

PATIENT DEFAULT RISK AS A BARRIER FOR ACHIEVING ORGANISATIONAL EXCELLENCE

by

Leanne Cawood

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Supervisor: Prof. R.A. Lotriet

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We make a living by what we get

We make a live by what we give...

ABSTRACT

HIV/AIDS is the world's most urgent public health challenge. It is the leading cause of death for young adults worldwide. There is as yet no vaccine and no cure. The high unemployment rate and poverty experienced in South Africa contribute to the high HIV/AIDS infection levels experienced in the country. With the vast majority of HIV/AIDS cases and the growth in the number of people infected who will look towards publicly funded hospitals for medical care, the financial strain on government hospitals and pharmacies will be severe, not only as a result of the sheer number of people seeking healthcare, but also because healthcare for HIV/AIDS patients is more expensive than for most other conditions.

Antiretroviral treatment is the main type of treatment for HIV/AIDS. It is not a cure, but it can stop people from becoming ill for many years. The treatment consists of drugs that have to be taken every day for the rest of a patient's life. Antiretroviral treatment has complex and rigorous dosing requirements. The aim of antiretroviral treatment is to keep the amount of HIV/AIDS in the body at a low level. This stops any weakening of the immune system and allows it to recover from any damage that HIV/AIDS might have caused already.

Medication compliance means taking the medications exactly as prescribed by the doctor for the amount of time intended. Medication noncompliance, on the other hand, means taking medications in any way other than what the doctor prescribed. While noncompliance may not seem like a big deal, it can have serious consequences. The challenge of optimizing adherence to anti-retroviral treatment remains paramount in the treatment of HIV/AIDS.

The purpose of this study is to establish the cost of a patient defaulting anti-retroviral treatment per month, and to determine the financial and economic impact that defaulting patients has on General de la Rey and Thusong Hospital Complex Pharmacies. The study further aims to prove that the risk of patient defaulting is a barrier to achieve organisational excellence through healthcare delivery.

While delivering patient care has always been a primary goal of healthcare organisations, financial outcomes have long been the metric by which success has been measured. Increasingly, however, healthcare leaders are being held accountable for both medical and financial outcomes.

The information gathered by means of scientific methods indicated that patient defaulting adversely affect the financial outcome of the pharmacy and the hospital. Patient defaulting wastes antiretroviral commodities, and the funds could be much better utilized in other areas of the fight against HIV/AIDS. As a result, it is crucial that healthcare executives and providers increase patient compliance as it is diagnosed through this study as one of the issues and barriers to achieving organisational excellence through healthcare delivery.

This knowledge will help identify strategies to improve patient adherence and drug compliance to antiretroviral treatment. Improved patient compliance will improve the quality of life of patients, decrease mortality rates and improve the economic situation of South Africa. Based on the findings of this study, practical suggestions are made, aimed at enhancing patient compliance to antiretroviral medication, and achieving organisational excellence through healthcare delivery.

Key words: HIV/AIDS, patient defaulting, patient compliance, organisational excellence, anti-retroviral treatment

OPSOMMING

HIV/VIGS is die wêreld se grootste publieke gesondheidsuitdaging, en is die hooforsaak van sterftes onder jong volwassenes wêreldwyd. Tot dusver is daar geen vaksiene of geneesmiddel wat die kondisie volkome kan genees nie. Die hoë vlakke van werkloosheid en armoede in Suid-Afrika dra by tot die stygende getalle van HIV/VIGS. Die verhoging in HIV/VIGS-gevalle en die stygende getal van HIV/VIGS-geïnfekteerde persone wat na publieke hospitale stroom vir mediese behandeling, plaas meer finansiële druk op staatshospitale en -apteke. Die koste verbonde om HIV/VIGS-pasiënte te behandel is hoër as die meeste ander siektetoestande se behandeling.

Die kernbehandeling van HIV/VIGS is antiretrovirale middels. Die antiretrovirale middels genees nie HIV/VIGS volkome nie, maar verleng die lewensduur en lewenskwaliteit van HIV/VIGS-pasiënte. Die behandeling bestaan uit medikasie wat elke dag geneem moet word vir die res van die HIV/VIGS-pasiënt se lewe. Antiretrovirale middels het streng en ingewikkelde doseringsintervalle. Die doel van antiretrovirale behandeling is om die hoeveelheid HIV/VIGS in die liggaam so laag as moontlik te hou. Dit voorkom die verswakking van die immuunstelsel en stel die immuunsisteem in staat om te kan herstel van enige skade wat aangerig is deur HIV/VIGS.

Pasiënt-insiklikheid beteken om die medikasie presies soos voorgeskryf deur die gesondheidswerker te neem. Om te voldoen aan antiretrovirale behandelingsvereistes, moet die medikasie presies soos voorgeskryf geneem word op spesifieke tye en in sekere hoeveelhede. As die antiretrovirale medikasie op enige ander manier geneem word as wat deur die gesondheidswerker voorgeskryf is, voldoen die pasiënt nie aan die vereistes van die behandeling nie, en die pasiënt versuim dan antiretrovirale behandeling. Alhoewel dit nie so belangrik blyk om te voldoen aan die vereistes van antiretrovirale middels en pasiënt-insiklikheid te bereik nie, het pasiënt-versuim van antiretrovirale middels ernstige nagevolge. Die

uitdaging om pasiënt-inskiklikheid van antiretrovirale middels te verhoog is van kardinale belang in die behandeling van HIV/VIGS.

Die doel van die studie is om vas te stel wat die koste van pasiënt-versuim van antiretrovirale middels per maand is, en om die finansiële- en ekonomiese impak van pasiënt-versuim van antiretrovirale middels op Generaal de la Rey en Thusong hospitaalkompleks-afteke te bepaal. Die studie wil ook bewys dat pasiënt-versuim van antiretrovirale middels 'n organisasie verhoed om organisasie-uitnemendheid te bereik deur gesondheidsdienslewering.

Die lewering van kwaliteitpasiëntersorg is die primêre doel van gesondheidsorg-organisasies, maar finansiële resultate dien as 'n basis om sukses te bepaal. Leiers in gesondheidsdienste word verantwoordelik gehou vir mediese- en finansiële resultate.

Inligting wat bekom is deur wetenskaplike metodes dui daarop dat pasiënt-versuim van antiretrovirale medikasie 'n negatiewe effek op die finansiële resultate van die afteke en hospitaal het. Pasiënt-versuim van antiretrovirale middels mors geld wat beskikbaar gestel word vir antiretrovirale middels en kan beter gebruik word vir die stryd teen HIV/VIGS. As gevolg hiervan is dit belangrik dat gesondheidsorgbestuurders en -verskaffers van gesondheidsdienste dit as van kardinale belang beskou om pasiënt-inskiklikheid te verbeter, want deur die studie is dit duidelik dat pasiënt-versuim 'n groot struikelblok is om organisasie-uitnemendheid in gesondheidsdienslewering te bereik.

Die kennis en inligting van die studie help om strategieë te identifiseer om pasiënt-inskiklikheid te verbeter. Verhoogde pasiënt-inskiklikheid sal die lewenskwaliteit van pasiënte verbeter en die mortaliteitsyfer van pasiënte verlaag. Dit sal ook 'n positiewe uitwerking op die finansiële toestand van die afteek en hospitaal hê.

Praktiese oplossings gebaseer op die bevindinge van die studie sal gemaak word om pasiënt-inskiklikheid te verbeter en sodoende organisasie-uitnemendheid in gesondheidsorg te bereik.

Sleutelbegrippe: HIV/VIGS, pasiënt-inskiklikheid, pasiënt-versuim, organisasie-uitnemendheid, antiretrovirale behandeling

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ACRONYMS

3TC	Lamivudine
AFSA	AIDS Foundation South Africa
AIDS	Acquired Immunodeficiency Syndrome
ALT	Alanine Aminotransferase
ART	Antiretroviral treatment
ARV	Antiretroviral
AZT	Zidovudine
BER	Bureau for Economic Research
CDC	Centre for Disease Control and Prevention
CDG	Care Dependency Grant
CHG	Commission on HIV/AIDS Governance
CHW	Community Health Workers
CMV	Cytomegola Virus
CSG	Child Support Grant
d4T	Stavudine
DBSA	Development Bank of South Africa
ddI	Didanosine
DG	Disability Grant
DHER	District Health Expenditure Reviews
DHIS	District Health Information System
DSD	Department of Social Development
EFV	Efavirenz
EHS	Environmental Health Service
EIP	Environmental Implementation
EPWP	Expanded Public Works Programme
FBC	Full Blood Count
FCG	Financial Consultant Group
FCG	Foster Child Grant
FTE	Full Time Equivalent
GDP	Gross Domestic Product
GGP	Gross Geographic Product

HAART	Highly Active Antiretroviral Therapy
HIV	Human Immunodeficiency Virus
HSRC	Human Science Research Council
IDU	Intravenous Drug Use
ILO	International Labour Organisation
JHTTT	Joint Health and Treasury Task Team
KS	Kapos's Sarcoma
LPV/r	Lopinavir/ritonavir
M&E	Monitoring and Evaluation
MSH	Management Sciences for Health
MTCT	Mother to Child Transmission
MTEF	Medium Term Expenditure Framework
NACC	National AIDS Control Council
NGO	Non Government Organisation
NNRTIs	Non-Nucleoside Reverse Transcriptase Inhibitors
NRTIs	Nucleoside Reverse Transcriptase Inhibitors
NSP	National Strategic Plan
NVP	Nevirapine
NWP	North West province
OI	Opportunistic infection
OPD	Out-patient Department
OVC	Orphan and Vulnerable Children
PCP	Pneumocystis Jirovecii Pneumoni
PEP	Post Exposure Prophylaxis
PEPAR	President's Emergency Plan for AIDS Relief
PHC	Primary Healthcare
PI	Protease Inhibitors
PMT	Pharmaceutical Management Training
PMTCT	Preventing Mother to Child Transmission
RNA	Ribonucleic acid - HIV genetic material
RPM Plus	Rational Pharmaceutical Management Plus
RX	Script
SANAC	South African National AIDS Council
SARPN	South African Regional Poverty Network

SASSA	South African Social Security Agency
SOAP	State Old Age Pension
STD	Sexually Transmitted Diseases
STI	Sexually Transmitted Diseases/Infections
TB	Tuberculosis
TG	Triglyceride
UNAIDS	United Nations and Aid
UNDP	United Nations Development Programme
USAID	United State Agency International Development
VCT	Voluntary Counselling and Testing
WHO	World Health Organization

CHAPTER 1

NATURE AND SCOPE OR THE STUDY

1.1 INTRODUCTION

The world has reached a crucial moment in the history of HIV/AIDS, and now it has an unprecedented opportunity to alter its course. The most important message of the World Health Report (WHO, 2004) is that, today the international community has the chance to change the history of health for generations to come and open the door to better health for all. Tackling HIV/AIDS is the world's most urgent public health challenge. Unknown barely a quarter of a century ago, it is now the leading cause of death for young adults worldwide. More than 20 million people have died from it and an estimated 34 - 46 million others are now infected with the virus. There is as yet no vaccine and no cure. Until now, treatment has been the most neglected element in most developing countries: almost six million people in these countries will die in the near future if they do not receive treatment, but only about 400 000 of them were receiving it in 2003.

During the last two decades, the HIV/AIDS pandemic has entered the global community's consciousness as an incomprehensible calamity. According to the National Strategic Plan (NSP) (2007), HIV/AIDS has already taken a terrible human toll, laying claim to millions of lives, inflicting pain and grief, causing fear and uncertainty, and threatening economic devastation. The impact of the epidemic on the economy is already being felt in most countries. Life expectancy has been significantly reduced as many people in the 15 - 49 age group are now dying of AIDS.

Many countries like South Africa have taken urgent steps to curb the epidemic with varying degrees of success. Recent estimates suggest that of all people living with HIV/AIDS in the world, six out of every ten men, eight out of every ten women, and *nine out of every ten children are in sub-Saharan Africa*. These figures provide sufficient evidence to make HIV/AIDS both a regional and a national priority. In

South Africa, despite our efforts, the HIV/AIDS infection rate has increased significantly over the past five years. The increase in the infection rate calls for a renewed commitment from all South Africans.

In healthcare delivery, achieving organisational excellence will be to improve service delivery and clinical outcomes, focus institutional capabilities and offerings, and enhance financial performance. Today's healthcare executives are challenged to maintain the highest possible standards in care delivery while keeping costs under control. In this study patient defaulting was identified as an organisational issue and barrier for achieving organisational excellence. To develop a strategy for improving patient compliance will be key to achieve organisational excellence.

"Drugs don't work in patients who don't take them," said former U.S. Surgeon General C. Everett Koop (Anon., 2008h). This statement seems obvious enough; yet, medication noncompliance remains a major problem in healthcare today. Medication compliance means taking your medications exactly as prescribed by your doctor for the amount of time intended. This includes filling and refilling prescriptions at the right time, taking every dose correctly and on time, and taking medications for as long as prescribed. Medication noncompliance, on the other hand, means taking your medications in any way other than what your doctor prescribed. While noncompliance may not seem like a big deal, it can have serious consequences. The challenge of optimizing adherence to anti-retroviral treatment remains paramount in the treatment of HIV.

A study done by Natrass (2004:84-89) illustrated how destitution as a result of a combination of HIV/AIDS, high poverty and unemployment rates can lead people to behave in ways that they would not adopt in more favourable conditions. The findings of the study suggest that the high unemployment rates and poverty experienced in South Africa contributes to the high HIV/AIDS infection levels experienced in this country. This study showed how people might refrain from taking antiretroviral treatment to remain eligible for the disability grant, since HIV/AIDS infected people have to be ailing or disabled to qualify for the grant and their intake of treatment poses a threat to eligibility, due to the positive effect it tends to have on the individual's health (Tladi, 2006:369).

There is a need for intensive treatment counselling for patients to understand the importance of completing their medication. To reach this successfully, we need co-operation of individuals, families and communities as well as a trained and accessible health workforce. HIV patients as well as their families should be urged to comply with treatment requirements as part of assisting in the fight against HIV, which includes protecting others from any possible infection (Khumalo, 2008). Only by improving patient compliance can organisational excellence through healthcare delivery be reached.

1.2 PROBLEM STATEMENT

Medication noncompliance remains a major problem in healthcare today. While noncompliance may not seem like a big deal, it can have serious consequences. The challenge of optimizing adherence to anti-retroviral treatment remains paramount in the treatment of HIV. Patient adherence to ART is needed to suppress plasma HIV, to prevent drug resistance, control disease progression, and prevent transmission of drug-resistant HIV, according to Mohr *et al.* (2000:21), and Currier *et al.* (1999:1100).

With the vast majority of HIV/AIDS cases and the growth in the number of people infected that will look towards publicly funded hospitals for medical care, the financial strain on government hospitals and pharmacies will be severe, not only as a result of the sheer number of people seeking health-care, but also because healthcare for AIDS patients is more expensive than for most other conditions.

The Department of Health is committed to the fight against HIV/AIDS, and has implemented different programmes to try combating the disease. But patients defaulting expensive ART treatment is still a barrier to achieve organisational excellence in healthcare delivery.

1.3 OBJECTIVES OF THE STUDY

The objectives of the study comprise primary objectives and secondary objectives.

1.3.1 Primary objective

The primary objective of this study is to establish the cost of a patient defaulting antiretroviral treatment per month, and to determine the financial and economic impact that defaulting patients have on General de la Rey and Thusong Hospital Complex Pharmacies. The study further aims to prove that the risk of patient defaulting is a barrier to achieve organisational excellence through healthcare delivery.

1.3.2 Secondary objectives

The secondary objectives of the study are to determine the cost of patient defaulting anti-retroviral treatment in order to receive social grants because of severe poverty in the rural community, and the further financial impact that this has on the hospital complex. How can existing processes and patient counselling be made more effective and efficient and how can service delivery of the pharmacies be improved to achieve the highest quality of service delivery while keeping cost under control.

1.3.3 Core questions in the study

Some of the core questions arising during the study were the following:

- What is the cost of antiretroviral treatment (ART) per patient;
- What are the human resource requirements;
- How does the increase in the number of patients affect the pharmacy;
- What are the costs of prevention efforts, patient training and counselling;
- What are the situations concerning the environment of patients, their skills, education and employment;
- What are the demographics of the pharmacy patients – do they live in a rural area, does high poverty prevail, is the population poor;

- What is the effect of HIV on economically active members of the family; and
- What is the default risk of patients?

The goal of this study was to identify any performance gaps or opportunities for improvement. Patient defaulting risk remains a barrier to achieve organisational excellence through healthcare delivery. Improving patient compliance, controlling the wastage of ART related commodities, responding adequately and promptly to the constant changes in the ART programmes, and promoting rational use of HIV/AIDS related commodities will ensure access to a constant supply of high quality, efficacious ARV medicines and related health commodities at the lowest cost, achieving both service delivery excellence and financial success.

1.3.4 Significance of the study

Patient defaulting and non-compliance of ART medication are just one of the reasons why organisational excellence is not achieved. It was important to find out why people do not take medication, or why they take their medication incorrectly. This knowledge helped to identify strategies to improve patient adherence and drug-compliance to antiretroviral treatment. Improved patient compliance will improve the quality of life of patients, and decrease mortality rates.

1.4 RESEARCH METHODOLOGY

In this study, two techniques were applied in the execution of the research.

1.4.1 Literature study

In the first instance, a broad literature study was undertaken to determine what HIV/AIDS is and to gain insight into the factors that influence the economy. The literature research was conducted through the utilization of the Internet, published books, journals, articles and previous studies conducted in the specific field of

economy and the impact of HIV/AIDS. The knowledge obtained through the literature formed the basis to evaluate the present effect that HIV/AIDS has on the General de la Rey and Thusong Hospital Complex Pharmaceutical Services. Specific conclusions were formulated from the evaluation, and recommendations made to improve the present HIV/AIDS situation and prevention efforts of the General de la Rey and Thusong Hospital Complex Pharmaceutical Services.

1.4.2 Empirical study

Secondly, an empirical study was undertaken. A predetermined questionnaire in English and Setswana was supplied to participants of the study. All participants were ensured of confidentiality, and participation in the survey remained anonymous. The purpose of the empirical study was to gather information on the knowledge of participants about their anti-retroviral treatment, and on their thoughts and feelings surrounding HIV. The questionnaire formed the basis to determine what information is required to be able to evaluate the current HIV/AIDS situation in the pharmacies, and identify barriers in achieving organisational excellence. The goals of the empirical research were to critically evaluate the current financial and economic impact of HIV/AIDS on the General de la Rey and Thusong Hospital Complex Pharmaceutical Services.

1.5 SCOPE OF THE STUDY

The study was undertaken in the North West province Department of Health. More specifically, the study concentrated on Ditsobotla sub-district and Ngaka Modiri Molema district (central) in the North West province, and focused on General de la Rey and Thusong Hospital Complex Pharmaceutical Services. There are two pharmacies: one situated at Thusong Hospital, and the other pharmacy situated at General de la Rey Hospital. Both pharmacies have their own budget, but report to the same management team.

The Hospital Complex comprises 200 active beds at Thusong Hospital and 41 at General de la Rey Hospital. Clinical staff renders level one health services at both

centres, which are 23 km apart on the main road to Mafikeng. Thusong Hospital is mainly surrounded by farms and is a safe environment.

