnel.

There has been a further dilemma to medical staff as has been earlier alluded to by the DOH informant, i.e. shortages of staff due to migration or what has become colloquialised as "the brain drain". Doctors and nurses have been leaving South Africa in droves for what they claim to be better paying and less stressful jobs coupled with better working conditions in developed countries, where they are being welcomed because of their high standards of training. Lehman and Sanders (2002)[66] noted that:

> Many posts, particularly in rural facilities, cannot be filled because of a lack of applications. This sets up a vicious cycle, which is accelerated by the impact of HIV/AIDS, as remaining staff become increasingly overburdened, burn out and eventually may also leave.

It is thus apparent that the retention of present staff as well as offering attractive packages to attract new staff should become a core area of focus for the DOH. Management and support issues as well as working conditions should also be reviewed. With specific regards to HIV/AIDS, Lehman and Sanders (2002)[66] further stated that:

> In the area of HIV/AIDS a comprehensive human resource plan is needed which projects staffing, capacity and training needs in the light of morbidity, mortality and attrition rates within the health sector,

increased disease burdens and the likely development of treatment strategies such as PMTCT (prevention of mother-to-child transmission) and ARV treatment.

In making a submission to the national task team charged with developing treatment options to supplement comprehensive care for HIV/AIDS in the public sector, the Health Systems Trust has recommended amongst others, the following human resource issues:[67]

- Training curricula of medical schools and nursing colleges to be revised to incorporate management of HIV and AIDS, including VCT, PMTCT, ART, Opportunistic Infections and Post-exposure prophylaxis, etc.,
- Development (& communication) of updated clinical management guidelines as need arises
- Long-term: Need for a strategy for recruitment, training and retention of personnel particularly in under-resourced areas to underpin the health system
- Explore the role of Public-Private-Partnerships in harnessing human resources (GPs in the private sector) for improved service provision in underserved areas
- Explore the possibility of training professional nurses to initiate and monitor ART

4.6 Drug Resistance

An issue related to adherence and subsequent resistant strains is the manner in which patients are initially dealt with by staff. The success of this initial contact is a direct indication of how staff have been trained.

The Western Cape, it seems, is infrastructurally ready to begin the ARV roll out immediately. They do not perceive adherence and drug resistance to be major obstacles. Yet these two issues continue to be raised as warning flags by others.

The MCC informant was asked to comment on the issues of patient adherence and drug resistance:

> It is difficult to equate resistance to extending somebody's life you know. If she lives for another six months, can you really equate that to the money spent or potential resistance? If the drugs are partly responsible for bringing joy – as much as one can enjoy life…
>
> At the end of the day if you just take enough care clinically to make sure who gets access to the drugs and if you can put in sort of compliance measurements – which are tremendously difficult – I mean, these are drugs that chop you up systematically…we know from other orthodox medicines, if you get 40% compliance it's wonderful… and that's just on your chronic medication for hypertension and diabetes.

If you think of this and all the accompanying problems of nutrition and socio-economic problems and toxicity and side effects and adverse effects, I'll be very surprised if you going to get compliance, but it's just a gut feeling... but so what...I still think you can't equate the extension of life to money. If you can afford it as a country, which I think we can, then my approach is we all got to do our bit to ensure we have access to drugs.

4.7 Current Programmes

There are at present, as has been cited earlier in this thesis, a few sites at which ARVs are currently being administered in South Africa. These sites are mainly run by private organisations and academic departments. The ECP informant was asked to comment on what the situation was at these sites at present:

> They're small-scale and thus easier to manage – they're also very dependent on highly motivated individuals – e.g. the MSF crew in Cape Town, or the academics in Cape Town, Durban and Johannesburg. The results achieved are important though, as they've shown what can be done and what is necessary. They've also taught us a lot about the emergence of resistance (lower than perhaps expected) and compliance (higher than expected), and informed the choice of 1st and 2nd line agents for the national plan.

Asked to elaborate on what the problems are that have been experienced at these sites, he again brought up the imperative issue of stigma and counselling:

> Stigma. Initially a low VCT take-up. Access to medicines at low cost over time – having to negotiate MCC bureaucracy and deal with suppliers that are not in the country, through intermediaries. Training local staff.

The all-important issue of political-will that has fed this debate locally was also brought up by the ECP informant. He was asked what he thought were other obstacles to a successful ARV roll-out:

> …there's also the obstacle of accepting that access won't happen everywhere at the same pace, and not using that as an excuse to slow everywhere down.
>
> …and one of the biggest is still political will and the ability to deal with this soberly and without emotion and party-politicking – impossible in an election year!

CHAPTER 5: LIMITATIONS and CONCLUSION

The major limitation to this study was the fact that the topic was so dynamic. As events unfolded on a daily basis, it led to many changes in the status of issues that were being written about. At the end, it was going to be impossible to have everything as up to date as possible and so; it is possible that some of the facts that have been included in this thesis have since changed. More importantly, the task team report on the operational plan for universal ARV roll-out in South Africa was due for cabinet deliberation and public consumption in the very week that this thesis was due. This operational plan would have very much influenced the thesis had it been released before, and so it is important to remember when reading this thesis, that it was written before the report was made public.

A further limitation was that the interviews with the key informants were more problematic than anticipated. Excepting for the interview with the MCC informant, the other interviews all came with their own sets of problems. The DOH informant could only give me a limited amount of time. Thus all questions could not be put to him for comment. The same problem arose with the DTI informant. This interview was further complicated because it had to be done via telephone as the informant was in Pretoria while I was in Cape Town. The interview with the ECP informant who was in Durban was done via email. The TAC was approached and agreed to partake in the study. Questions were then emailed to them for comment. However, after frequent appeals, these were never

answered. The input of this organisation which leads the fight for universal ARV access would no doubt have been extremely beneficial to this thesis.