1.5.1 Profile of the North West province

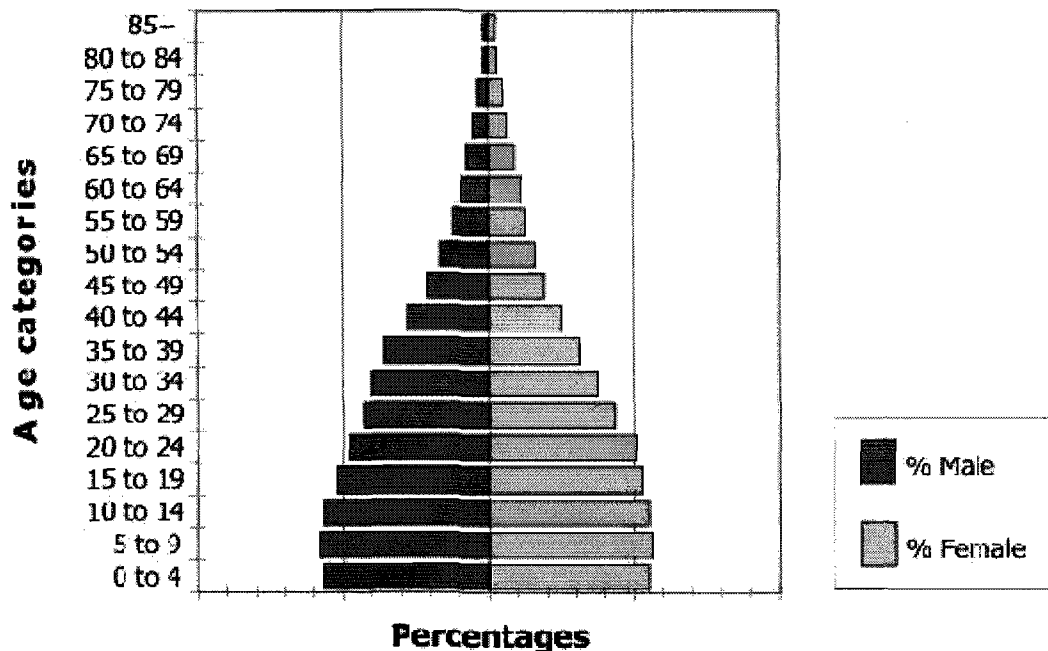
The North West province, with approximately 3,4 million people is the sixth most populated province in South Africa. Some 3,1 million people are of African descent (91,2 percent), while whites make up 6,6 percent, coloureds 1,4 percent and Asians 0,3 percent. The male-female ratios are 49,2 percent and 50,8 percent respectively. The province is predominantly rural, with 65,1 percent living in rural areas and 34,9 percent in urban areas. This is in contrast to the national trends of 46,3 percent and 53,7 percent for rural and urban figures respectively. However, the rate of urbanization is increasing, largely due to the lack of employment opportunities in rural areas. Poverty affects 62 percent of the population of the North West province – the second highest provincial figure for South Africa (Baloyi *et al.*, 2002:3).

There is a high illiteracy rate (30 percent), making environmental awareness very difficult to address. This figure is significantly higher than the national average of 17,2 percent in 1998. The province has a potential labour force of 1,2 million of which only 62 percent are employed. The population is considered to be relatively young, with a high percentage of teenagers in the province, meaning that high levels of unemployment and associated social problems can be expected in the future unless there is a concomitant creation of job opportunities (Baloyi *et al.*, 2003:5)

The incidences of noticeable diseases are lower in the province than the national averages. Twenty three percent of antenatal females registered as HIV positive in 2000. AIDS and its debilitating health and economic impacts are therefore a highly significant factor in the province. The welfare facilities are still inequitably distributed in the province. Based on the UN Human Development Index, the province is the third lowest of South African provinces in terms of quality of life (UNAIDS, 2000)

population was younger than 14 years in the North West province (Figure 4.2). The more economically active group is between the ages of 16 and 64 years and constitutes 60,7 percent.

Figure 1.2 Age distribution by gender in the North West province

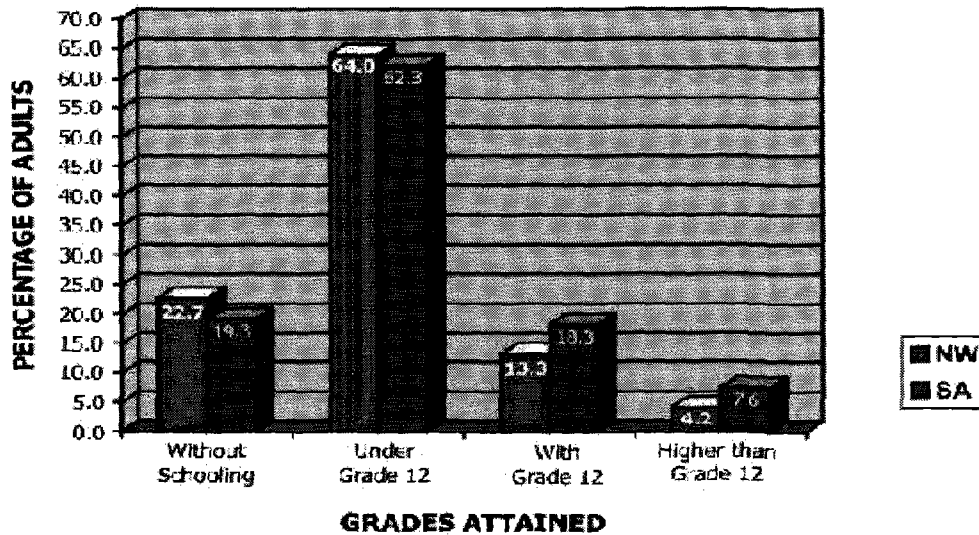


(Source: Baloyi *et.al.*, 2002:4)

1.5.3 Education in North West province

The North West province has a total of 2 434 schools (Anon., 1996). The literacy rate of about 70 percent (DBSA, 1998) is well below the national average of 82,8 percent. This low figure can be ascribed to the elderly and women living in the rural areas of the North West province. Figure 1.3 outlines the educational profile of adults in South Africa against those of the North West province.

Figure 1.3 Adult educational profiles for the North West province and South Africa



(Source: Re Ageng, 2001)

1.5.4 Employment in North West province

The economically active population is that part of the population that is able to work, who are aged 15 years and older (usually up to 65 years) and includes those who are employed and unemployed. Table 1.4 shows the North West province labour force utilisation (DBSA, 1998).

Table 1.1 North West labour force utilisation

Indicator	North West	South Africa
Labour force ('000)	1 189	13 979
Labour participation rate (%)	58.4	57.3
Employment per R1 million GGP	48.5	29.6
Labour absorption capacity (%)	62.2	66.2
Unemployment rate (%)	37.8	33.8
Proportion of labour without formal schooling	18.1	13.3
Proportion of labour force with matric and post-matric qualifications	20.0	25.3

The North West province is characterised by high unemployment rates, and inequality in terms of access to resources and poverty. Currently, 60,7 percent of the population in the North West province is regarded as economically active. However, it only has a potential labour force of about 1.2 million people, of which 61,3 percent are employed. The mining industry is the largest sector in the economy, which employs about 39 percent of all those with jobs in the North West province (SA, 2001). Most people in the North West province follow an elementary occupation, employing about 27,7 percent of just more than 200 00, which is a job characterised by low skills levels.

Poverty affects 62 percent of the province's population – the second highest provincial figure for South Africa. The province has an unemployment rate of 37,7 percent – the fourth highest in South Africa. The farming sector provides opportunities for employment for the rural communities, but the income derived from this sector is very low. There is also little upward mobility in this sector due to the education levels attracted to the employment. Further linkages can be found in relation to food security and unemployment. The higher the level of unemployment, the more food-insecure the population becomes. This has a spiralling effect in terms of other social elements such as health and crime.

According to Baloyi *et al.* (2002:5), there is a need to create more quality employment that can lead to sustainable livelihoods for those more affected by

poverty. Approximately 33.9 percent of the unemployed are found in the urban areas whilst 66,1 percent are in the rural areas. The male and female unemployment distribution in the province indicates that, in 1996, 187 000 males (41,6 percent) were unemployed compared to 262 000 females (58,4 percent).

1.5.5 Health in North West province

North West province has one of the highest HIV/AIDS prevalences in South Africa. Severe poverty is a major challenge; the province comprises a huge surface area housing a scattered community, and limited human resources prevail. Despite this, North West is one of the provinces, according to Variava (2006:35), that has successfully initiated large-scale ARV access in South Africa.

The public sector caters for the healthcare requirements of most households in the North West province, with the majority of households making use of public healthcare facilities. The rapid increase in the prevalence of HIV/AIDS among the North West province population will place increasing pressure on health services (Baloyi *et al.*, 2002:6).

1.5.6 Profile of Lichtenburg

Lichtenburg is a town situated in the North West province of South Africa. The main economic activity is the production of maize (corn). Lichtenburg lies in the heart of the maize triangle, which is the main maize growing area in South Africa. Another major economic activity in the Lichtenburg area is the production of cement. Within a radius of 80km of Lichtenburg there are three major cement producers. This creates an opportunity for long distance transport and related activities. Two of the largest cement factories in the Southern Hemisphere namely Holcim Dudfield and Lavarge as well as the biggest cheese factory in the country, namely Clover SA, are situated here (Anon., 2008c).

Ditsobotla sub-district, Ngaka Modiri Molema district, General de la Rey and Thusong Hospital Complex Pharmaceutical Services, situated in the town of Lichtenburg are committed to the fight against HIV/AIDS. The pharmacies and

hospital personnel at both hospitals invest their time in humanity, offering services to prevent and alleviate human suffering, promoting and fostering human dignity in the community with the limited resources available to them. The vision of the Ditsobotla sub-district is to achieve organisational excellence in healthcare delivery. Health workers are motivated to maintain the highest possible standards in care delivery while keeping cost under control.

According to Mediwane (2008), manager of the Wellness Clinic at General de la Rey Hospital, and assistant in this study, the hospital's most recent statistics shows that Ditsobotla sub-district serves approximately one thousand four hundred and eighty seven (1 487) patients on a monthly basis. There are five hundred and nineteen (519) males on regimen 1a, two (2) males on regimen 2, five hundred and twenty two (522) females on regimen 1b, three hundred and sixty six (366) females on regimen 1a, fourteen (14) patients on regimen 1az and seventy eight (78) children on ART.

1.6 LIMITATIONS OF THE STUDY

The study is limited to Thusong and General de la Rey Hospital Complex and its unique circumstances at the time the study was undertaken. The major limitation for the study was that participants did not open up to discuss why they do not take their medication correctly, and some patients hesitated to disclose non-adherence to health providers whom they wish to please, or do not fully trust. Other limitations include the following: this is a quantitative study with a small sample: participants were recruited from the Wellness Clinics at the two previously mentioned hospitals. The study did not include the urban population of Lichtenburg, or the part of the population that is covered by medical aids. Another limitation is that only half (53 percent) of the population had some form of school education, and most of them can only speak Setswana, presenting a language barrier. Other limitations of this study involved other limitations inherent in quantitative studies.

For the purpose of the study, assumptions were made and research was measured against existing data. Further studies that include these assumptions and their implications are recommended.

Assumptions made in this study include:

- For the purpose and scope of this study the costs of treating patients' opportunistic infections and hospital care were not included, although patients on antiretroviral therapy could require other services such as hospital care, and more.
- All the patients included in the study are diagnosed with stage 4 HIV/AIDS infections, and are on antiretroviral treatment.
- Adults are considered to be those between 15 - 49 years.
- Ditsobotla sub-district, Lichtenburg, North West province follows the same expenditure pattern as the three HIV/AIDS clinics in Khayelitsha, Cape Town.
- More than two thirds, 68 percent, of the sample population are female between the ages of 21 - 45; therefore, the study assumed that more than half of the target population were on regimen 1b, and the rest of the population assumed to be on regimen 1a.

1.7 LAYOUT OF THE STUDY

Chapter 1

This chapter is an introduction to the mini-dissertation. The discussion in this chapter is devoted to issues such as the problem statement, objectives of the study, demarcation of the field of study, research methodology and limitations of the study.

Chapter 2

Chapter two contains a literature study on particular aspects of HIV/AIDS. This chapter includes an explanation of what HIV/AIDS is and identifies the four distinctive stages in HIV/AIDS; a discussion on the choice and goals of antiretroviral

treatment follows; the impact of HIV/AIDS on South Africa and the scale of the South African crisis take centre stage; government's commitment to fight HIV/AIDS is confirmed, and Key Priority Areas (KPAs) including prevention, treatment care and support, research monitoring and surveillance, human and legal rights receive attention.

Chapter 3

This chapter contains specific findings on the research conducted of the socio-economic impact of HIV/AIDS on South Africa and specifically the North West province. Subsequently, there is a discussion of the increased financial burden on government's health sector and the negative impact of HIV/AIDS on government's staff. It summarizes the cost implications of HIV/AIDS on government and calculates the total cost of ART per patient. A discussion of social grants, patient defaulting and the cost of patient defaulting, which is one of the main objectives of the study, concludes the chapter.

Chapter 4

The empirical study is discussed in this chapter, and results of the study are measured, analysed and discussed. Emerging themes are identified, and a number of recommendations are made.

Chapter 5

This is the final chapter, where conclusions are reached and recommendations are made to improve patient compliance. Decreasing the financial impact of patient defaulting on the pharmacies and overcoming barriers to achieving organisational excellence are on the table. This chapter also comprises a summary of the problem from which the study evolved as well as the objectives of the study, and indicates whether these objectives were achieved. In conclusion, recommendations are made that will lead to better patient adherence to medication, and continuous improvement of quality of service care delivery.

1.8 SUMMARY

In chapter one, the problem from which the study evolved has been stated. In addition to this, the primary and secondary objectives, which the study aims to achieve, were defined. Furthermore, the method of research, the scope of the study, and its limitations were described.

To be able to achieve the goals laid down in this chapter, it is essential to gain specific knowledge in the HIV/AIDS field and the impact it has on patients, pharmaceutical services and the rest of South Africa.

CHAPTER 2

THE HIV/AIDS PROBLEM IN SOUTH AFRICA

2.1 INTRODUCTION

HIV/AIDS is widely recognized as one of the most complex challenges mankind has ever faced. For twenty-five years governments and agencies from the private sector, the scientific community, and non-profit organisations have battled to control the spread of HIV/AIDS. According to Dickinson (2007:2), a plethora of prevention strategies, treatment and care models have been deployed and levels of funding for this work have soared. Many lives have been improved and saved, and the understanding of the virus has advanced enormously. Despite this global problem, South Africa is still unable to stem the tide of this disease. The struggle to overcome the impact and effects of HIV/AIDS is one felt by the entire nation. An inclusive and comprehensive response needs to extend beyond the country's boundaries to contribute knowledge, care and support in communities.

Chapter two contains a literature study on particular aspects of HIV/AIDS. This chapter will include an explanation of what HIV/AIDS is and identifies the four distinctive stages in HIV/AIDS. The impact of HIV/AIDS on South Africa and the scale of the South African crisis will be explained. The choice and goals of antiretroviral treatment will be investigated in chapter three to determine the cost of ART for patients. Government's commitment to fight HIV/AIDS will be established, and KPAs including prevention, treatment care and support, research monitoring and surveillance, human and legal rights will be identified to determine what steps need to be taken to achieve organisational excellence. In the next section the concept of HIV/AIDS will be explained.

2.2 THE CONCEPT OF HIV/AIDS

The human immunodeficiency virus (HIV) is a retrovirus that infects cells of the human immune system, destroying or impairing their function. In the early stages of infection, the person has no symptoms (SA, 2008f). However, as the infection progresses, the immune system becomes weaker, and the person becomes more susceptible to so-called opportunistic infections. The most advanced stage of HIV infection is acquired immunodeficiency syndrome (AIDS). According to the World Health Organization (WHO, 2008), it can take 10 - 15 years for an HIV-infected person to develop AIDS; antiretroviral drugs can slow down the process even further. HIV is transmitted through unprotected sexual intercourse (anal or vaginal), transfusion of contaminated blood, sharing of contaminated needles, and between a mother and her infant during pregnancy, childbirth and breastfeeding.

Tequis (1992:3) states that AIDS is the name of the fatal condition that results from infection with the HIV virus, which progressively damages the body's ability to protect itself from disease organisms. Thus, many AIDS deaths ultimately result from pneumonia, tuberculosis, or diarrhoea. Death is not caused by HIV itself but by one or more of these infections. The immune-deficiency syndrome, caused by the virus, attacks certain cells of the body's immune system. Over time, the immune system is weakened. When the immune system starts to fail, the body is susceptible to life-threatening infections and cancers. Eventually, these infections and cancers are what kill the person (Weitz, 1989:270).

2.3 DIFFERENT STAGES IN HIV INFECTION

The main type of cell that HIV infects is the T helper lymphocyte. These cells play a crucial role in the immune system, by coordinating the actions of other immune system cells. A large reduction in the number of T helper cells seriously weakens the immune system. HIV infects the T helper cell because it has the protein CD4 on its surface, which HIV uses to attach itself to the cell before gaining entry. This is why the T helper cell is sometimes referred to as a CD4+ lymphocyte. Once it has found

its way into a cell, HIV produces new copies of itself, which can then go on to infect other cells. Over time, HIV infection leads to a severe reduction in the number of T helper cells available to help fight disease. The process usually takes several years (Anon., 2008i). Four distinctive stages of HIV/AIDS can be distinguished (Anon, 2008e).

2.3.1 The four distinctive stages of HIV

HIV infection can generally be apportioned into four distinct stages: primary infection, clinically asymptomatic stage, symptomatic HIV infection, and progression from HIV to AIDS (Anon., 2006c).

2.3.1.1 Stage 1: Primary HIV Infection

This stage of infection lasts for a few weeks and is often accompanied by a short flu-like illness. In up to about 20 percent of people the symptoms are serious enough to consult a doctor, but the diagnosis of HIV infection is frequently missed. During this stage, there is a large amount of HIV in the peripheral blood, and the immune system begins to respond to the virus by producing HIV antibodies and cytotoxic lymphocytes. This process is known as seroconversion (Trotter *et al.*, 2008:328). If an HIV antibody test is done before seroconversion is complete then it may not be positive (Cichocki, 2007).

2.3.1.2 Stage 2: Clinically Asymptomatic Stage

This stage lasts for an average of ten years and, as its name suggests, is free from major symptoms, although there may be swollen glands. The level of HIV in the peripheral blood drops to very low levels, but people remain infectious and HIV antibodies are detectable in the blood, so antibody tests will show a positive result. Research has shown that HIV is not dormant during this stage, but is very active in the lymph nodes (WHO, 2003). A test is available to measure the small amount of HIV that escapes the lymph nodes. This test, which measures HIV RNA (HIV genetic material) is referred to as the viral load test, and it has an important role in the treatment of HIV infection.

2.3.1.3 Stage 3: Symptomatic HIV-Infection

Over time the immune system becomes severely damaged by HIV. This is thought to happen for three main reasons:

- The lymph nodes and tissues become damaged or 'burnt out' because of the years of activity;
- HIV mutates and becomes more pathogenic; in other words, stronger and more varied, leading to more T helper cell destruction; and
- The body fails to keep up with replacing the T helper cells that are lost.

As the immune system fails, so symptoms develop. Initially, many of the symptoms are mild, but as the immune system deteriorates the symptoms worsen.

- **Opportunistic infections and cancers associated with stage 3**

Symptomatic HIV infection is mainly caused by the emergence of opportunistic infections and cancers that the immune system would normally prevent. Opportunistic infections can occur in almost all the body systems, but common examples are featured in the table 2.1 below. As the table below indicates, symptomatic HIV infection is often characterised by multi-system disease. Treatment for the specific infection or cancer is often carried out, but the underlying cause is the action of HIV as it erodes the immune system. The WHO (2008) states that unless HIV itself can be slowed down the symptoms of immune suppression will continue to worsen.

Table 2.1: Opportunistic infections: systems and examples of infection/cancer

SYSTEM	EXAMPLES OF INFECTION/CANCER
Respiratory system	Pneumocystis jirovecii Pneumonia (PCP)
	Tuberculosis (TB)
	Kaposi's Sarcoma (KS)
Gastro-intestinal system	Cryptosporidiosis
	Candida
	Cytomegalavirus (CMV)
	Isosporiasis
	Kaposi's Sarcoma
Central/peripheral nervous system	HIV
	Cytomegalavirus
	Toxoplasmosis
	Cryptococcosis
	Non Hodgkin's lymphoma
	Varicella Zoster
	Herpes simplex
Skin	Herpes simplex
	Kaposi's sarcoma
	Varicella Zoster

(Source: WHO, 2008)

For the purpose of this study, the cost of treating patients' opportunistic infections was not included. Further study to determine the cost of anti-retroviral treatment and the cost of treating opportunistic treatment will be recommended. The last distinctive stage of HIV/AIDS is progression from HIV to AIDS.

2.3.1.4 Stage 4: Progression from HIV to AIDS

As the immune system becomes more and more damaged the illnesses that occur become more and more severe, leading eventually to an AIDS diagnosis. At present, according to the Centre for Disease, Control and Prevention (CDC) in South Africa and Crowley (2005), an AIDS diagnosis is confirmed if a person has a CD4+ T cell count below 200 per μL of blood or 14 percent of all lymphocytes. The AIDS diagnosis still stands even if, after treatment, the CD4+ T cell count rises to above 200 per μL of blood or other AIDS-defining illnesses are cured.

For the purpose of this study it will be assumed that all patients included in the study are diagnosed with AIDS, and therefore are on antiretroviral treatment. This study focuses primarily on stage IV patients.

2.3.2 World Health Organisation's clinical staging of HIV disease in adults and adolescents

In resource-poor communities, medical facilities are sometimes poorly equipped, and it is not possible to use CD4 and viral load test results to determine the right time to begin antiretroviral treatment. The WHO (2004) has therefore developed a staging system for HIV disease based on clinical symptoms, which may be used to guide medical decision-making. A number of clinical stages can be distinguished:

Clinical Stage I:

- Asymptomatic
- Persistent generalized lymphadenopathy

Clinical Stage II:

- Moderate unexplained weight loss (under 10 percent of presumed or measured body weight)
- Recurrent respiratory tract infections (sinusitis, tonsillitis, otitis media, pharyngitis)
- Herpes zoster
- Angular cheilitis

- Recurrent oral ulceration
- Papular pruritic eruptions
- Seborrhoeic dermatitis
- Fungal nail infections

Clinical Stage III:

- Unexplained severe weight loss (over 10 percent of presumed or measured body weight)
- Unexplained chronic diarrhoea for longer than one month
- Unexplained persistent fever (intermittent or constant for longer than one month)
- Persistent oral candidiasis
- Oral hairy leukoplakia
- Pulmonary tuberculosis
- Severe bacterial infections (e.g. pneumonia, empyema, pyomyositis, bone or joint infection, meningitis, bacteraemia)
- Acute necrotizing ulcerative stomatitis, gingivitis or periodontitis
- Unexplained anaemia (below 8 g/dl), neutropenia (below 0.5 billion/l) and/or chronic thrombocytopenia (below 50 billion/l)

Clinical Stage IV:

- HIV wasting syndrome
- Pneumocystis pneumonia
- Recurrent severe bacterial pneumonia
- Chronic herpes simplex infection (orolabial, genital or anorectal of more than one month's duration or visceral at any site)
- Oesophageal candidiasis (or candidiasis of trachea, bronchi or lungs)
- Extrapulmonary tuberculosis
- Kaposi sarcoma
- Cytomegalovirus infection (retinitis or infection of other organs)
- Central nervous system toxoplasmosis
- HIV encephalopathy
- Extrapulmonary cryptococcosis including meningitis
- Disseminated non-tuberculous mycobacteria infection

- Progressive multifocal leukoencephalopathy
- Chronic cryptosporidiosis
- Chronic isosporiasis
- Disseminated mycosis (extrapulmonary histoplasmosis, coccidiomycosis)
- Recurrent septicaemia (including non-typhoidal Salmonella)
- Lymphoma (cerebral or B cell non-Hodgkin)
- Invasive cervical carcinoma
- Atypical disseminated leishmaniasis
- Symptomatic HIV-associated nephropathy or HIV-associated cardiomyopathy.

This staging system for the HIV diseased, based on identifying clinical symptoms, helps to determine when to start antiretroviral treatment in resource-poor and rural communities. The next section will discuss ART, and the impact it has on the South African government's public health sector.

2.3.3 Antiretroviral therapy

It is difficult to overstate the suffering that HIV/AIDS has caused in South Africa (Pembrey, 2008). With statistics showing that almost one in five adults are infected, HIV/AIDS is widespread in a sense that can be difficult to imagine for those living in less-affected countries. For each person living with HIV/AIDS in South Africa and elsewhere, not only does it impact on their lives, but also those of their families, friends and wider communities.

Although there is still no cure for HIV/AIDS, with antiretroviral drug treatment, HIV-positive people can maintain their health and often live relatively normal lives. In Section 2.4 antiretroviral treatment and the costs involved in providing ARTs to patients will be investigated. Providing ARVs remains one of the main challenges of the HIV epidemic, and with the mounting effect on the economy, financial pressure is building on health institutions.

2.4 ANTIRETROVIRAL TREATMENT

Undoubtedly, the most significant recent development in the HIV/AIDS struggle in South Africa was the decision taken by government in 2003 to provide antiretroviral therapy in the public health sector as part of the Operational Plan for the Comprehensive HIV and AIDS Care, Management and Treatment for South Africa (Crowley, 2005; Crawford, 2008:5). This decision gives new hope to thousands of people who require this treatment to reduce morbidity levels and defer premature death. However, this decision brings with it a new set of challenges; these include overcoming capacity constraints within the public health sector and issues of treatment literacy for patients to ensure treatment compliance and the avoidance of the emergence and spread of drug resistance strains of the virus.

Patient adherence in taking their medication is the key to the success of this programme: patients are required to take three types of tablets twice a day at the same time each day for the rest of their lives. Treatment preparedness and support for patients commencing ARV therapy is therefore imperative. As ARV therapy is a lifetime commitment it is vital that patients in the earlier stages of HIV be educated on wellness management and encouraged to keep themselves healthy for as long as possible so that their CD4 counts remain high and thereby deferring the need to commence ARV therapy.

The ARV rollout is happening at different rates, on different scales and with different degrees of commitment and success from district to district and province to province. The office of the National Manager of the ARV programme released the national patient numbers by province and site for the first time in January 2005. The statistics showed that about 29 000 people were on ARV treatment at more than 113 public sector facilities by that time. The figures of each province are given below in table 2.2.

Table 2.2: ARV rollout patient numbers by province

PROVINCE	PATIENT NUMBERS
KwaZulu-Natal	8 467
Gauteng	10 000
Northern Cape	515
North West	2 800
Mpumalanga	1 000
Free State	945
Limpopo	729
Western Cape	6 200

The wide differences reflect the numbers needing treatment and the capacity of provinces to deliver. NGOs emphasise the benefits of having access to such data in order to monitor and support the Operational Plan. Most treatment is still hospital based and most patients are adults. There is an urgent need to support initiatives to devolve management of ARV treatment to local clinic level and to ensure that children have access to treatment. It is also critical to improve access to generics, to bring down the price of drugs and the cost of diagnostic testing (Anon., 2008i:11).

2.4.1 Traditional medicine, culture and health in South Africa

Some eighty percent of South Africans consult traditional healers and use traditional African remedies, even if they also use Western medicines. In the climate of fear and shame that prevailed when people with HIV/AIDS started dying in large numbers, when testing was not widely available and only a minority could afford life-prolonging drugs, traditional healers used a wide range of treatments to alleviate the symptoms of HIV/AIDS. Some so-called healers falsely claimed to have cures for HIV/AIDS. There was mistrust between traditional healers and Western medical practitioners and different approaches were seen as being in opposition to each other.

In recent years, the government has tried to integrate traditional healers into the national healthcare system, promoting investment in the research, development of traditional remedies and the protection of related intellectual property. At community level, many organisations work closely with traditional healers in counselling, encouraging testing, promoting good nutrition and complementary remedies. There are many cases of traditional healers and clinic workers referring patients to each other. Improving understanding and cooperation between different medical traditions are important to promote the wellbeing of people living with HIV/AIDS and to prevent unnecessary conflict and misinformation.

The same applies to attitudes to cultural traditions and practices. These have a direct influence on the health and wellbeing of communities. Some practices are potentially harmful in terms of the fight against HIV/AIDS. Examples include the low status of women and girls in traditional communities, which results in unequal power relationships and increases their risk of infection; and initiation schools, which play an important role in shaping the attitudes and behaviour of young men in traditional communities. Cultural and social change in communities is unlikely to happen without the support of traditional leaders, who are the custodians of culture. AFSA (AIDS Foundation South Africa) therefore supports interventions targeting traditional healers, traditional leaders and initiation schools to ensure protection of vulnerable community members (Fredricksson & Kanabus, 2006; Pembrey, 2008). The next section will focus on Western medication (ART) as the main treatment for HIV/AIDS.

2.4.2 Taking antiretroviral treatment

Antiretroviral treatment is the main type of treatment for HIV/AIDS. It is not a cure, but it can stop people from becoming ill for many years. The treatment consists of drugs that have to be taken every day for the rest of a patient's life. The aim of antiretroviral treatment is to keep the amount of HIV in the body at a low level. This stops any weakening of the immune system and allows it to recover from any damage that HIV might have caused already.

Combination therapy refers to taking two or more antiretroviral drugs at a time. Taking a combination of three or more anti-HIV drugs is referred to as Highly Active Antiretroviral Therapy (HAART). If only one drug was taken, HIV/AIDS would quickly become resistant to it and the drug would stop working. Taking two or more antiretroviral drugs at the same time vastly reduces the rate at which resistance would develop, making treatment more effective in the long term.

The choice of drugs to take can depend on a number of factors, including the availability and price of drugs, the number of pills, the side effects of the drugs, and the laboratory monitoring requirements. At the beginning of treatment, the combination of drugs that a person is given is called first-line therapy (Regimen 1a and 1b). Regimen 1a is given to all men, as well as women on injectable contraception and condoms; Regimen 1b is given to women who are unable to guarantee reliable contraception while on therapy. If after a while HIV/AIDS becomes resistant to this combination, or if side effects are particularly bad, then a change to second-line therapy (Regimen 2) is usually recommended. Second-line therapy will ideally include a minimum of three new drugs, with at least one from a new class, in order to increase the likelihood of treatment success.

2.4.3 Dosage requirements for HAART

HAART therapy has complex and rigorous dosing requirements. ART regimens are fruitless if the prescribed medications are not being taken by the patient, exactly as intended. Prescribed medications needs to be taken twice a day, 12 hours apart, and are less likely to cause side-effects if taken after food. A patient, for example, on Regimen 1a must take one capsule of Stavudine and one tablet of Lamuvidine at seven or eight o'clock (patient indicates preferable time) in the morning and then take one capsule of Stavudine and one tablet of Lamuvide and one capsule of Stocrin at seven or eight o'clock at night. If patients do not adhere to dosing requirements, they default medication. The challenge of optimizing adherence to antiretrovirals remains paramount in the treatment of HIV. Recent data suggest that greater than 95 percent adherence to antiretrovirals is required to achieve satisfactory viral suppression – definitely a life-time commitment.

2.4.4 The groups of antiretroviral drugs

There are five groups of antiretroviral drugs. Each of these groups attacks HIV/AIDS in a different way. Table 2.2 below indicates the fived groups of ARV drugs:

Table 2.3: Groups of antiretroviral drugs

ANTIRETROVIRAL DRUG CLASS	ABBREVIATIONS	FIRST APPROVED TO TREAT HIV	HOW THEY ATTACK HIV
Nucleoside or Nucleotide Reverse Transcriptase Inhibitors (NRTIs)	NRTIs, nucleoside analogues, nukes	1987	NRTIs interfere with the action of an HIV protein called reverse transcriptase, which the virus needs to make new copies of itself.
Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTIs)	NNRTIs, non-nucleosides, non-nukes	1997	NNRTIs also stop HIV from replicating within cells by inhibiting the reverse transcriptase protein.
Protease Inhibitors (PIs)	PIs	1995	PIs inhibit protease, which is another protein involved in the HIV replication process
Fusion or Entry Inhibitors		2003	Fusion or entry inhibitors prevent HIV from binding to or entering human immune cells
Integrase Inhibitors		2007	Integrase inhibitors interfere with the integrase enzyme, which HIV needs to insert its genetic material into human cells.

(Source: Spink, 2008)

As indicated by Spink (2008), these are the five main groups of ART; it is not a cure, but it can stop people from becoming ill for many years if taken in the correct combination, as prescribed by the physician.

2.4.5 Goals of antiretroviral treatment

The primary goal of ART is to decrease HIV-related morbidity and mortality.

- The patient should experience fewer HIV-related illnesses.
- The patient's CD4 count should rise and remain above the baseline count.
- The patient's viral load should become undetectable (<400 copies/mm³), and remain undetectable on ART.

The secondary goal is to decrease the incidence of HIV through:

- An increase in voluntary testing and counselling with more people knowing their status and practising safer sex;
- Reducing transmission in discordant couples (discordant couples means one partner is positive and one negative); and
- Reducing the risks of HIV transmission from mother to child.

(National Antiretroviral Treatment Guidelines (Simelela, 2004:2))

2.4.6 Patient selection criteria

Patients are selected for ART if their CD4 count is below 200 cells/mm³ if a CD4 viral load test is done. If a CD4 viral load test could not be done, for instance in a resource-poor community, the patient is selected by WHO stage IV disease irrespective of the CD4 count, as discussed in section 2.3.2.

Indication for ART – medical criteria:

- CD4 count <200 cells/mm³ irrespective of WHO stage
or
- WHO Stage IV disease irrespective of CD4 count

If a patient is selected for ART treatment, the next step is to identify the combination of HAART the patient will need. Section 2.4.5 will discuss the different regimes of ART for adults and factors that influence the choice of regimen.

2.4.7 Recommended regimens in adults

Table 2.4 below indicates the different regimens of ART, and Table 2.5 shows the different ART drugs and their prices.

Table 2.4: Recommended ART regimens

REGIMEN	DRUGS
1a	d4T/3TC/efavirenz
1b	D4T/3TC/NVP
2	AZT/ddI/lopinavir/ritonavir

(Source: Simelela, 2004:6)

- Regimen 1a – first-line for: (1) men (2) women of child bearing potential (3) pregnant women and (4) conditions where EFV is contraindicated (e.g.: psychiatric diagnosis)
- Regimen 1b – alternate first-line for persons who: (1) develop NVP intolerance (2) have evidence of hepatotoxicity and (3) other conditions where NVP is contraindicated. Avoid in pregnancy and women of childbearing potential
- Regimen 2 – use as (1) second-line for patients who 'fail' regimens 1a or 1b, or (2) first-line in patients who have evidence of NVP resistance prior to ARV initiation
- Staging = initial testing for all patients after testing HIV-positive
- Baseline = testing for ARV eligible patients, at initiation of ARVs
(SA, 2003b:65)

Table 2.5: List of ART drugs and related prices

DRUG NAME	ABBREVIATION	PRICES
Stavudine	d4T	R40.30
Lamivudine	3TC	R81.60
Efavirenz	EFV	R136.80
Nevirapine	NVP	R179.89
Zidovudine	AZT	R228.91
Didanosine	Ddl	R110.31
Lopinavir/ritonavir	LPV/r	R315.23

(Source: Simelela, 2004:64; Wiggill, 2008)

The primary goals of antiretroviral therapy are maximal and durable suppression of viral load, restoration and preservation of immunologic function, improvement of quality of life, and reduction of HIV/AIDS-related morbidity and mortality (Noyle, 2008:4). Never before in the history of the epidemic has so much money been available to finance treatment and care for people with HIV/AIDS, and never before have life-saving antiretroviral medicines been so cheaply and plentifully available. But still, every day, more than 5 000 people are dying from a disease which can be treated, but which all too often isn't. HIV/AIDS killed an estimated 2 million people in 2007. If everyone had access to ARV therapy, the death toll would be much lower. Treatment for HIV/AIDS has been shown to be effective and feasible in even the poorest parts of the world. Political momentum is building and governments are beginning to show their willingness to help alleviate the suffering. There are many challenges to be overcome on the road towards universal access, including a shortage of resources, infrastructure and skilled staff, but none of these problems is insolvable.

Ways to overcome these challenges and barriers to achieving organisational excellence through healthcare delivery will be discussed in chapter three of this study. Section 2.5 will discuss the scale of South Africa's HIV/AIDS crisis.

2.5 SCALE OF SOUTH AFRICA'S HIV/AIDS CRISIS

South Africa, with over five million of its 47 million citizens being HIV/AIDS positive, currently has more people living with HIV/AIDS than any other country (Frank, 2006:14). According to Global Health Facts (Anon., 2008h:3), adults living with HIV/AIDS in South Africa amounts to 5 300 000, with a prevalence rate of 18.8 percent. Approximately 42 percent of South African men and 58 percent of South African women are living with HIV/AIDS. AIDS deaths reached 320 000 in 2006 leaving 1 200 000 AIDS orphans. The ARV (Anti Retro Viral) coverage rate in South Africa is only 33 percent, which implies that currently only 325 000 people are treated for HIV/AIDS in South Africa, leaving a vast need for ARV treatment, which presents a problem.

But the situation is even worse looking at individual households affected by the disease, especially in rural areas. For millions of families, HIV/AIDS means dramatic reduction of income, because it generally affects the active member of the household. Since the working age population will bear the brunt of the impact, HIV/AIDS is bound to have an adverse impact on the economy. Both the production and expenditure sides of the economy will be adversely affected (BER, 2006:35). The World Bank estimated that with a prevalence of HIV/AIDS at 20 percent in 1999, South Africa's Gross Domestic Product (GDP) will be less than 17 percent in 2010 than it would have been without the presence of the deadly virus.

The GDP is one of the primary indicators used to gauge the health of a country's economy. It represents the total dollar value of all goods and services produced over a specific time period – one can think of it as the size of the economy. As one can imagine, economic production and growth, what GDP represents, has a large impact on nearly everyone within that economy. For example, when the economy is healthy, you will typically see low unemployment and wage increases as businesses demand labour to meet the growing economy. A significant change in the GDP, whether up or down, usually has a significant effect on the stock market. A bad economy usually means lower profits for companies, which in turn means lower stock prices. Investors really worry about negative GDP growth, which is one of the factors economists use to determine whether an economy is in a recession (Anon., 2008g:1).

With HIV/AIDS severely affecting the South African economy as discussed above, it represents a heavy burden on public finances, particularly for the health sector (Bertozzi et al., 2005:2). According to the Bureau for Economic Research (BER, 2006:39), one of the most visible consequences of the epidemic will be the increase in the number of people seeking medical care. According to the BER, only approximately 15 percent of South Africa's population is covered by employment related and other private medical schemes; the vast majority of HIV/AIDS patients will look at public funded hospitals for medical care. Public hospitals are funded out of general tax revenue and essentially provide medical service free of charge. The financial strain on the public sector will be severe, not only as a result of the sheer number of people seeking medical care, but also because healthcare for HIV/AIDS patients is more expensive than for most other conditions (BER, 2006:41).

Because of the vast number of people affected by HIV/AIDS in South Africa, and the negative effect HIV/AIDS has on the economic situation in South Africa, stress factors that worsen these figures daily, will be discussed in section 2.6.

2.6 IMPACT OF HIV RELATED POVERTY AND GENDER, EDUCATION AND STIGMA IN SOUTH AFRICA

"Let us give publicity to HIV/AIDS and not hide it, because [that is] the only way to make it appear like a normal illness." (Anon., 2005)

This section will discuss risk factors influencing HIV/AIDS. Poverty does not operate on its own as a risk factor for infection with HIV/AIDS. Its effect needs to be understood within a socio-epidemiological context. It works through a myriad of interrelations, including unequal income distribution, economic inequalities between men and women which promote transactional sex, relatively poor public health education, and an inadequate public health system. Poverty-related stressors arising from aspects of poverty in townships such as poor and dense housing, and inadequate transportation, sanitation and food, unemployment, poor education,

violence and crime, have also been shown to be associated with increased risk of HIV/AIDS transmission.

2.6.1 Poverty and gender in South Africa

According to the National AIDS Control Council work plan (SA, 2005b), HIV/AIDS increasingly affects the poor and people with low levels of education. The severity of the epidemic is closely linked to a region's poverty, low status of women, and other socio-economic factors. The profile of HIV/AIDS-infected people has been changing and it is becoming a disease of the poor with educated people in a position to respond to information available – and adopting safer sexual practices, meaning that the share of new infections is rising among low income and less educated people (Anon., 2006a:37). Substantial reduction in poverty levels is pivotal to subsequent lowering of HIV/AIDS prevalence rates.

The low status of women in some cultures implies that gender is also a factor in HIV/AIDS infection. The National HIV/AIDS Strategic Plan (NSP, 2007:8) acknowledged that women are more vulnerable to HIV/AIDS infection than men – largely as a result of women's lower position in the hierarchy of traditional societies, powerlessness and lack of adequate information about the disease (Anon., 2006a:37). The majority of women have little control over their own sexual behaviour and less over the sexual behaviour of their husbands or partners.

Women living with HIV/AIDS may be treated very differently from men in some societies where they are economically, culturally and socially disadvantaged. They are stigmatized and sometimes mistakenly perceived to be the main transmitters of sexually transmitted diseases (STDs). Men are more likely than women to be 'excused' for the behaviour that resulted in their infection (Fredricksson *et al.*, 2008).