An additional limitation to this study was that an informant from an already existing ARV programme such as that of the Médecins sans Frontières was not interviewed for their input. However, all the literature on reports from these programmes, were indicative of positive results. The main issue that was raised by all these programmes were costs of the ARV drugs.

In the final analysis, it must be noted that because the ARV roll-out will be done on such a large scale, there will no doubt be problems. However it seems very clear that these obstacles are not insuperable. The literature review and interviews seem to concur that the two major hurdles are those of cheaper drugs and human resources.

The obstacle of cheaper drugs seems to be sorting itself out as new deals are being brokered on a regular basis (with the assistance of international organisations such as the Clinton Foundation) to make ARVs as affordable as possible. All ARV drugs should be acquired from the cheapest possible source. The South African government should put out international tenders for the supply of these drugs. Where necessary, voluntary and compulsory licences should be issued by the DTI as the hard fought for mechanisms now exist for this to occur. Also, countries such as Brazil, which have a history of success using generic ARVs, should be consulted for advice.

It is imperative to the success of the programme that there be an uninterrupted, sustained and reliable supply of these ARVs. The deals that are negotiated with suppliers must not only be clear about ensuring that these companies will provide the uninterrupted supply of the necessary stocks as required, but, should also have built-in mechanisms for allowing sourcing from more than one supplier, as well as renegotiation of prices as international prices decrease.

Government also needs to put into place a detailed logistical plan of how these ARVs will be distributed to all sites within the programme. Distribution and supply are the backbones to ensuring that all patients receive their medication and take them as instructed without breaks or changes in regimens, so that drug resistance can be further avoided.

On the issue of human resources, the DOH has a significant problem to deal with. There already exists a problem of under staffed clinics and hospitals, and a major programme like the ARV roll-out will surely only add to the crisis. There is no doubt that new staff will need to be employed and, along with existing staff, they will need to be trained. The human resource problem (doctors, nurses and counselling staff in particular), needs to be addressed as a matter of national urgency. This needs to be looked at in the broader context of finances, patient loads at the different sites, job freezes, etc. Doctors and nurses have to be enticed to remain in their positions or to take up posts at outlying sites. It may be a good

idea to use the community service programmes of newly qualified doctors to staff those centres where no doctors for this programme are present.

The strain on the National Health Laboratory Services (NHLS) will undoubtedly increase. It is recommended that clinical monitoring of HAART should be investigated to reduce dependence on laboratory tests. Again, lessons on how best to do this should be learnt from countries that have already developed these systems.

Laboratory tests done to determine CD4 cell counts for patient selection may also pose dilemmas. An issue that was never raised by any of the informants was the selection of patients for ARV treatment. This could be an important ethical dilemma if no clear rules are laid down. It is recommended that the criteria for patient selection is very carefully thought out, discussed and agreed on with civil society stakeholders and then properly communicated with the doctors, nurses and counselling staff at sites where ARVs are to be administered.

No health system in the world makes optimal use of existing infrastructure and capacity to deliver treatment for people living with HIV/AIDS. The fact that more capacity is needed cannot be used as an excuse for inaction. Existing health services can be effectively utilized as a basis for the rapid implementation of HIV treatment programmes. This includes using antenatal, child health, sexually transmitted infections and tuberculosis services as key entry points for HIV treatment and care in addition to traditional hospital services, and ensuring that

programmes to prevent mother-to-child transmission address the treatment needs of women and their families as well.[68] By doing this it is hoped that all these other services will be strengthened by the resources – financial, human and other – being ploughed into the ARV programme. The thinking is that ARVs will significantly reduce the incidence of opportunistic infections and susceptibility to other major diseases, such as tuberculosis. As morbidity and mortality are reduced, significant staff time and resources now devoted to caring for terminally ill patients will be freed up.

Conversely, it is very possible that the ARV programme may further fragment the health services by putting further strain on an already over-burdened system. The question of human resources would be the primary driving issue in causing this fragmentation to occur. Doctors and nurses who are currently unhappy in their location in outlying areas will no doubt look for new positions within the ARV to programme to move to better paying jobs in the bigger cities. Such a repositioning of staff, without proper replacements, would cause further inequities within the health services, especially as more patients enter the system looking for access to the ARV programme.

For South Africa, the ARV programme has many benefits. Over the past few years, a fast-growing body of research is linking investments in health directly to economic growth. It shows that a healthy population is as much a prerequisite for growth as a result of it. The report of the WHO Commission on Macroeconomics and Health (WHO 2001)[69] showed that disease is a drain on societies, and states

that improving people's health may be the single most important determinant of development in Africa. That is why the response to HIV/AIDS, including HIV treatments, needs to be at the core of public policy, poverty reduction strategies, action for sustainable development and the preservation of human security.[68]

Access to treatment will revitalize communities ravaged by disease, prevent households from disintegrating and enable workers to stay productive. Keeping parents alive will secure the education and welfare of future generations. Above all, the effects of treatment will reduce stigma and discrimination, enabling societies to emerge from the shadow of fear and address HIV/AIDS more openly.

> "Treatment is technically feasible in every part of the world. Even the lack of infrastructure is not an excuse – I don't know a single place in the world where the real reason AIDS treatment is unavailable is that the health infrastructure has exhausted its capacity to deliver it. It's not knowledge that's the barrier. It's political will."
>
> (Dr Peter Piot, Executive Director, Joint United Nations Programme on AIDS, Barcelona, July 2002)

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