2.6.2 HIV education in South Africa

The National AIDS Plan and other South African government policies and initiatives have evolved to ensure a legal framework for prevention, care and support is in place. This includes the National Education Policy Act, 1996 (Act No. 27 of 1996)

(SA, 2006) on HIV/AIDS, compiled to protect the rights of learners in public schools that are infected with and affected by HIV/AIDS. Established in 1999, the Tirisano programme is the National Education Department's five-year strategy to implement education and training for the twenty first century and consists of five core programmes to address the educational, health and social needs of learners. HIV/AIDS is the first programme outlined and comprises three projects to analyse the impact of HIV/AIDS on the education system, raise HIV/AIDS awareness among educators and learners, and integrate HIV/AIDS into and across the curriculum. This means that current South African government policy advocates the full integration of HIV/AIDS into education and training. It is an issue that needs to be discussed in all spheres of learning and working. It even stretches beyond prevention, demanding other inter-sectoral initiatives to ensure those infected and affected by HIV/AIDS can be identified and supported at a school level. Educators have a unique opportunity to change the course of the epidemic (Anon., 2008d:9).

Where home life might be unstable, schools can provide a platform to teach children these crucial life skills. Life skills are the basis on which life decisions are made including decisions to engage in sexual relationships. Young adolescents are particularly vulnerable and it is therefore critical for prevention programmes to reach them before they become sexually active. By equipping individuals to make informed life choices in a world affected by HIV/AIDS can break the cycle of infection and fight the HIV/AIDS epidemic (Anon., 2008a:3). The AIDS-related stigma will be the next topic of discussion.

2.6.3 HIV stigma in South Africa

HIV/AIDS-related stigma refers to the prejudice and discrimination directed at people living with HIV/AIDS, and the groups and communities that they are associated with (Fredricksson *et.al.*, 2008:4). It can result in people living with HIV/AIDS being rejected from their community, shunned, discriminated against or even physically hurt. HIV/AIDS stigma and discrimination have been seen all over the world, although they manifest themselves differently between countries, communities, religious groups and individuals. They are often seen alongside other forms of stigma and discrimination, such as racism, homophobia or misogyny and can be

associated with behaviour often considered socially unacceptable such as prostitution or drug use.

Stigma directed at people living with HIV/AIDS not only makes it more difficult for people trying to come to terms with and manage their illness on a personal level, but it also interferes with attempts to fight the HIV/AIDS epidemic as a whole. On a national level, the stigma associated with HIV/AIDS can deter governments from taking fast, effective action against the epidemic, whilst on a personal level it can make individuals reluctant to access HIV/AIDS testing, treatment and care.

The epidemic of fear, stigmatization and discrimination has undermined the ability of individuals, families and societies to protect themselves and provide support and reassurance to those affected. This hinders, in no small way, efforts at stemming the epidemic. It complicates decisions about testing, disclosure of status, and ability to negotiate prevention behaviours, including use of family planning services.

HIV/AIDS-related stigma has had a profound effect on the epidemic's course. The World Health Organization (WHO, 2003:5) cites fear of stigma and discrimination as the main reason why people are reluctant to be tested, to disclose HIV/AIDS status or to take antiretroviral drugs. These factors all contribute to the expansion of the epidemic (as a reluctance to determine HIV/AIDS status, or to discuss or practice safe sex means that people are more likely to infect others) and a higher number of HIV/AIDS-related deaths. An unwillingness to take an HIV/AIDS test means that more people are diagnosed late, when the virus has already progressed to AIDS, making treatment less effective and causing early death.

According to Ban Ki-Moon, Secretary-General of the United Nations (Ki-Moon, 2008), South Africans can fight the stigma. Enlightened laws and policies are key. But it begins with openness, the courage to speak out. Schools should teach respect and understanding. Religious leaders should preach tolerance. The media should condemn prejudice and use its influence to advance social change, from securing legal protection to ensuring access to healthcare.

However, no policy or law alone can combat HIV/AIDS-related discrimination. The fear and prejudice that lie at the core of HIV/AIDS discrimination need to be tackled at the community and national levels. A more enabling environment needs to be created to increase the visibility of people with HIV/AIDS as a 'normal' part of any society. The presence of treatment makes this task easier. Where there is hope, people are less afraid of HIV/AIDS; they are more willing to be tested for HIV/AIDS, to disclose their status, and to seek care, if necessary. In the future, the task is to confront the fear-based messages and biased social attitudes, in order to reduce the discrimination and stigma of people who are living with HIV/AIDS (Anon., 2008a).

2.7 SOUTH AFRICAN COMMITMENT TO FIGHT HIV/AIDS

South Africa's response to HIV/AIDS has evolved significantly over the last four to five years. Government's response has been guided by the Strategic Plan for South Africa HIV and AIDS, 2000 - 2005 and 2007 - 2011, and the Comprehensive Plan for Management, Care and Treatment of HIV and AIDS in South Africa (Tshabalala-Msimang, 2004:1). The Strategic Plan for South Africa 2000 - 2005 and 2007 - 2011 provides for a comprehensive framework for a multi-sectoral response involving all spheres of society. Government has committed to providing a comprehensive package of care for HIV/AIDS, and has now taken steps to provide antiretroviral treatment (ART) to patients in the public sector. Mounting an effective ART programme requires more than just the drugs. Establishing an adequate cadre of well-trained healthcare professionals, laboratory technicians, pharmacists and community workers is critical for success of this programme. Mobilisation of the community to participate and fully understand the benefits and limitations of ART is essential for maximum adherence. Guidelines for the use of ART drugs are established to ensure that government and the health team provide the best possible and safest care for those with HIV/AIDS in South Africa (Simelela, 2004:3).

Government's response to HIV/AIDS covers the full range of interventions including:

- Information, education and communication;
- Prevention programmes, including access to barrier methods such as male and female condoms;
- Increased access to voluntary counselling and testing;
- Prevention of mother to child transmission of HIV/AIDS;
- Robust nutritional interventions; and
- Emphasis on individual choice of treatment.

In order to ensure optimal therapy and good clinical outcomes, the Ministry and Department of Health have developed national guidelines for use of ART. Patients who are on ART need to comply with their treatment schedules. To facilitate this, counselling and family support as well as robust nutritional interventions, are critical. The guidelines will be revised as necessary to reflect the changing world of the treatment of HIV/AIDS. This will ensure the highest possible standard of care for all South Africans. Government's goal is to provide safe, sustainable and effective care to all its citizens (Tshabalala-Msimang, 2004:4).

Building on work done in the past, the interventions needed to reach government's goals are structured under four key priority areas: Prevention, Treatment, care and support, Human and legal rights; and Monitoring, research and surveillance (NSP, 2007:14). Each of the priority areas will be discussed in the section below.

2.7.1 Key Priority Area 1: Prevention

Reduce the rate of new HIV-infections by 50 percent by 2011. The intention is to ensure that the large majority of South Africans who are HIV negative remain HIV negative.

Objectives of Key Priority Area 1: Prevention is divided into four sections:

- Reduce vulnerability to HIV infection and the impacts of AIDS.
- Reduce sexual transmission of HIV/AIDS.
- Reduce mother to child transmission of HIV/AIDS; and

- Minimize the risk of HIV/AIDS transmission through blood and blood products.

2.7.1.1 Reducing vulnerability to HIV-infection and the impact of AIDS

Reduce vulnerability to HIV-infection and the impacts of AIDS by:

- Accelerating poverty reduction strategies and strengthening safety nets to mitigate the impact of poverty;
- Accelerating programmes to empower women and educate men and women, including the boy and girl child, on human rights in general and women's rights in particular;
- Developing and implementing strategies to address gender based violence;
- Creating an enabling environment for HIV testing;
- Building and maintaining leadership from all sectors of society to promote and support the NSP goals;
- Support national efforts to strengthen social cohesion in communities and to support the institution of the family; and
- Build AIDS competent communities through tailored competency processes.

2.7.1.2 Reducing sexual transmission of HIV

To reduce sexual transmission of HIV:

- Strengthen behaviour change programmes, interventions and curricula for the prevention of sexual transmission of HIV, customised for different groups with a focus on those more vulnerable to and at higher risk of HIV infection.
- Implement interventions targeted at reducing HIV infection in young people, focusing on young women.
- Increase open discussion of HIV and sexuality between parents and children.
- Increase roll out of workplace prevention programmes.

- Increase roll out of prevention programmes for higher risk populations.
- Develop and integrate a package of sexual and reproductive health and HIV prevention services into all relevant health services.
- Develop a comprehensive package that promotes male sexual health.
- Develop and integrate interventions for reducing recreational drug use in young people with HIV prevention efforts.
- Increase the accessibility and availability of comprehensive sexual assault care including PEP and psychosocial support.
- Scale up prevention programmes for HIV-positive people.

2.7.1.3 Reducing mother-to-child transmission of HIV

To reduce mother-to-child transmission of HIV:

- Broaden existing mother-to-child transmission services to include other related services and target groups.
- Scale up coverage and improve quality of PMTCT to reduce MTCT to less than 5 percent.

2.7.1.4 Minimizing the risk of HIV transmission through blood and blood products

To minimize the risk of HIV transmission through blood and blood products:

- Minimise the risk of HIV transmission from occupational exposure among healthcare providers in the formal, informal and traditional settings through the use of infection control procedures.
- Minimise exposure to infected blood through procedures associated with traditional and complementary practices.
- Investigate the extent of HIV risk from Intravenous Drug Use (IDUs) and develop policy to minimise risk of HIV transmission through injecting drug use and unsafe sexual practices.
- Ensure safe supplies of blood and blood products (HIV screening tests for measuring both virus and antibodies).

2.7.2 Key Priority Area 2: Treatment, care and support

Reduce HIV infection and AIDS morbidity and mortality as well as its socio-economic impacts by providing appropriate packages of treatment, care and support to 80 percent of HIV-positive people and their families by 2011.

Objectives of Key Priority Area 2: Treatment, care and support is also divided into four priority areas:

- Increase coverage to voluntary counselling and testing, and promote regular HIV testing.
- Enable people living with HIV and AIDS to lead healthy and productive lives.
- Address the special needs of pregnant women and children.
- Mitigate the impacts of HIV/AIDS.
- Create an enabling social environment for care, treatment and support.

2.7.2.1 Increase coverage to voluntary counselling and testing and promote regular HIV testing

- Increase access to VCT services that recognise diversity of needs.
- Increase uptake of VCT.

2.7.2.2 Enable people living with HIV and AIDS to lead healthy and productive lives

- Scale up coverage of the comprehensive care and treatment package.
- Increase retention of children and adults on ART.
- Ensure effective management of TB/HIV co-infection.
- Improve quality of life for people with HIV and AIDS requiring terminal care.
- Strengthen the health system and remove barriers to access.

2.7.2.3 Address the special needs of pregnant women and children

- Decrease HIV and AIDS-related maternal mortality through women-specific programmes.
- Determine the HIV status of infants, children and adolescents as early as possible.
- Provide a comprehensive package of services that includes wellness care and ART to HIV-affected, -infected and -exposed children and adolescents.

2.7.2.4 Mitigate the impact of HIV and AIDS and create an enabling social environment for care, treatment and support

- Strengthen the implementation of OVC policy and programmes.
- Expand and implement CHBC as part of EPWP.
- Strengthen the implementation of policies and services for marginalised communities affected by HIV and AIDS.
- Ensure community AIDS competence in order to facilitate utilization of good quality services.

2.7.3 Key Priority Area 3: Research, monitoring and surveillance

The NSP 2007 – 2011 (2007) recognises monitoring and evaluation (M&E) as an important policy and management tool. National, provincial and district level indicators to monitor inputs, process, outputs, outcomes and impact will be used to assess collective effort. It is recommended that in line with international trends, a sustainable budget of between four to seven percent is dedicated for the monitoring and evaluation of the NSP.

Key Priority Area 3: Research, monitoring and surveillance is divided into seven key objectives. These objectives are:

- Develop and implement a monitoring and evaluation framework for appropriate indicators.
- Support research in the development of new prevention technologies.
- Create an enabling environment for research in support of the NSP, development and promotion of research on behaviour change.
- Develop and support a comprehensive research agenda,
- Conduct policy research and regular surveillance.

2.7.3.1 Develop and implement a monitoring and evaluation framework for appropriate indicators

- Establish and implement a functional M&E system.

2.7.3.2 Support research in the development of new prevention technologies

- Develop and support a research agenda on HIV-prevention technologies.

2.7.3.3 Create an enabling environment for research in support of the NSP

- Facilitate development in the research environment.

2.7.3.4 Development and promotion of research on behaviour change

- Support the evaluation of existing interventions and the development of new innovative programmes or interventions aimed at behaviour change for HIV prevention.

2.7.3.5 Develop and support a comprehensive research agenda including operations research, behavioural research, epidemiological trails and other research for new technologies for prevention and care

- Support research on the efficacy of orthodox medicines for HIV treatment and OI prophylaxis.
- Support research on the efficacy of traditional and complementary medicines for HIV treatment and OI prophylaxis.
- Support research on nutritional interventions for those infected or at risk of HIV infection.
- Conduct operations research in support of the implementation of the NSP.
- Support research to develop best practice models for community care and support.
- Conduct research on human resource requirements for the effective implementation of the NSP.
- Monitor funding for the NSP and its cost effectiveness.
- Enhance efforts to develop post-graduate research skills by tertiary institutions.
- Support capacity building in research, surveillance and monitoring among black and women professionals such that the appropriate demographics are achieved.

2.7.3.6 Conduct policy research

- Ensure that policy is evidence-informed and regularly updated.

2.7.3.7 Conduct regular surveillance

- Coordinate and strengthen surveillance systems on HIV, AIDS and STIs.

2.7.4 Key Priority Area 4: Human and legal rights

Stigma and discrimination continue to present challenges in the management of HIV and AIDS. This priority area seeks to mainstream programmes to mitigate these fundamental challenges.

Objectives of Key Priority Area 4: Human and legal rights are divided into four sections:

- Ensure public knowledge of and adherence to the existing legal policy provision.
- Mobilise society and build leadership of people living with HIV in order to mitigate against stigma and discrimination.
- Identify and remove legal, policy, religious and cultural barriers to effective HIV/AIDS prevention, treatment and support and focus on the human rights of women and girls, including people with disabilities.
- Mobilize society to promote gender and sexual equality to address gender-based violence.

2.7.4.1 Ensure public knowledge of and adherence to the existing legal and policy provisions

- Ensure adherence to existing legislation and policy relating to HIV and AIDS, particularly in employment and education.
- Ensure adherence to human rights by service providers.
- Ensure a supportive legal environment for the provision of HIV and AIDS services to marginalized groups.
- Monitor and address HIV-related human rights violations.
- Improve affordability and accessibility of legal services for people with HIV.

2.7.4.2 Mobilise society, and build leadership of people living with HIV in order to mitigate against stigma and discrimination

- Empower PLHIV to recognise and deal with human rights violations.

- Ensure respect for the rights of PLHIV in employment, housing, education, insurance and financial services and other sectors.
- Promote greater openness and acceptance of PLHIV.

2.7.4.3 Identify and remove legal, policy, religious and cultural barriers to effective HIV prevention, treatment and support

- Minimise the risk of human rights violations from cultural, religious and traditional practices.

2.7.4.4 Focus on the human rights of women and girls, including people with Disabilities, and mobilize society to promote gender and sexual equality to address gender-based violence

- Reduce legal constraints to access to Social Security Services for women and children.
- Ensure implementation of existing laws and policies that protect women and children from gender-based violence.
- Address the needs of women in abusive relationships.
- Ensure that laws, policies and customs do not discriminate against women and children.

The NSP (National Strategic Plan) (2007) sets out a clear framework for ongoing monitoring and evaluation. Ambitious but realistic targets have been set for each of the identified interventions. It identifies critical research and surveillance activities to be carried out during the five-year period.

Whilst implementation of the NSP is a collective responsibility of the South African “community”, effective implementation depends largely on the quality of information that is collected and reported from all sectors and by all implementing agencies. Preliminary costing of the main elements is included, and a commitment is made to raise funding from government, business, and the various development partners.

In conclusion, the NSP must be seen as a dynamic living document that will be subject to regular critical review. It is believed that when all partners, led by SANAC (South African National AIDS Council) and with technical support from the Department of Health, pull together and rally around the identified interventions, the two main aims, that of reducing new infections and mitigating the impact of AIDS on millions of people's lives, will be realised (NSP, 2007:17).

2.8 SUMMARY

Southern Africa remains the region worst affected by the HIV/AIDS epidemic. The HIV/AIDS pandemic is not merely a medical issue. It has highlighted gender inequalities; sexual violence and the abuse of women and children; breakdown of the family; sex worker industry; unemployment; lack of education; and taboos and stigmas. HIV/AIDS has been the cause and result of all these issues and therefore cannot be addressed in isolation. Significant shifts in attitude and behaviour have to take place to tackle the virus and to encourage people to develop a sense of self-worth, to be more responsible for their actions and show respect for others.

AIDS is the fatal condition that results from infection with the HIV virus, which progressively damages the body's ability to protect itself from disease organisms. Death is not caused by HIV itself but by one or more opportunistic infections. HIV/AIDS can be broken into four distinct stages: primary infection, clinically asymptomatic stage, symptomatic HIV infection and progression from HIV to AIDS. An AIDS diagnosis is made if the CD4 viral load test results are below 200 cells/mm³.

The most significant recent development in the HIV/AIDS struggle is the decision taken by government to provide ARV therapy to the public health sector. The treatment reduces morbidity and mortality levels, but also brings with it a set of new challenges that include overcoming capacity constraints within the public health sector and issues of treatment literacy for patients to ensure treatment compliance and the avoidance of the emergence and spread of drug resistance strains of the virus.

ART is not a cure for HIV/AIDS, but it can stop people from becoming ill. The aim of ART is to keep the amount of HIV in the body at a low level. The primary goal of ART is to decrease HIV-related morbidity and mortality and improve quality of life. The CD4 count should rise and remain above the baseline count and the patient's viral load should become undetectable.

South Africa currently has more people living with HIV/AIDS than any other country. For millions of South African families, HIV means dramatic reduction of income, because it generally affects the economically active member of the household. Since the working age population will bear the brunt of the impact, HIV/AIDS is bound to have an adverse impact on the economy. HIV/AIDS presents a heavy burden on public finances, particularly for the health sector. The vast majority of HIV/AIDS patients is not covered by medical schemes, and will look at public funded hospitals for medical care. The financial strain on the public health sector will be severe, not only as a result of the sheer number of people seeking medical care, but also because healthcare for HIV/AIDS patients is more expensive than for most other conditions.

HIV/AIDS increasingly affect the poor and people with low levels of education. The severity of the epidemic is closely linked to a region's poverty, low status of women, and other socio-economic factors. The low status of women in some cultures implies that gender is also a factor in HIV/AIDS. Women are more vulnerable to HIV/AIDS-infection than men, largely as a result of women's lower position in the hierarchy of traditional societies, powerlessness and lack of adequate information about the disease. HIV/AIDS-related stigma not only makes it more difficult for people trying to come to terms with and manage their illness on a personal level, but it also interferes with attempts to fight the HIV/AIDS epidemic as a whole. On a national level, the stigma associated with HIV/AIDS can deter governments from taking fast, effective action against the epidemic, whilst on a personal level it can make individuals reluctant to access HIV/AIDS testing, treatment and care.

South Africa's response to HIV/AIDS has evolved significantly. Government is committed to providing a comprehensive package of care for HIV/AIDS, and has

taken steps to provide ART to patients in the public sector. Government's response to HIV/AIDS covers the full range of interventions including; information, education and communication, prevention programmes, and including access to barrier methods, increased access to voluntary counselling and testing, prevention of mother-to-child transmission of HIV/AIDS, robust nutritional interventions and emphasis on individual choice of treatment. Mounting an effective ART programme requires more than just drugs. Establishing an adequate cadre of well-trained healthcare professionals is critical for success of this programme. This will ensure the highest possible standard of care for all South Africans. The goal is to provide safe, sustainable and effective care to all citizens of South Africa, and to achieve sustainable organisational excellence through healthcare delivery. Government has identified four KPAs needed to reach its goals. These are prevention, treatment, care and support, human and legal rights and monitoring, research and surveillance.

To achieve these goals, and to achieve organisational excellence through healthcare delivery, patient adherence in taking their medication is the key to the success of this programme. Treatment preparedness and support for patients commencing ARV therapy is therefore imperative.

The next chapter will highlight the socio-economic impact that HIV/AIDS has in South Africa, and specifically in the North West province.

CHAPTER 3

SOCIO-ECONOMIC IMPACT OF HIV/AIDS

"HIV/AIDS does not kill suddenly, but it comes and takes a lot of money away with it"

(Donahue *et al.*, 2001:1)

3.1 INTRODUCTION

HIV and AIDS affect economic growth by reducing the availability of human capital. Without proper nutrition, healthcare and medicine that are available in developing countries, large numbers of people are falling victim to HIV/AIDS. They will not only be unable to work, but will also require significant medical care. The forecast by Alam *et al.* (2005:5) is that this will likely cause a collapse of economies and societies in countries with a significant HIV/AIDS population. In some heavily infected areas, the epidemic has left behind many orphans cared for by elderly grandparents.

The increased mortality in all regions will result in a smaller skilled population and labour force. This smaller labour force will be predominantly young people, with reduced knowledge and work experience leading to reduced productivity. An increase in workers' time off to look after sick family members or for sick leave will also lower productivity. Increased mortality will also weaken the mechanisms that generate human capital and investment in people, through loss of income and the death of parents. By killing off mainly young adults, HIV/AIDS seriously weakens the taxable population, reducing the resources available for public expenditures such as education and health services not related to AIDS, resulting in increasing pressure for the state's finances and slower growth of the economy. This results in a slower growth of the tax base, an effect that will be reinforced if there are growing expenditures on treating the sick, training (to replace sick workers), sick pay and caring for AIDS orphans. This is especially true if the sharp increase in adult

mortality shifts the responsibility and blame from the family to the government in caring for these orphans (World Bank, 2008).

Available data by Bonnel (2000), BER (2006), Rosen and Simon (2002), and Sanson *et al.* (2004) suggest that South Africa has one of the highest per capita HIV/AIDS prevalence and infection rates and is experiencing one of the fastest growing HIV/AIDS epidemics in the world. It is expected that HIV/AIDS will impact on the economy in a number of ways. The impact may be direct, as when a household loses an income earner or a company loses a manager through HIV/AIDS, or indirect, as when large numbers of the population are affected by HIV/AIDS with negative consequences for the gross domestic product (GDP) of a country (Van Aardt, 2004:5; Anon., 2008g).

This chapter contains specific findings on research conducted on the socio-economic impact of HIV/AIDS on South Africa and specifically the North West province. This chapter describes the increased financial burden on government's health sector and the negative impact of HIV/AIDS on government's staff. It summarizes the cost implications of HIV/AIDS on government and calculates the total cost of ART per patient. It also discusses social grants, patient defaulting and the cost of patient defaulting which is one of the main objectives of the study. The impact that HIV/AIDS has on the economy of South Africa will be discussed in the next section.

3.2 IMPACT OF HIV/AIDS ON THE SOUTH AFRICAN ECONOMY

In South Africa, where more than twenty percent of the population is living with HIV/AIDS, the economic toll of the epidemic is mounting. Increasingly, the vast number of South Africans infected and affected by HIV/AIDS, are struggling to cope with illness and death while trying to manage increased financial burdens, a major consequence of the epidemic. The impact of HIV/AIDS is particularly striking among rural communities, where the desperate cycle of increasing medical bills and declining productivity often plunges already vulnerable households into economic ruin.

The HIV/AIDS epidemic poses a severe threat to the economies of developing countries, and those on the African continent in particular. South Africa, which is being affected fundamentally by the epidemic, is no exception. By the end of 1997, an estimated 2,8 million adults in South Africa were living with HIV/AIDS. By 2001, this figure had increased to 4,7 million. The estimated prevalence of HIV/AIDS among the country's adult population (20,1 percent) is among the highest in the world (ILO, 2000; UNAIDS, 2000). According to the Metropolitan-Doyle Model (in Desmond *et al.*, 2000:9), the annual number of AIDS deaths are estimated to increase from 120 000 to between 545 000 and 635 000 between 2000 and 2010. The number of children younger than fifteen years orphaned by HIV/AIDS had been estimated to be 800 000 by 2005, rising to more than 1,95 million by 2010 (ABT Associates, 2000: 8-11).

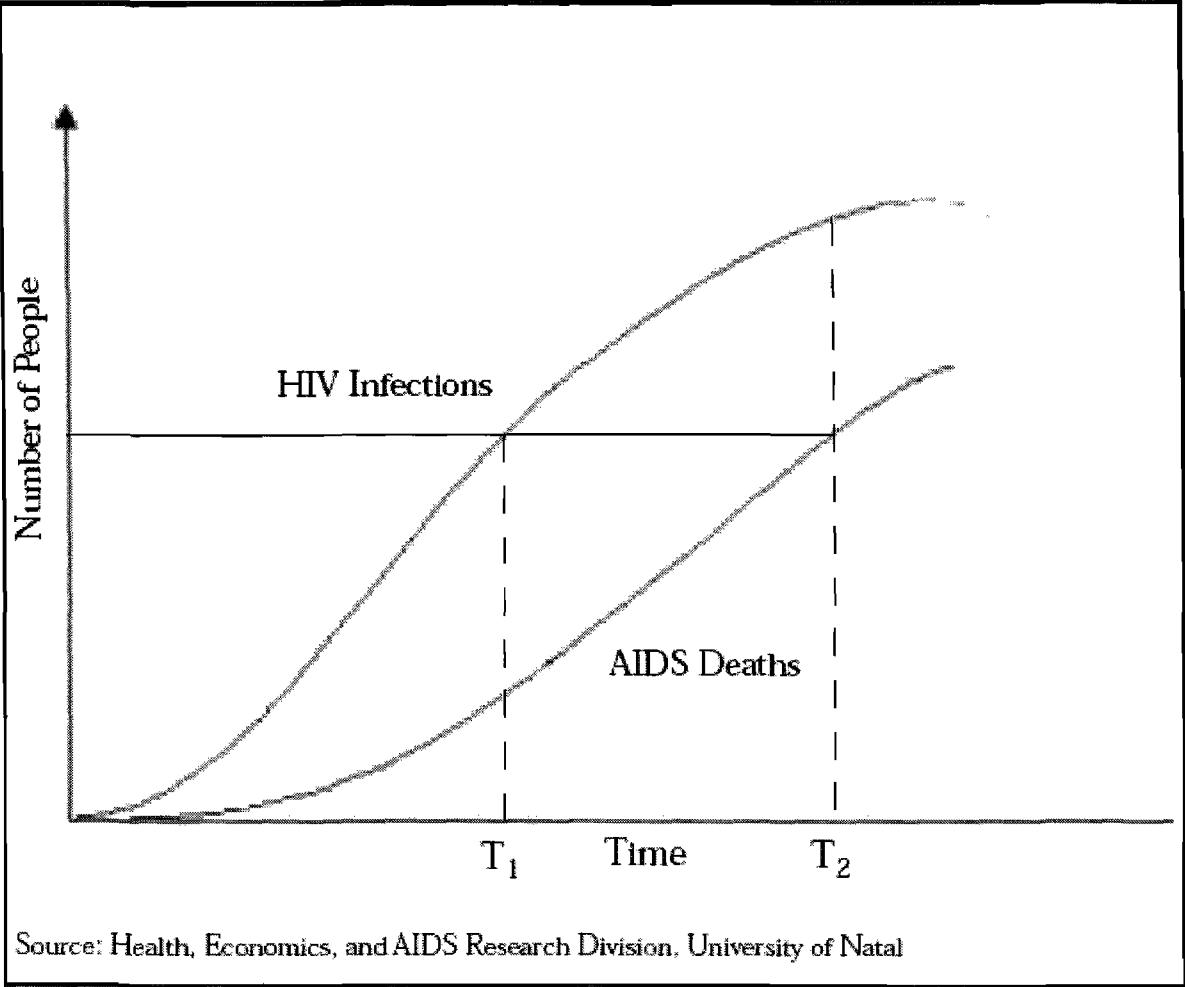
In the case study area, the North West province (Lichtenburg region) in South Africa, HIV/AIDS is one of the major stressors for people's livelihoods, together with climate variability and food insecurity, leading to a high vulnerability. Most people in the area rely on state grants such as pensions or child/orphan grants, since agriculture alone is not sufficient to sustain the local economy. Death of the family member receiving the grant or sending money home can therefore have a devastating effect on a household, to the point of dissolution. Orphan children are usually accommodated by a household in the extended family. Other strategies for coping with stressors such as resource sharing or pooling of finances also rely on social networks in the community.

According to Barks-Ruggels (2001:8), the scale of the epidemic in Southern Africa is particularly worrying given that this is the most developed part of Africa and it was hoped South Africa would be the continental powerhouse for economic development. In 1999, sub-Saharan Africa's gross domestic product (GDP) was \$324 billion. Of this total, South Africa produced \$131.1 billion – over one third. The average sub-Saharan African per capita annual income is \$490 while in Botswana it is \$3 240, South Africa \$31 70, Namibia \$1 890 and Swaziland \$1 350. It may be that this relative wealth, combined with the gross inequality of incomes within these countries, which is not reflected in the composite figures, has played a role in the development of the epidemic. HIV prevalence levels are a harbinger of the AIDS epidemic, with

sickness and death due to AIDS following the HIV-infection curve by several years (see figure 3.1). HIV/AIDS prevalence can, therefore, be used to project the number of future illnesses, deaths, and orphans, but cannot predict what the effects of increased morbidity and mortality will be for business and national economies in the medium and long term.

Figure 3.1: The two epidemic curves show that HIV-infection moves through a population giving little sign of its presence. It is only later – when substantial numbers are infected – that AIDS deaths begin to rise. People do not leave the infected pool by getting better, as there is no cure. They leave by dying (of AIDS or other causes). The effect of life-prolonging ARVs is, ironically, to increase the pool of infected people. In Figure 3.1 the vertical axis represents numbers of infections or cumulative illnesses, and the horizontal axis time. At time T1, when the level of HIV is at A1, the number of AIDS cases will be very much lower, at B1. AIDS cases will only reach A2 (i.e. the same level as A1) at time T2. By then, years will have passed and the numbers of infected people will have risen even higher.

Figure 3.1: The two epidemic curves (Barks-Ruggels, 2001:2; Whiteside, 2002:317)



The HIV epidemic curve is the line that goes to point A1. Very often this is the only data researchers actually have. This data is used to calculate the adult prevalence rate, number of infections, illnesses, deaths and orphans, and to make projections of future HIV prevalence.

At best, one can measure current impact in the knowledge that it will get worse. Despite limited data, there is some evidence that HIV/AIDS is already increasing the cost of doing business. It is, in effect, a payroll tax, as companies pay direct costs for treatment of sick employees and more expensive health and insurance benefits, as well as the indirect costs of lower productivity, absenteeism and increased recruitment and training costs for replacement staff. Companies can, to some extent,

shift the costs of the epidemic onto the public sector. For example, when health and life insurance costs rise, some companies will be forced to reduce benefits and people will seek care from the public sector. However, in many developing countries the public sector is dysfunctional, so the social, health, and financial burdens often fall on households and families. In addition, Government faces the same increased mortality and morbidity among infected staff as the private sector, reducing the public sector's ability to maintain the expertise needed to respond to the epidemic (Barks-Ruggels, 2001:4; Whiteside, 2002:317).

At the aggregate level, the impact of HIV/AIDS has elements consistent with endogenous growth theory. The spread of HIV/AIDS reduces labour productivity, raises private and public consumption, and thereby reduces income and savings. With lower savings, the rate of investment falls, reinforcing the decline in economic growth. The loss of labour productivity occurs because a larger share of the workforce becomes debilitated and dies, causing organisations to lose workers with critical skills. The spread of HIV/AIDS reverses that process as organisations experience disruption, and declining income undercuts the earlier gains achieved through specialization and the division of labour.

A factor accelerating this trend has been the erosion of economic incentives to deepen capacity. With current treatment protocols, the majority of individuals in South Africa who are HIV-positive (or think they may be) face dramatically shortened life spans. This raises the opportunity cost of additional training, because few of the costs incurred will be recouped in higher subsequent earnings. The same logic applies to employers who might otherwise support further training of their employees. Forbidden by law from discriminating, employers have to assume that the average productive life span of anyone they train will decline, which directly reduces the incentive to support long-term training. Without such training, capacity cannot be deepened (Barks-Ruggels, 2001:5; Tladi, 2006:369; Smith, 2007:1, 3-4).

In Section 3.3 the direct impact of HIV/AIDS on families and households will be discussed, and Section 3.4 will focus on the impact on government and government's supply.

3.3 SOCIO-ECONOMIC IMPACT OF HIV/AIDS ON SOUTH AFRICAN HOUSEHOLDS

The Bureau of Market Research projects that HIV/AIDS will impact significantly on household income and expenditure, as well as on national income in South Africa during the period 2004 to 2015. Currently, about a third of South African households are infected and/or affected by HIV/AIDS and this already high percentage is expected to increase significantly during the period 2004 to 2015. The term 'infected' denotes a situation where at least one member of a family is HIV-positive. 'Affected' implies that the household has to care for at least one member infected with HIV/AIDS or an AIDS orphan. This state of affairs will have strong income and expenditure impacts on millions of households in South Africa with a consequent detrimental effect on national income. This is one of the alarming findings in a report by the Bureau of Market Research (BMR) of the University of South Africa (UNISA) titled *The projected economic impact of HIV/AIDS in South Africa: 2003 to 2015* (Van Aardt, 2004:8).

Infected individuals and affected children all belong to individual households (meaning that an even larger number of people are affected by the epidemic in some way) and their deaths will have a significant impact on their families. Poverty, moreover, is likely to deepen as the epidemic takes its course. The socio-economic impact of HIV/AIDS combines to create a vicious cycle of poverty and HIV/AIDS in which affected households are caught up. As adult members of the household become ill and are forced to give up their jobs, household income will fall. To cope with the change in income and the need to spend more on healthcare, children are often taken from school to assist in caring for the sick or to work so as to contribute to household income. Because expenditure on food comes under pressure, malnutrition often results, while access to other basic needs such as healthcare, housing and sanitation also comes under threat. Consequently, the opportunities for children for their physical and mental development are impaired. This acts to further reduce the resistance of household members and children (particularly those that may also be infected) to opportunistic infections, given lower levels of immunity and

knowledge, which, in turn, leads to increased mortality (World Bank, 1998; Bonnel, 2000:5-6; Wekesa, 2000:13). Households headed by HIV/AIDS widows are also particularly vulnerable, because women have limited economic opportunities and traditional norms and customs may see them severed from their extended family and denied access to an inheritance (UNDP, 1998).

According to Van Aardt (2004:9), it appears that there will be a steady percentage decline in household expenditure due to HIV/AIDS over the period 2004 to 2012. The most sizeable percentage decline in expenditure on agricultural products is anticipated with regard to meat products (5,1 percent), followed by other agricultural products (3,0 percent), and fish products (2,2 percent) by 2012. The major reason for the strong impact of HIV/AIDS on these products is that the lower income groups that are the predominant consumers of these products are also those most affected by HIV/AIDS. Where household and total consumption expenditure on durables, semi-durables and nondurables are expected to decline, HIV/AIDS will give rise to increased household expenditure on a wide range of services. It is projected that by 2012 households will be spending about 3,5 percent more on transport, 4,2 percent more on insurance services, 4,8 percent more on health and social services, and about 4,7 percent more on other services (for instance, funeral services) than would have been the case in a non-HIV/AIDS scenario. The reasons for not projecting even more significant impacts on healthcare, insurance, transport and funeral expenditure, are that household income and expenditure will be constrained due to HIV/AIDS (as discussed earlier) and people infected and affected by HIV/AIDS will increasingly rely on government health and other services, thereby greatly shifting the expenditure burden onto government.

A worrying trend is that firms are increasingly using contract labour rather than appointing employees on a permanent basis, which increasingly shifts the burden of HIV/AIDS onto households and government (Rosen & Simon, 2002). This also means that HIV/AIDS-affected households (and in particular infected persons) may find it increasingly difficult to find employment and remain in employment, which is crucial for ensuring some kind of economic security at the household level. In many

third world situations, therefore, HIV/AIDS exposes already vulnerable, resource-poor households to further shocks. These are all ways in which HIV/AIDS can cause poverty to increase. (See also discussion of poverty in section 2.6.1.) Whiteside (2001:2) describes the above linkages between HIV/AIDS and poverty in considerably more detail, but then goes on to point out that poverty can also result in increased vulnerability to HIV/AIDS, which in turn can aid the spread of the disease. Poverty, apart from being associated with poor nutrition and a breakdown of immune systems, also stand to increase the vulnerability of people to HIV/AIDS by resulting, amongst others, in unsafe sexual practices as a result of lack of knowledge and lack of access to means of protection, due to women's inability to negotiate about condom use with sexual partners as a result of entrenched gender roles and power relations, and because of violence and coercion (Whiteside, 2001:2). In fact, both Desmond (2001:58) and Whiteside (2002:319) emphasize how complex the relationship between poverty and HIV/AIDS actually is and how many facets it has, e.g. how labour migration induced by rural poverty can contribute to the spread of the disease and how poor, single mothers may be forced to become occasional sex workers in order to survive (Desmond, 2001:54). Moreover, they highlight the importance of homelessness, urban/rural migration patterns, migrant labour practices and the breakdown of social support networks in communities with limited access to social service delivery, and in developing countries in increasing the vulnerability of poor people to HIV/AIDS.

With the abovementioned HIV/AIDS impact that puts more pressure on government, section 3.4 investigates the impact of HIV/AIDS on the government and its supply goals to relieve the building pressure.

3.4 THE INCREASING FINANCIAL BURDEN ON GOVERNMENT

As the world grapples with the seemingly unstoppable spread of the HIV/AIDS epidemic, a public health experiment of unprecedented scale is taking place in sub-Saharan Africa. Governments of countries spanning the continent from Lesotho to Ghana are initiating large scale prevention and treatment programmes for HIV/AIDS. Drugs, diagnostic tests, clinic and laboratory infrastructure, and training of medical personnel are being paid for by a combination of domestic funds mobilized by African governments and international donor contributions. While these funds, which reach into the billions of dollars, will pay for antiretroviral therapy for many thousands of HIV-positive Africans, there is almost no chance that African countries will have the human, infrastructural, or financial resources to treat everyone who is in need, especially in the early years of the experiment (Collier *et al.*, 2004:3).

It is projected that the decline in gross domestic product (GDP) due to HIV/AIDS by 2015 will be between 1,3 percent (low variant) and 6 percent (high variant), with a medium variant of about 3,7 percent. The level at which any of the three variants will manifest itself will depend essentially on two factors, namely (1) the level at which antiretroviral medication will be provided to HIV-positive people during the period 2003 to 2015; and (2) the level of capital intensification and export orientation in the South African economy; i.e., a more capital intensive export oriented economy will be less severely impacted on by HIV/AIDS than a labour intensive economy that is very dependent on the local consumer market (Van Aardt, 2004:9).

According to the Bureau for Economic Research (BER) (BER, 2006:39), one of the most visible consequences of the epidemic will be the increase in the number of people seeking medical care. Furthermore, the BER (2006:39) states that only \pm 15 percent of South Africa's population is covered by employment related and other private medical schemes. The vast majority of HIV/AIDS patients will look towards publicly funded hospitals for medical care. Public hospitals are funded out of general tax revenue and essentially provide medical services free of charge. The financial strain on the public health sector will be severe, not only as a result of the sheer number of people seeking healthcare, but also because healthcare for HIV/AIDS patients is more expensive than for most other conditions. HIV/AIDS will also put

upward pressure on other forms of social spending by the government, such as care dependency, disability and foster care grants.

The increased financial burden stemming from higher public healthcare and an increase in the demand for social spending will probably coincide with reduced government tax revenues. Increased costs as a result of HIV/AIDS will have an adverse impact on economic growth and reduce private sector profits, indicating an erosion of the tax base and lower revenues. It thus becomes apparent that HIV/AIDS will create pressure on the budget deficit on two fronts: higher health and other social expenditure, and lower government revenues (BER, 2006:40).

The implication of the increasing demands of HIV/AIDS on national health budgets was summarised by the Africa Faith & Justice Network in 2001 as a fragile healthcare system that has thus been unable to cope with the ensuing spread of infection. The sudden influx of patients has brought many hospitals to the brink of collapse. This is true throughout Southern Africa for a variety of reasons. HIV/AIDS patients are flooding Southern African hospitals. In South Africa's Gauteng province, 50 percent of hospital beds are filled by HIV/AIDS patients. Chris Hani Baragwanath Hospital – the largest in South Africa and main service provider to Soweto – has seen a 500 percent increase in HIV-positive patients in the past five years (Cheek, 2001:3).

3.4.1 Effect of HIV/AIDS on government's human resources

The HIV/AIDS epidemic affects all levels and functions of government as an increasing number of government employees fall ill and die. Beyond the disruptions to public service associated with increased attrition rates, HIV/AIDS also affects the composition of government employees in various dimensions and the level of human capital available to the government. Also, because government employees generally enjoy some form of retirement, death-related and medical benefits, the government's personnel costs increase (Haacker, 2005).

The structural implications of HIV related mortality on public services is projected to be quite severe. Higher mortality and morbidity affect public services through higher

attrition and absenteeism of government employees affected by HIV/AIDS, and through lower productivity owing to their deteriorating health. More broadly, HIV/AIDS also results in higher absenteeism among those not infected – for example, as these workers are obliged to care for sick family members and to attend funerals, according to Haacker (2005). Staff mortality resulting from the disease could take the issue beyond absenteeism – requiring the need to replace lost staff or operate with fewer staff. Death from HIV/AIDS related opportunistic infections usually occurs after a long period of illness. During this period, while the infected person is still considered as a staff member of the sector, his/her work may either be left undone or may have to be done by other personnel in addition to their own work. This is because, apart from the physical loss of the personnel who die, work output can seriously degenerate due to low morale as other personnel go through emotional struggles to cope with the death of a colleague. Mortality could result in the loss of experienced labour and low quality of work as inexperienced personnel step in earlier than normal in their careers to do the work of experienced staff (SA, 2003a:13).

Training of healthcare professionals is also at risk. More significantly, HIV/AIDS is killing medical professionals. In Zambia and Malawi, doctors and nurses are dying faster than they can be trained (Karanja, 2000). Combined with the loss of medical practitioners due to burnout and brain drain, Southern Africa's ability to address the growing HIV epidemic is likely to be inhibited as much by a lack of trained professionals as by a lack of financial resources (Cheek, 2001:3).

3.4.2 Government's commitment to fight HIV/AIDS

In commemorating World AIDS Day, government reiterates that because there is still no cure for AIDS, prevention remains the core response. The government's comprehensive HIV and AIDS programme for prevention, treatment and care is one of the largest in the world. The HIV and AIDS budget allocation increased from R30 million in 1994 to over R3 billion in 2005/2006. In the 2003 report to the United Nations (UN) General Assembly Special Session on AIDS, the UN Secretary General Kofi Annan commended South Africa for tripling its resource allocation for HIV and AIDS programmes since the adoption of the UN Declaration of Commitment

on HIV and AIDS in 2001. The World Health Organisation (WHO) progress report on the expansion of AIDS treatment, released in June 2005, notes that South Africa has committed US\$ 1 billion over the next three years to scaling up antiretroviral treatment – by far the largest budget allocation of any low- or middle-income country (South African Government Information, 2006).

In 2000, the former Minister of Health, Dr Manto Tshabalala-Msimang challenged the country to break the AIDS chain. The 2000 - 2005 National Strategic Plan outlined some key interventions to bring the country close to the realisation of this vision. Five years later much has been done, much achieved. More could have been done in some areas. There is no reason to doubt the commitment demonstrated by government and its partners in the fight against HIV and AIDS. The indications are that the country is indeed on course towards breaking the AIDS chain. The rate of the increase in prevalence of HIV/AIDS has slowed down in the past five years, with a tendency to stabilisation. The downside is that these stabilisation rates are high, with many devastating impacts to the South African society in general. Realising this reality, the Cabinet approved the National Operational Plan for Comprehensive HIV and AIDS management, treatment, care and support in 2003 (SA, 2003a). It is through the Comprehensive Plan that interventions to reduce the morbidity and mortality of HIV and AIDS were outlined and implemented with great enthusiasm by all partners.

South Africans are mobilised to fight the HIV and AIDS epidemic, government leading with relevant policies, programmes, and commitment of resources. More can still be done by civil society to improve the manner in which they are organised for better efficiency. Individuals and communities need to take charge.

These achievements should inspire everyone to work for even better results. The Strategic Plan defines clearly the nature of the South African HIV/AIDS problem. It identifies relevant key interventions to be carried out in order to reduce, by an ambitious but realistic magnitude, the rate of new HIV infections. It also recognises the plight of the many people that are living with HIV/AIDS and outlines relevant interventions to mitigate the impact of this disease on individuals, families, and communities. All of these things have to be done simultaneously. However, a

sustainable and effective national response to this epidemic is one that has HIV/AIDS prevention as its fulcrum. The success of prevention interventions depends largely on collective societal commitments that support individual behaviour change – a responsibility of all South Africans (Mlambo-Ngcuka, 2007:4). (Also refer back to section 2.7, government's commitment to fight HIV/AIDS and the KPAs.)

3.4.2.1 Goals of the National Strategic Plan (NSP) 2007-2011

The primary aims of the (NSP, 2007:39-40) are to:

- Reduce the number of new HIV/AIDS infections by 50 percent; and
- Reduce the impact of HIV/AIDS on individuals, families, communities and society by expanding access to appropriate treatment, care and support to 80 percent of all people diagnosed with HIV.

In particular, young people in the age group 15 - 24 should be the focus of all the interventions, especially for behaviour change-based prevention. The interventions that are needed to reach the aims of the NSP are structured according to the following four key priority areas:

- Prevention;
 - Treatment, care and support;
 - Human and legal rights; and
 - Monitoring, research and surveillance.
- (as discussed previously in section 2.7).

Priority area 1: Prevention

The target is to reduce the national HIV/AIDS incidence rate by 50 percent by 2011. Identifying and keeping HIV/AIDS negative people negative is the most effective and sustainable intervention in the HIV/AIDS response. (The unavailability of incidence measures is a cause for uncertainty regarding the reliability of monitoring targets in this regard. Monitoring incidence will be informed by modelling work for quite some time in the NSP-period.)

It is thought that as much as 85 percent of the South African HIV/AIDS epidemic is caused by heterosexual spread. Vertical transmission from mother to child and less frequently, transmission associated with blood products, account for the rest of the infections. The HIV/AIDS epidemic is complex and diverse; and although not fully understood, is known to be driven by many behavioural, social, and biological factors that both exacerbate and/or facilitate the spread of HIV/AIDS. It is unlikely that the society will be able to keep up with the demand for health and social services unless there is a significant slowing down in the incidence of newly infected individuals. This situation underscores the central role and importance of HIV/AIDS prevention.

Goal 1: Reduce vulnerability to HIV infection and the impact of AIDS.

Goal 2: Reduce sexual transmission of HIV.

Goal 3: Reduce mother-to-child transmission of HIV.

Goal 4: Minimise the risk of HIV transmission through blood and blood products.

Priority area 2: Treatment, care and support

The target is to provide an appropriate package of treatment, care and support services to 80 percent of HIV-positive people and their families by 2011 in order to reduce morbidity and mortality as well as other impacts of HIV/AIDS.

Key to meeting these targets are:

- Establishing a national culture in which all people in South Africa regularly seek voluntary testing and counselling for HIV. This will necessitate a paradigm shift in healthcare provision where HIV testing is routinely offered to people attending health services, as well as the identification of new strategies for the provision of counselling and testing outside of health facilities.
- Strengthening the health system so as to create the conditions for universal access to a comprehensive package of treatment for HIV, including antiretroviral therapy, and the integration of HIV and

tuberculosis care. The complexity of maintaining more than one million people on antiretroviral therapy at high levels of adherence will emerge as a key medium term challenge and will require systems and resources. This underscores the critical need to ensure that investments in treatment build the capacity of the health system more generally and also contribute to strengthening prevention.

- Draw on and disseminate the growing body of experience and innovation in care, treatment and support strategies across the country, in both public and private sectors. Focus on specific issues and groups: the prevention-of-mother-to-child transmission, the care of children and HIV-infected pregnant women, and wellness management of people before they become eligible for ART.
- Ensure the effective implementation of policies and strategies to mitigate the impacts of HIV, in particular orphans and vulnerable children, youth headed households, and on the health and educational system as well as support to older people.

The goals for treatment, care and support are structured principally around these key challenges as follows:

Goal 5: Increase coverage of voluntary counselling and testing and promote regular HIV testing.

Goal 6: Enable people living with HIV to lead healthy and productive lives.

Goal 7: Address the special needs of women and children.

Goal 8: Mitigate impacts of HIV and AIDS and create an enabling social environment for care, treatment and support.

Priority area 3: Research, monitoring and surveillance

Goal 9: Develop and implement a monitoring and evaluation framework for appropriate indicators.

Goal 10: Support research in the development of new prevention technologies.

Goal 11: Create an enabling environment for research in support of NSP.

Goal 12: Develop and promote research on behavioural change.

Goal 13: Develop and support a comprehensive research agenda.

Goal 14: Increase policy research.

Priority area 4: Human rights, access to justice and law reform

HIV/AIDS is a human rights issue. A major objective of the NSP is to create a social environment that encourages many more people to test voluntarily for HIV and, when necessary, to seek and receive medical treatment and social support. Respect for and the promotion of human rights must be integral to all the priority interventions of the NSP. But in addition, active and ongoing campaigns that promote, protect, enforce and monitor human rights must be linked to every intervention and mounted at district, provincial and national level. The NSP identifies a range of activities to improve access to justice, in order that people can challenge human rights violations immediately and directly. It sets out issues for law reform in order to create a legal framework that uniformly assists HIV prevention, treatment, research and surveillance.

Goal 15: Conduct regular surveillance.

Goal 16: Ensure public knowledge of and adherence to the legal and policy provisions.

Goal 17: Mobilise society, and build leadership of people living with HIV in order to mitigate against stigma and discrimination.

Goal 18: Identify and remove legal, policy, religious and cultural barriers to effective HIV prevention, treatment and support.

Goal 19: Focus on the human rights of women and children.

(NSP, 2007: 56-59).

These resources help make an impact in combating HIV/AIDS in the following six sections: prevention, nutrition, testing and treatment, care and support, human resources and health system and research.

3.4.2.2 Prevention

- Very high levels of awareness and stable levels of prevalence;
- Life-skills education with trained teachers in almost every school;
- Behaviour changes attributable to secondary abstinence amongst females up from 13,9 percent in 2002 to 20 percent in 2005; and condom use amongst those with multiple partners increasing from 48,6 percent in 2002 to 79,1 percent in 2005;
- Public health sector male condom distribution that has increased from 270 million in 2003 to 346 million in 2004; and female condom distribution that rose from 1,3 to 2,6 million during the same period;
- Almost universal access (97 percent) to condoms, according to the 2005 Behaviour and Communication survey, with government hospitals and clinics being the main source of availability; and
- A programme for prevention of mother-to-child transmission (PMTCT), with 3 000 facilities and post-exposure prophylaxis (PEP) available in almost all hospitals and trauma centres for sexual assault survivors.

3.4.2.3 Nutrition

- Nutrition remains a critical element for all communities and especially those living with HIV and AIDS.
- Nutritional supplements are provided to those who need them, as part of the comprehensive response to HIV/AIDS, as a complement to appropriate forms of treatment.

- Some 329 000 people have accessed this service since April 2004. R10 million was made available for purchasing nutrition supplements in the 2004/05 financial year.

3.4.2.4 Testing and treatment

- A total of 199 public health facilities now provide HIV/AIDS related services, including antiretroviral drugs. These facilities are found in all the country's 53 districts and cover at least 62 percent of local municipalities.
- 85 000 people enrolled for ARV treatment in the public health sector by September 2005 – and more than R3,4 billion were allocated for procurement of antiretroviral drugs for the period to the end of 2007.
- There was an increase in people tested from 511 843 in 2003/04 to 1 019 476 during 2004/05.

3.4.2.5 Care and support

- Support and care for those affected by HIV/AIDS are expanding through increased social grant registration and increases in the grants, as well as expanding home and community-based care programmes.
- A total of 25 034 home-based care trainees (including voluntary counselling and testing (VCT) lay counsellors) have been, or are being trained, with a Regional Training Centre in the Eastern Cape and other training done by NGOs.
- The Khomanani communication campaign continues to reach out to communities through its radio, road shows and television advertisements.
- Infrastructure were created to support and sustain counselling, testing, care and treatment across the country.
- A doubling of health facilities providing voluntary counselling and testing (VCT) from 1 500 in 2002/3 to 3 686 in 2004/5 occurred. The number of people counselled for testing in the public sector rose from 691 000 in 2002/3 to 1 319 009 in 2004/5.

- Over 1 060 health professionals were recruited to support programmes.
- A total of 7 600 health professionals were trained in management, care and treatment of HIV and AIDS.
- There are 61 088 community care givers of whom 25 034 are receiving stipends.
- Government is improving working conditions so it can recruit and retain more health professionals. This includes a scarce skill allowance for certain categories of health professionals (doctors, pharmacists and specialist nurses) and a rural allowance for health professionals working in less developed parts of the country. This is in addition to steadily improving salary packages.

3.4.2.6 Research

- Government supports research on development of vaccines and other prevention technologies.
- Government is also investing in research on other forms of treatment including traditional medicines that have potential to alleviate symptoms associated with AIDS.

Critical to implementation is an active partnership of all society with government. This partnership is embodied in the South African National AIDS Council (SANAC) and expressed in action which sees government, communities, about 20 sectors of society and non-governmental organisations (NGOs) working together to implement all aspects of the comprehensive plan. Government programmes are complemented by private sector, NGO and civil society initiatives. There is hope; together in partnership we can overcome HIV/AIDS (South African Government Information, 2006:3) (see Appendix A: NSP KPAs).

3.5 THE COST OF GOVERNMENT'S IMPLEMENTATIONS

As important as equity in the allocation of resources is the need to ensure that the funds allocated to health are sufficient to provide adequate levels of healthcare. A good estimate of the costs of providing health services is invaluable in guiding resource allocation to health, to ensure that the desired level of health service provision is achieved.

The national Department of Health has set the target of having just over one million patients on ART by March 2009 (SA, 2003b). Based on primary cost and utilisation data, a study done on antiretroviral treatment and primary healthcare services in 2005, has calculated the resources required to meet these patient targets over the March 2004 to March 2009 period. Estimates include the full costs of delivering ART, treating patients on ART for opportunistic infections and HIV-related illnesses at clinics or community health centres, and the costs of providing nutritional supplements. Although they acknowledge that patients on ART could require other services such as hospital care and tuberculosis treatment, these costs have been excluded from the current estimates. The results are compared to the current HIV and AIDS Conditional Grants over the Medium Term Expenditure Framework (MTEF) and estimates of clinical human resource needs are provided (Boulle *et al.*, 2005: 60; Cheek, 2001:14).

Quality of care is one of the fundamental principles in the study to achieve organisational excellence. The next section will discuss the cost of ART rollout, the significant investment to ensure that the highest available quality of care is provided to the people of South Africa in line with international and local norms and standards. The 2005 study done by Boulle *et al.* on financing antiretroviral treatment and primary healthcare services will be used throughout section 3.5 as a benchmark of current estimated expenditure levels of ART.

3.5.1 Antiretroviral treatment (ART) rollout

The proposed scope of care for patients encompasses a broad range of treatment options that include proper diagnosis, counselling, treatment of opportunistic infections (in particular tuberculosis and sexually transmitted infections), other preventive and supportive strategies such as nutrition and nutritional supplements and traditional and complementary medicines with immune-boosting properties, as well as anti-retroviral drugs for the management of HIV/AIDS.

A variety of data have been used to calculate the costs of delivering ART including:

- The cost per comprehensive ART visit and the average utilisation of visits by patients on ART and immediately prior to commencing ART;
- The costs of nutritional supplements and average utilisation of supplements;
- The costs and utilisation of first and second-line antiretroviral drug regimens;
- The costs and utilisation of laboratory testing;
- The expected average life expectancy of a patient on ART and the anticipated duration of first and second-line antiretroviral regimens; and
- The numbers of patients entering care on an annual basis.

Each element will be discussed in detail below. Key assumptions that could not be derived from primary data (such as the uptake and cost of nutritional supplements and the overall rate of enrolment of patients) were based on estimates provided by the national Department of Health (Bouille *et al.* 2004:59, Collier *et al.*, 2004; Haacker, 2005).

3.5.1.1 The unit cost per comprehensive ART visit

The unit cost per ART visit (excluding antiretroviral drugs and laboratory testing) was based on the average cost per visit at three HIV/AIDS clinics in Khayelitsha that are jointly run by the provincial administration of the Western Cape and *Médecins sans Frontières*. These clinics commenced operation in April 2000 and started offering

ART in May 2001. Because this is the longest running public sector ART programme, it provides an opportunity to learn about the expenditure likely to be required to deliver ART to patients in other public sector settings. For the purpose of the study, it will be assumed that Ditsobotla sub-district, Lichtenburg, North West follows the same expenditure pattern. The information, figures and costs would be used to assess the cost of patient defaulting. The Ditsobotla sub-district empirical study will be analysed in Chapter 4.

The following items have been included in the cost per visit:

- Overheads (e.g. utilities, office supplies);
- Non-clinical staff (e.g. clerical staff and cleaners);
- Clinical staff (doctors, nurses, counsellors, pharmacists);
- Prophylactic and curative medicines;
- Capital (e.g. buildings and equipment);
- Cost of hospitalization; and
- Cost of treating opportunistic infections.

Costing was undertaken using standard methods in 2002 prices. These were updated to 2003/04 prices and adjusted to reflect increases in salaries including the scarce skills allowance. The costs of dieticians and social workers were included at an estimated reasonable workload. Table 3.1 shows a detailed breakdown:

Table 3.1: Unit cost per ART visit (R 2003/04 prices), excluding costs of ARV drugs and laboratory cost

ITEM	UNIT COST – R	%
Human Resources		
Doctor (Level 11)	37.88	
Doctor (Level 10)	10.79	
Sub-total Doctors	48.66	30
Nurses (Level 8)	6.31	
Nurses (Level 7)	11.18	
Sub-total Nurses	17.49	11
Counselling and adherence monitors	21.11	
Clinic management, logistics and administration staff	9.78	
Pharmacists and pharmacist assistants	1.35	
Clerical and data management staff	8.21	
Cleaners	1.63	
Social workers	5.37	
Dieticians/nutritionists	5.37	
Sub-total other human resources	52.94	33
Commodities and Products		
Medical and nutritional (e.g. condoms, medical consumables, multivitamins)	2.76	
Sub-total commodities and products	2.76	2
Medicines		
Curative Medicines	5.59	
Prophylactic Medicines	6.87	
Sub-total medicines	12.46	8
Planning and Administration		
Electricity, water, telecommunications	4.67	
Printing, stationery, maintenance, supplies	12.44	
Transport, Storage	1.62	
Sub-total planning and administration	18.73	12
Capital		
Infrastructure and equipment	7.33	
Sub-total capital	7.33	5
Total cost per comprehensive visit	160.37	100

(Source: Boule *et al.*, 2004:60).

Table 3.1 shows the cost per comprehensive visit of a patient per month, excluding costs of ARV drugs and laboratory cost. The cost for one ART visit comes to R160,37; the average visit schedule of an ART patient will be discussed in the next section.

3.5.1.2 Average visit schedule of patients on ART

According to research done by Boulle *et al.* (2004:60), the annual number of visits by patients in the Khayelitsha programme was estimated from a group of 670 patients with a maximum of 30 months on treatment (median of 15). To fill in data gaps, it was assumed that:

- Patients would have four clinic visits prior to commencing ART;
- Patients would access clinic services at the same frequency as they did between months 12 and 18 during later periods on ART; and
- After failing ART, patients would access services at the same frequency as they did prior to the commencement of ART services. (Table 3.2 contains details.)

3.5.1.3 Costs and utilisation of nutritional supplements

A month's supply of nutritional supplements costs R100 for adults and R31,90 for children. It was assumed that there would be a 55 percent uptake of supplements, of which 10 percent would be by children and the remainder by adults. These assumptions lead to an average weighted cost of R51,25 per month. It was assumed that patients would receive nutritional supplements on a monthly basis, coinciding with the appropriate clinic visit. (Table 3.2 contains details.)

Table 3.2: Average clinic visit schedule for ART and nutrition

		ART Visit	Nutrition
Pre-treatment	As required	4.0	4.0
First-line first six months	Begin Rx	1.0	-
	1 week	1.0	-
	2 weeks	1.0	-
	1 month	1.0	1.0
	2 months	1.0	1.0
	3 months	1.0	1.0
	4 months	1.0	1.0
	5 months	1.0	1.0
	6 months	1.0	1.0
Total for first six months including pre-treatment		17.1	10.0
Annually thereafter	Scheduled	10.0	10.0
	Intercurrent	0.6	2.0
Total for one year		10.6	12.0
Second-line first six months	Scheduled	5.0	5.0
	Intercurrent	0.3	1.0
Total for six months		5.3	6.0
Annually thereafter	Scheduled	10.0	10.0
	Intercurrent	0.6	2.0
Total for one year		10.6	12.0
Failing	Scheduled	10.0	10.0
	Intercurrent	4.5	2.0
Total for one year		14.5	12.0

(Source: Boulle *et al.*, 2004:61)

Table 3.2 shows the visit schedule for ART patients and the nutrition supplements received at each visit. According to table 3.2, the average amount of ART visits per year is 14.5 and the numbers of times a patient will receive nutritional supplements are an average of 12 times per year. Multiply the amount of visits (14.5) with the unit cost per ART visit in table 3.1, it gives a total of R2 325,36. Multiply the times that a

patient receives nutritional supplements (12 times) with the cost of supplying the supplement to adult patients (R100), it equals an amount of R1 200. The total amount of R3 525,36 for ART visits and nutritional supplements, not yet including other services or ART drugs, indicates how expensive treating HIV/AIDS is.

3.5.1.4 Costs and utilisation of first and second-line antiretroviral regimens

The national antiretroviral treatment guidelines (Simelela, 2004) specify that patients on first-line regimens will receive a nucleoside reverse transcriptase inhibitor (NRTI) backbone of 3TC and d4T with either efavirenz or nevirapine as the non-nucleoside reverse transcriptase inhibitor (NNRTI) (see section 2.4). However, d4T would be replaced by AZT for a small number of patients. Based on primary data, the study assumed that 40 percent of patients would be on nevirapine (NVP) and 60 percent on efavirenz (EFV). In the class of NRTIs, it was assumed that 95 percent would receive d4T and the remaining patients would receive AZT. All patients are assumed to receive 3TC as the second NRTI. In the second-line regimen, it was assumed that 95 percent of patients would receive AZT with ddI and 5 percent would receive d4T with ddI. All patients were assumed to receive lopinavir / ritonavir as the protease inhibitor. Patients failing the second-line regimen were assumed not to receive ARVs. ARV costs are based on prices agreed in the recently concluded tender for the supply of ARVs. A markup of 15 percent was placed on all ARV prices to cover procurement, distribution and stock management and it was assumed that paediatric ARV costs were 1.35 times higher than adult costs. Table 3.3 contains a summary of the proportion on each ARV, as well as the average annual cost in each period (Boulle *et al.*, 2004:61).

Table 3.3: Utilisation and costs of ARVs (R 2003/04 prices)

Medicine regimens							
Individual medicines in regimen							
First line				Second line			
First six months		Annually thereafter		First six months		Annually thereafter	
5 %	AZT	5 %	AZT	95 %	AZT	95 %	AZT
95 %	d4T	95 %	d4T	5 %	d4T	5 %	d4T
100 %	3TC	100 %	3TC	100 %	ddl	100 %	ddl
40 %	NVP	40 %	NVP	100 %	LPV/RTV	100 %	LPV/RTV
60 %	EFV	60 %	EFV				
Cost (annualised) including procurements and distribution							
2 830		2 830		7 297		7 297	

(Source: Boulle *et al.*, 2004:62)

Table 3.3 is a summary of the proportion on each ARV for first- and second-line therapy. It also contains the annual cost of each period. Table 3.3.1 contains the adult ARV regimens for adults.

Table 3.3.1: Adult ARV regimens and routine monitoring during treatment

Regimen	Drugs	Test	Frequency
1a	d4T/ 3TC/NVP	<ul style="list-style-type: none"> • CD4 • VL • ALT 	<ul style="list-style-type: none"> • Staging, 6 monthly • Baseline, 6 monthly • Baseline
1b	d4T/3TC/Efavirenz	<ul style="list-style-type: none"> • CD4 • VL 	<ul style="list-style-type: none"> • Staging, 6 monthly • Baseline, 6 monthly
2	AZT/DDI/ Lopinavir/Ritonavir	<ul style="list-style-type: none"> • CD4 • FBC • Fasting cholesterol 	<ul style="list-style-type: none"> • Staging, 6 monthly • Baseline, 1, 3, 6, continue 6 monthly • Baseline only

Table 3.3.1 summarises the different Adult ARV regimens. The criteria for initiation of antiretroviral therapy in non-pregnant adults and adolescents are: CD4 below 200

cells/mm³, or WHO stage IV AIDS defining illness. Patients must also be willing to comply with taking antiretroviral drugs. The specific antiretroviral drug regimens that are recommended for the various groups of patients are: Regimen 1a – first-line for men, women of child bearing potential, pregnant women and conditions where EFV is contraindicated (for instance, psychiatric diagnosis). Regimen 1b – alternate first-line for persons who develop NVP intolerance, has evidence of hepatotoxicity and other conditions where NVP is contraindicated (NVP must be avoided in pregnancy and women of childbearing potential). Regimen 2 – use as second-line for patients who ‘fail’ regimens 1a or 1b, or first-line in patients who have evidence of NVP resistance prior to ARV initiation.

- Staging = initial testing for all patients after testing HIV-positive
- Baseline = testing for ARV eligible patients, at initiation of ARVs

Table 3.3.2: ART drug prices

Regimen	Composition	Price
Regimen 1a	d4T + 3TC + EFV	R206.277
Regimen 1b	D4T + 3TC + NVP	R104.94
Regimen 2a	AZT + ddl + LPV/R	R765.21
Regimen 1az	AZT + 3TC + EFV	R263.582
Regimen 1bz	AZT + 3TC + NVP	R162.245

Source: King (2007)

Table 3.3.2 summarises the cost of each regimen of ART therapy per patient per ART visit. The cost of the individual ART drugs is given in table 3.3.3 below.

Table 3.3.3: Regime drug prices

ART DRUG	PRICE
d4T 30mg tablets	R23.745
d4T 40mg tablets	R25.807
3TC	R41.085
NVP	R40.11
EFV 600	R141.447
ddl 100	R92.233
LPV/R	R315.23
AZT	R81.05

Source: King (2007)

Table 3.3.3 indicates the cost of each ART drug per month. Because ART is so expensive, it is very important that a patient must be prepared to make choices for a lifelong commitment to taking ARVs, which may require not only education to gain understanding of potential side-effects and importance of adherence, but also psychosocial support. The well informed patient has the best chance of adherence to medication and optimizing the goals of ART, decreasing the risk of drug resistant HIV and improving overall quality of life.

The cost of laboratory testing forms a very important part in the goal to deliver the highest quality of care and achieving organisational excellence through healthcare delivery. The cost of laboratory testing and testing schedules is discussed in the next section.

3.5.1.5 Costs of laboratory testing and testing schedules

In line with national guidelines (SA, 2003), one CD4 and one viral load test was included at baseline, and six-monthly thereafter during the first-line regimen. Once patients were on second-line, six-monthly CD4 count testing continued, but no viral load testing was done. The overall usage of safety monitoring investigations was based on the requirements for each individual ARV (Alam *et al.*, 2005:6). Laboratory test costs for 2004 were obtained from the National Health Laboratory Services.

Details of laboratory testing frequencies are contained in Table 3.4 (Boulle *et al.*, 2004:62; Miolefakgotla & Crisp, 2000).

Table 3.4: Laboratory testing schedule averaged for all patients

	FIRST-LINE		SECOND-LINE		FAILING
	Initial six months	Annually thereafter	Initial six months	Annually thereafter	
FBC	0.3	0.1	4.8	1.9	0.0
Diff	0.2	0.1	4.8	1.9	0.0
Creatinine	0.0	0.0	0.0	0.0	0.0
ALT	3.9	1.3	0.0	0.0	0.0
Cholesterol & TG	0.0	0.0	2.0	2.0	0.0
Glucose	0.0	0.0	2.0	2.0	0.0
CD4	2.0	2.0	2.0	2.0	2.0
Viral load	2.0	2.0	0.0	0.0	0.0

(Source: Boulle *et al.*, 2004:62)

3.5.1.6 Summary of service costs

Table 3.5 shows a summary of costs for clinic visits, ARVs and laboratory tests.

**Table 3.5: Cost per patient of ARVs, laboratory testing, and clinical services
(R 2003/04 prices)**

Item		First-line initial six months	First-line annually thereafter	Second- line initial six months	Second- line annually thereafter	Failing treatment
ARVs	Annual cost	Percentage of people on each ARV				
AZT	972	5 %	5 %	95 %	95 %	-
3TC	493	100 %	100 %	-	-	-
d4T	309	95 %	95 %	5 %	5 %	-
ddl	1106	-	-	100 %	100 %	-
NVP	481	40 %	40 %	-	-	-
EFV	1697	60 %	60 %	-	-	-
LPV/RTV	3782	-	-	100 %	100 %	-
	Sub-total	1 231	2 461	3172	6345	0
	15 % markup	185	369	476	952	
	Total (R)	1416	2830	3648	7297	
Laboratory tests	Unit cost	Average test in period per person on treatment				
FBC	34.95	0.3	0.1	4.8	1.9	-
Diff	22.16	0.3	0.1	4.8	1.9	-
Creatinine	16.45	-	-	-	-	-
ALT	25.40	2.4	0.8	-	-	-
Cholesterol and TG	48.23	-	-	2.0	2.0	-
Glucose	16.45	-	-	2.0	2.0	-
CD4	60.00	2.0	2.0	2.0	2.0	2.0
Viral load	300.00	2.0	2.0	-	-	-
	Total (R)	795	746	521	358	120
Consultation s	Visit cost	Number of visits in period				
ART visit	160	17	11	5	11	15
Nutrition	51	10	12	6	12	12
	Total (R)	3 255	2 315	1 157	2 315	2 940
Total (R)		5 466	5 891	5 326	9 970	3 060

(Source: Boulle *et al.*, 2004:63)

Table 3.5 summarises the cost per patient of ARVs, laboratory testing, and clinical services. As indicated by the total cost, high quality care for HIV/AIDS patients and good service delivery is expensive. The challenge is to maintain the highest possible standard of service delivery while keeping costs under control. These high costs clearly indicate that patient defaulting is a risk to achieving organisational excellence through healthcare delivery.

3.5.1.7 Expected average life expectancy and duration on first and second-line regimen

Because ART is a new intervention, the gain in life expectancy associated with taking these drugs is still unknown. As argued in the Joint Health and Treasury Task Team (JHTTT) costing (SA, 2003b) underestimation of improved survival due to HAART will understate the number of patients on treatment and therefore the costs of care. The Cape Town ARV costing model (Cape Town Antiretroviral costing model, 2004) has been used to extrapolate the cost and utilisation data presented above. This is a computer spreadsheet model that calculates the costs of scaling up antiretroviral treatment, under the assumption that patients on ART would have a life expectancy of 6.5 years after initiation of ART. It should be borne in mind that this estimate is lower than estimates based on the extrapolation of primary data, and thus assumes a lower rate of adherence and higher rates of drop out than have been found in pilot ART programmes in South Africa (Boulle *et al.*, 2004:64; Blaschke & Osterberg, 2005:488).

3.5.1.8 Number of patients entering care

A crucial uncertainty in calculating the costs of scaling up ART is the number of patients entering care. Recent evidence from the Anglo Gold programme indicates that only one quarter of HIV+ employees who are in need of ART have initiated care. In other words, the achievement of a full scale-up by 2009 in South Africa could be exceptionally ambitious. Despite this limitation, the study continued to use the targets contained in the Operational Plan, because they remain the official policy of the national Department of Health (SA, 2003a). Numbers of patients started on

treatment as well as cumulative numbers are presented in Table 3.6. It was assumed that ten percent of patients starting ART would be children.

Table 3.6: Numbers on ART

	2004	2005	2006	2007	2008
Adults starting ART during period	53 500	142 000	212 000	302 000	419 000
Children starting ART during period	5 944	15 778	23 556	33 556	46 556
Total patients starting ART	59 444	157 778	235 556	335 556	465 556
Adults on ART at end of period	47 714	169 764	343 018	580 908	901 180
Children on ART at end of period	5 301	18 863	38 113	64 546	100 132
Total patients on ART	53 015	188 627	381 131	645 454	1 001 132

(Source: Boulle *et al.*, 2004:64)

Table 3.6 indicates the number of patients started on ART. A crucial uncertainty in calculating the costs of ART is the number of patients entering care. According to the World Health Organization (WHO, 2004), most people don't even know that they are infected. It is thus crucial to increase public knowledge on HIV to initiate people in need of ART on treatment and to keep the majority of South Africans who are currently not infected with HIV/AIDS, uninfected.

3.5.1.9 Overall costs

Overall costs based on the numbers of patients estimated to enter the programme are presented in Table 3.7. The full service-delivery costs of ART were estimated to be R293 million in 2004/05. Total costs rise rapidly to R1 173 million in 2005/06, and reach R6 539 million by 2008/09. The total cost over the five-year period (March 2004 until March 2009) is R15 billion. The annual service delivery cost per patient on

ART ranges between R5 500 and R6 000 over the period (BER, 2006; Boulle *et al.*, 2004:65).

**Table 3.7: Breakdown of service delivery and programme-level costs
(R million 2003/04 prices)**

	Year					Grand Total	Total %
	2004/5	2005/6	2006/7	2007/8	2008/9		
Programme-level	32.56	94.51	194.25	334.09	524.23	1 179.65	8
Programme administration	8.35	28.08	54.24	90.02	138.14	318.83	2
Procurement and supply chain	12.21	54.53	128.02	232.07	374.09	800.82	5
Research	12.00	12.00	12.00	12.00	12.00	60.00	0.4
Antiretroviral programme	293.20	1 078.97	2 239.29	3 844.47	6 014.86	13 470.79	92
Doctors	46.23	149.45	278.81	454.91	691.17	1 620.56	11
Nurses	16.62	53.72	100.21	163.51	248.42	582.48	4
Pharmacists	1.29	4.16	7.76	12.66	19.23	45.09	0.3
Social worker	5.10	16.50	30.79	50.23	76.32	178.95	1
Dietician/ Nutritionist	5.10	16.50	30.79	50.23	76.32	178.95	1
Clinic management/ Administration	9.29	30.03	56.03	91.42	138.90	325.68	2
Monitoring/ Data capturing	7.80	25.21	47.04	76.75	116.60	273.40	2
Counselling	20.15	65.15	121.55	198.32	301.31	706.49	5
Drugs	93.29	401.15	924.81	1 663.59	2 670.89	5 753.67	39
Commodities and products	47.39	162.93	316.94	522.77	797.25	1 846.28	13

Planning and administration	19.18	62.00	115.67	188.73	286.74	672.32	4.6
Infrastructure and equipment	6.96	22.52	42.01	68.54	104.13	244.15	2
Nutritional supplements	14.85	69.65	166.89	302.83	487.56	1 041.77	7
Grand Total	325.76	1 173.48	2 433.54	4 178.56	6 539.09	14 650.44	

(Source: Boulle *et al.*, 2004:65)

These figures clearly indicate that patients defaulting ART represent an enormous financial risk for the public health sector as well as for the individual if drug resistant strains of HIV/AIDS develop because of noncompliance. There is currently no cure for HIV/AIDS. The best that an HIV/AIDS management programme can achieve is to prolong the lives of people living with HIV/AIDS, so that they can remain productive members of society. Undertaking a programme like this means committing to providing care and treatment for people over a long period. Once people enter into a comprehensive treatment and care programme, treatment must be sustained to minimize wasting financial resources and expensive ARV commodities. The following section will discuss the cost of human resources for HIV/AIDS treatment and care.

3.5.2 Human resource requirements

This section estimates the number of staff of different categories that are required to deliver ART services. The calculation was based on staff establishments in the three Khayelitsha HIV clinics in 2002 and is therefore representative of efficiency levels achieved during the third year of operation of the clinics. Although this does not capture diseconomies of scale encountered in the earliest periods (where staff-to-patient ratios are typically higher), it also does not capture economies of scale that could still be achieved. During 2002, there were 18 546 visits to the clinics, of which just over 16 percent were ART visits. By the end of 2002, approximately 290 patients were on ART. Because staff was involved in delivering ART and care for patients

who were not on ART, the proportion of time spent on the ART programme was established by timing 150 clinical consultations and interviewing non-clinical staff. These data, in combination with routine visit headcounts, allowed the study to estimate the full time equivalent (FTE) staffing requirements for ART, as shown in Table 3.8. For the purpose of the study, it will be assumed that Lichtenburg Ditsobotla district's human resource requirements imitate that of the Khayelitsha study.

Table 3.8: ART staff requirements in Khayelitsha clinics, 2003

CATEGORY OF STAFF	TOTAL FTE	ART FTE
Doctor level 11	3	0.52
Doctor level 10	1	0.17
Nurse level 8	1	0.17
Nurse level 7	2	0.35
Counsellors and adherence monitors	6	1.40
Clinic management, logistics and administrative staff	3	0.50
Pharmacists and pharmacist assistant	3	0.02
Clerical and data management	2	0.43
Social worker	1	0.17
Dietician/nutritionist	1	0.17
ART Visits		3 095
Total HIV clinic visits		18 546

(Source: Boulle *et al.*, 2004:66)

The study combined the data with assumptions of patients enrolling in ART services and the average per patient utilisation of services to estimate staffing requirements for the delivery of ART services as shown in Table 3.9.

Table 3.9: Staff requirements for ART care

Category of staff	2004/05	2005/06	2006/07	2007/08	2008/09
Doctor level 11	160	516	963	1 571	2 387
Doctor level 10	53	321	321	524	796
Nurse level 8	53	524	321	524	796
Nurse level 7	106	1 591	642	1 047	1 591
Counselling and adherence monitors	430	1 389	2 592	4 229	6 426
Clinic management, logistics and administration	153	496	926	1 510	2 296
Pharmacists and pharmacists assistants	7	24	45	74	112
Monitoring data capturers	133	430	802	1 309	1 989
Social workers	51	165	309	503	765
Dietician/nutritionist	51	165	309	503	765

(Source: Boulle *et.al.*, 2004:67)

Significant investment to strengthen the human resource requirements of the public health sector is needed to increase capacity to treat all patients, including those with HIV/AIDS illnesses. Mounting an effective ART programme requires more than just the drugs. Establishing an adequate cadre of well-trained healthcare professionals, laboratory technicians, pharmacists and community workers is critical for success of this programme. The next section will focus on primary healthcare services (PHC).

3.5.3 Primary healthcare services

This section presents estimates of the costs of providing the package of primary healthcare services in the public sector in South Africa (SA, 2004). PHC's goal is to ensure equitable access to efficient, sustainable, and quality healthcare services. These are compared with current expenditure on these services in order to determine the funding gap. The key approach to costing involved combining data from a wide range of primary healthcare cost analyses, district health expenditure

reviews and other sources of cost data, with utilisation data and population estimates.

More formally, the objectives are to:

- Calculate the financial resource requirements for providing a comprehensive package of primary healthcare services;
- Compare the resource requirements with current expenditure on primary healthcare services;
- Estimate the gap between current expenditure and the requirements to fully provide the primary healthcare package; and
- Calculate expected resource requirements over the MTEF period using a number of scenarios.

3.5.3.1 Population data

The cost of providing the package is very dependent on the size of the population being served. Data from the 2001 census were used as the basis for population estimates. To estimate the population dependent on the public health sector, medical scheme members were removed using data from the 1999 October Household Survey and the proposed civil servants' medical scheme (Boulle *et al.*, 2004:67; Cabral *et al.*, 1996).

3.5.3.2 Cost per primary healthcare visit

Cost data were obtained from 16 facility-based cost analyses and 21 district health expenditure reviews. A total of 882 facilities have been included. Because these cost analyses covered a large number and wide variety of differing facilities, the estimates from these sources are likely to be representative of the current cost per primary healthcare visit. Cost data were inflated to 2003/04 prices. The unit cost at clinics and community health centres ranged between R37 and R130, with an average of R63. A number of adjustments have been made to this cost. Firstly, the cost of additional counselling staff, particularly for VCT programmes, was included. This was estimated to be an average of R0,77 per visit. Secondly, the cost per visit was

adjusted to allow for the inclusion of rural and scarce skills allowances. It was estimated that the unit cost per visit would be R65 in urban areas and R67 in rural areas once these allowances were included. A number of DHERs (district health expenditure reviews) presented information on the cost per outpatient department (OPD) visit at district hospitals. The unit cost per OPD visit was R232 on average and ranged between R123 and R278. After adjustments, the unit cost per OPD visit was estimated to be R239 in urban areas and R248 in rural areas. Data from these DHERs indicated that 84 percent of PHC visits were to clinics and 16 percent were OPD visits. Based on this ratio, the average weighted cost per visit was R93 in urban areas and R96 in rural areas. The inclusion of OPD costs has resulted in the cost per visit being approximately 30 percent higher than if PHC visits only occurred at clinic level. This is in line with estimates made in the National Health Accounts project (Mbatsha *et al.*, 2003). Table 3.10 provides details of the PHC cost per visit.

Table 3.10: PHC cost per visit (R 2003/04)

	Average	High	Low
Clinic and CHC cost per visit			
Doctor unit cost per visit	8.34	16.96	4.88
Doctor unit cost including scarce skills allowance	9.59	19.50	5.61
Overall unit cost including rural and scarce skills allowance	11.42	23.23	6.69
Overall unit cost	64.12	130.43	37.54
Overall unit cost including scarce skills allowance	65.37	132.97	38.27
Overall unit cost including rural and scarce skills allowance	67.20	136.70	39.35
OPD cost per visit			
Doctor unit cost per visit	41.90	50.14	22.30
Doctor unit cost including scarce skills allowance	48.19	57.66	25.65
Doctor unit cost including rural and scarce skills allowances	57.40	68.69	30.55

Overall unit cost	232.78	278.56	123.90
Overall unit cost including scarce skills allowance	239.07	286.08	127.25
Overall unit cost including rural and scarce skills allowance	248.28	297.11	132.15
Average weighted cost per PHC visit (clinics, CHCs and OPDs)			
Overall unit cost	91.11	154.14	51.36
Overall unit cost including scarce skills allowance	93.17	157.48	52.51
Overall unit cost including rural and scarce skills allowance	96.19	162.38	54.20

(Source: Boulle *et al.*, 2004:68)

Table 3.10 summarises the average cost per PHC visits for CHC and OPD visits, and also shows the average weighted cost per PHC visit. Additional elements of the PHC package will be discussed in the next section.

3.5.4 Additional elements of the PHC package

The unit cost data presented above do not cover all services that are now identified as important to include in the Primary Healthcare package. In particular, the cost of environmental health services (EHS) and community health workers (CHWs) should be incorporated. A costing of environmental health services (Haynes, 2004) has indicated a national average cost of R9,79 per capita (2003/04 prices) and that it would cost R11,99 per capita to reach the target of one environmental health professional per 15 000 people.

A normative costing of CHWs was done based on information from the October 2003 CHW *lekgothla* and the national Department of Health's Community Health Workers Policy Framework. The cost of community health workers was based on an estimated average workload of 90 households per CHW in rural areas and a workload of 125 households per CHW in urban areas. Costs include the proposed

R1 000 monthly CHW stipend as well as an overhead cost to cover the costs of NGOs providing supervision and support to CHWs. These overhead costs were estimated to be R893 per CHW per month based on payments in the Western Cape to NGOs supporting VCT and adherence counselling staff (Boulle *et al.*, 2004; Cabral *et al.*, 1996).

However, it could be anticipated that the level of support required for a VCT counsellor would be higher than required for other CHW categories. We therefore assumed an overhead cost of half of that incurred by the NGO coordinators in the Western Cape (i.e., R447 per month). In all of these calculations, it was assumed that the CHW programme would be phased in equally over the period under consideration, with one-fifth of the required CHWs being operational within 2005/06, two-fifths in 2006/07 and so forth to reach full programme functioning by 2009/10. Table 3.11 shows the number of CHWs required in each province in each of these years to meet this phasing-in timetable. A final adjustment made to the primary healthcare package is to include HIV related services. The costs of providing services to patients in ART programmes have been shown earlier. However, these costs do not include the costs of treating HIV+ patients at the primary care level who are not receiving ARVs. These costs have been included in two ways. Firstly, the total costs of counselling for HIV (largely for VCT programme but also for other issues such as bereavement) have been estimated at contributing an average of R0,77 per visit. Secondly, the normative PHC utilisation targets have been adjusted to take account of the additional visits for people living with HIV. Based on the ASSA model, it is estimated that approximately 35 percent of those who are HIV+ are in WHO Stage 3 and 10 percent are in Stage 4 of HIV and AIDS. At current prevalence rates, this translates into 4.5 percent of the South African population being in these stages. Preliminary findings from ongoing research at the Health Economics Unit indicate a utilisation level of about ten visits per year for these patients. This figure has been applied to the general population. The study further assumes that coverage levels are at 70 percent (comparing the current PHC utilisation rate of 2.5 with the 'ideal' rate of 3.5). This translates into an additional 0.3 visits per person per year (i.e., 10 visits x 4.5 percent of the population in need of such visits x 70 percent coverage).

Table 3.11: Number of community health workers (CHWs) required in each province (phased-in programme)

	2005/06	2006/07	2007/08	2008/09	2009/10
Eastern Cape	3 305	6 063	9 119	12 166	15 192
Free State	1 040	2 063	3 091	4 107	5 109
Gauteng	3 377	6 887	10 654	14 619	18 769
KwaZulu-Natal	4 642	9 464	14 528	19 784	25 216
Limpopo	2 536	5 056	7 583	10 088	12 560
Mpumalanga	1 397	2 812	4 270	5 752	7 251
Northern Cape	303	592	878	1 155	1 421
North-West	1 610	3 220	4 854	6 492	8 124
Western Cape	1 711	3 483	5 388	7 392	9 487
National	19 651	39 640	60 365	81 555	103 129

3.5.4.1 Primary healthcare utilisation estimates

Current PHC utilisation is approximately 2.5 visits per capita, based on 2002/03 District Health Information System (DHIS) data. However, the target primary healthcare headcount is 3.85 visits per capita. This target was drawn from the detailed evaluation of PHC service needs undertaken in the 'Need Norms' study (Cabral *et al.*, 1996). Table 3.12 provides an overview of the components of this target. The only adjustment to the 'Need Norms' estimate was to increase the service requirements for HIV+ patients. The model assumed that this target would only be reached in 2009/10, and an increase in utilisation was phased in assuming that one-fifth of the increase would be achieved in each of the five financial years under review (Boulle *et al.*, 2004:69; Chetty & Nielson, 2003).

Table 3.12: Normative PHC utilisation estimates

Types of service	Utilisation Rates (per capita)
Combined (prevention & curative) services < 5	2.70
Combined services for 5 – 14	1.43
Chronic care for children under 15	0.41
Family planning	1.63
Antenatal care	3.48
Deliveries	0.75
Postnatal care	0.75
Termination of pregnancy	0.02
Other well-women services (ca cervix)	0.02
Adult acute curative care	1.06
Casualty car (both medical and surgical)	0.20
STD's	0.19
Tuberculosis care	0.09
Care for persons with AIDS (pre-ART)	0.32
Chronic curative	0.90
Mental health with low screening	0.28
Chronic psychiatric care	0.31
Average per capita utilisation per year	3.85

(Source: Boulle *et al.*, 2004:70)

3.5.4.2 Estimating the cost of the PHC package

The various PHC components were calculated as follows:

- Cost of facility based PHC = (average unit cost per visit in urban areas urban population dependent on public sector services utilisation rate) plus (average unit cost per visit in rural areas rural population dependent on public sector services utilisation rate). The data indicated that the current expenditure on PHC is approximately R6,6 billion. This is consistent with the findings of the recent Intergovernmental Fiscal Review.
- Cost of Environmental Health Service (EHS) = EHS cost per capita total population. This resulted in an estimate of R473 million for current spending on EHS.
- Cost of CHWs = (number of households in urban areas dependent on public sector / 125 CHW Stipend and NGO overhead cost) + (number of households in rural areas dependent on public sector / 90 CHW Stipend and NGO overhead cost). Currently, CHW programmes are not very substantial in most provinces and expenditure is low.

Table 3.13 shows projected expenditure levels over the MTEF period in order to meet the normative utilisation, EHS and CHW targets.

**Table 3.13: Per capita and total resource requirements for PHC services
(R 2003/04 prices)**

	2005/06	2006/07	2007/08	2008/09	2009/10
PHC per capita resource requirements					
PHC services provided only in clinics & CHC's [1]	184.08	201.80	219.51	237.20	254.89
PHC services provided in clinics & CHC's as well as district hospital OPD's [2]	262.90	288.21	313.49	338.75	364.00
CHW [3]	8.26	16.49	24.66	32.79	40.88
EHS [4]	10.23	10.67	11.11	11.55	11.99
Total [1] + [3] + [4]	202.56	228.96	255.28	281.54	307.76
Total [2] + [3] + [4]	281.39	315.37	349.26	383.09	416.87
PHC total resource requirement (R million)					
PHC services provided only in clinics & CHC's [1]	7603.05	8 422.31	9 327.01	10 241.11	11 168.20
PHC services provided in clinics & CHC's as well as district hospital OPD's [2]	10 858.83	12 028.63	13 320.31	14 625.17	15 941.44
CHW [3]	341.13	688.12	1 047.91	1 415.76	1 790.27
EHS [4]	494.31	524.30	554.39	584.31	614.09
Total [1] + [3] + [4]	8 438.49	9 634.73	10 929.37	12 241.18	13 567.57
Total [2] + [3] + [4]	11 694.27	13 241.05	14 922.62	16 625.24	18 345.80

(Source: Boulle *et al.*, 2004:71)

The following key conclusions can be made about future resource requirements:

- R11,2 billion would be required in 2009/10 in order to provide the full package of facility-based PHC services. This means that an additional R4,5 billion is required by the end of the five-year period.
- The cost of providing PHC services at district hospital OPDs is considerably higher than at clinics and CHCs. Although we have calculated current expenditure for clinics and CHCs only, DHERs indicate that PHC services are also being delivered in district hospital OPDs. If this continues, a total of R15,9 billion (instead of R11,2 billion) would be required in 2009/10. It is recommended that departments actively pursue the provision of the majority of PHC services through clinics and CHCs in preference to district hospital OPDs. If such reorganisation does not occur, it is unlikely that a comprehensive, accessible PHC package will be available to all.
- Very limited additional resources are required to meet EHS requirements; about R141 million is required to take expenditure to R614 million in 2009/10 to meet the EHS targets.
- Considerable additional resources of nearly R1,8 billion are required to fully implement CHW programmes by 2009/10.
- A total of R13,6 billion would be required in 2009/10 in order to provide the full package of facility-based PHC services at an average of 3.85 visits per person per year, EHS and CHW programmes. This is equivalent to about R308 per capita (Boulle *et al.*, 2004:71).

3.5.5 Discussion of cost of government's implementation

This section has presented updated estimates of resource requirements to meet antiretroviral treatment targets based on primary cost and utilisation data. The costs of delivering ART to over 50 000 patients is R326 million in 2004/05, with rapid increases to over R6,5 billion by 2008/09. The full cost over the period of projection was just over R14.6 billion. Antiretroviral drugs were 39 percent and human resources were 27 percent of the total cost.

A crucial uncertainty in calculating resource requirements for ART is whether the pace of the roll-out will be in line with patient targets. The study by Boulle *et al.* (2004:58-73) based estimates on the patient targets contained in the Operational Plan. It is acknowledged that these targets are ambitious, and it is recommended that these estimates be adjusted once more data are available on the uptake of ART on the ground.

Finally, it is recommended that between R5 500 and R6 000 per patient per annum could be used as a ballpark figure in planning services. It is acknowledged that current PHC utilisation rates in South Africa are relatively low by middle income country standards. Until recently, an average of 3.5 visits per person per year has been seen as the desirable target utilisation rate in the South African context.

A major deficiency in this estimate was the lack of consideration of the impact of the HIV epidemic. The study therefore increased the target utilisation rate to 3.85 visits per person per year in order to take into account the service requirements of those with HIV/AIDS who are not enrolled in an ART programme. It was assumed that visits would increase from their current levels to the target level of 3.85 visits over a five year period. Similarly, the assumption was made that the CHW programme would reach its targets within five years. In reality, it may be necessary to extend this scaling-up process over a longer period. Given the high cost of this programme, it might also be necessary to revisit the CHW to household ratios.

Despite these uncertainties, the current estimates provide a good basis for initiating discussions on likely future resource requirements. It is recommended that national and provincial health departments use a ballpark estimate of just over R300 per capita in planning for comprehensive PHC services. It was also shown that by 2008/09, an additional 3 182 doctors and 2 387 nurses would be required to run ART programmes, based on staff establishment and efficiency levels in the third year of the Khayelitsha programme. Over the five-year period, the cost of staff would be approximately R2 billion. Currently, there is a shortage of doctors, pharmacists and nurses in the public sector, and levels of production of these categories of staff will not be sufficient to satisfy the need.

The success of both the ART and PHC programmes is heavily dependent on the availability of qualified doctors, pharmacist and nurses. Providing financial incentives in the form of rural and scarce skills allowances have had some success, but have not been sufficient in filling all vacant posts in rural and urban areas. Other non-financial factors such as job satisfaction, housing and career opportunities influence the choice to work in any given area. If the health sector is determined to achieve full staffing of all health districts, these non-financial factors must be incorporated into the incentive package. Examples of non-financial incentives could be:

- Providing housing (or subsidised housing) for health personnel in rural areas;
- Accelerating career progress of personnel working in rural areas; and
- Investing in developing infrastructure and social amenities in rural areas.

Whether these incentives are feasible or not, the critical point to note is that incorporating any financial or non-financial incentive package will imply additional costs to the health sector and the government in general. All will involve increases in overall expenditure in the long-term.

The key policy implications for the South African health system are that:

- Non-financial incentives need to be incorporated into any sustainable incentive package to attract and retain health personnel, especially in view of the increased burden on health services from HIV and AIDS;
- Lack of managerial capacity, common in rural areas suggests that similar (financial and non-financial) incentive packages should be structured for managers working in rural areas; and
- The health sector must begin to factor the additional cost implications for funding strategies to alleviate identified human resource constraints into future health budgets.

The costing of health service requirements is a very useful exercise in estimating required costs for adequate provision of health services. However, the human resource constraints currently experienced in many areas within the health system have significant financial implications that need to be recognised.

3.6 CALCULATING THE TOTAL COST OF ART PER PATIENT PER MONTH

Considering all of the abovementioned costs of ART treatment, it is essential for the purpose of the study to calculate the exact cost per patient on ART treatment per month. From these totals, calculations can be made to determine the cost of a defaulting patient.

Table 3.14: Total cost of ART per patient per month

Description	Cost	Reference
Unit cost per ART visit	R160.37	3.5.1.1. & Table 1
Costs and utilisation of nutritional supplements	R100	3.5.1.3.
Cost and utilisation of first and second line ARV*		3.5.1.4. & Table 4
Regimen 1a	R206.28	
Regimen 1b	R104.94	
Regimen 2	R765.21	
Regimen 1az	R263.58	
Regimen 1bz	R164.25	
Primary healthcare service – Rural	R67	3.5.3.2.
OPD visit**	R232	
EHS	R11.99	
Counselling per visit	R0.77	
Total patient cost Regimen 1a	R778.41	
Total patient cost Regimen 1b	R677.06	
Total patient cost Regimen 2	R1377.34	
Total patient cost Regimen 1az	R835.71	
Total patient cost Regimen 1bz	R734.38	

Table 3.14 summarises the total cost of ART per patient per month for each regimen as calculated in the above sections of the study.

Assumptions made in calculating data for Table 3.14:

- Regimen prices according to Ms L King, Chief ART pharmacist in 2007;
- PHC visit rural – Lichtenburg is classified as a rural area; and
- OPD visits – the study only considers Thusong and Gen. de la Rey Hospitals, and not clinics.

For the purpose of the study, with the largest percentage of the population in chapter four being female between the ages of 21 - 45, the study will assume that most of the patients are on Regimen 1b, and the rest of the population assumed to be on Regimen 1a. Also, the cost of treating patients for opportunistic infections was not included in this calculation.

The cost of treating HIV/AIDS is very high, as indicated in section 3.5. Government's goal to reduce the number of HIV/AIDS infection can only be reached if the ARV *related commodities is used effectively and efficiently*. The message of prevention and of changing lifestyles and behaviour are therefore the critically important starting point in managing the spread of HIV/AIDS. Important in supporting these efforts in the broader context are the social programmes of government; for example, social grants and the wider society that aim to reduce poverty through improving quality of life, nutrition, job creation and social support, and to improve education and to bring about moral renewal. The next section will focus on social grants and providing social support to patients.

3.7 SOCIAL GRANTS

According to Woolard (2003:2), social assistance refers to non-contributory and income-tested benefits provided by the state to vulnerable groups unable to provide for their own minimum needs, such as the disabled, the elderly and young children in poor households. Almost six million South Africans receive social assistance grants each month and this number is steadily rising as a result of the extension of the Child Support Grant and increased public awareness of eligibility for grants.

The Department of Social Development aims to ensure the provision of comprehensive, integrated, sustainable and quality social-development services to combat vulnerability and poverty. It also strives to create an enabling environment for sustainable development in partnership with those committed to building a caring society (Burger, 2007:35).

3.7.1 Description of social grants

According to Van Niekerk *et al.* (2006:4), Kaunda (2003) and Bertrand *et al.* (2000), there are five major social security grants in South Africa: the State Old Age Pension, the Disability Grant (HIV/AIDS is included in the disability grant), the Child Support Grant, the Foster Child Grant and the Care Dependency Grant. Eligibility for each grant is dependent on an income-based means test. The grants are financed through general tax revenues, collected on a national basis. The amounts paid have increased significantly in real terms since 2001, while the coverage of the Child Support Grant has expanded, from all children below seven years to all children below fourteen years.

The grants are implemented and administered by a separate national government agency – the South African Social Security Agency. In 2003, approximately seven million South Africans, out of a total population of 45 million, received one of these grants. Total spending in 2004/05 amounted to ZAR41 billion (approximately US\$7 billion), which represented 10,2 percent of total government spending, and 3,1 percent of GDP.

3.7.2 Objectives of social grants

Since 2000, levels of investment and economic growth in South Africa have achieved the fastest increases. Nevertheless, with an official unemployment rate of 26 percent, a poverty rate estimated at approximately 50 percent, and one of the most severe measures of inequality in the world, South Africa faces substantial challenges in addressing poverty, inequality and unemployment. While it ranks as an upper-middle income country based on average income, some of the nation's social indicators are comparable to those of the poorest countries of the world.

The South African social security system is the government's chief initiative in tackling these problems. It has two main objectives. The first is to immediately reduce poverty among groups who are not expected to participate fully in the labour market, and therefore vulnerable to low income: the elderly, those with disabilities, and children. The second objective is to increase investment in health, education and nutrition, so as to increase economic growth and development. A social security system is essential for healthy economic development, particularly in a rapidly changing economy, and will contribute actively to the development process. It is important for immediate alleviation of poverty and is a mechanism for active redistribution (Van Niekerk *et al.*, 2006:1).

3.7.3 Social grants in South Africa

The South African social security system is a system of targeted social grants (Van Niekerk *et al.*, 2006:2). The current system was implemented and reformed in stages, adapted from the legacy of programmes inherited by the incoming government. There are currently five main types of social grant as mentioned in section 3.7.2. The first is the State Old Age Pension (SOAP), which provides support to men over 65 and to women over the age of 60. The second is the Disability Grant (DG), which provides support to adults with disabilities. The third is the Child Support Grant (CSG), which provides support to families with children under the age of fourteen. The fourth is the Foster Child Grant (FCG), which provides support to families with children, below the age of 18, in foster-care. The fifth is the Care Dependency Grant (CDG), which provides additional support to families with children, below the age of eighteen, with disabilities. Table 3.15 lists the cash benefits associated with each grant in 2005. The grant amounts are per qualified beneficiary, so that a household with two children below the age of fourteen would receive R360 per month, while one with five children below the age of fourteen would receive R900 per month. The amounts paid have increased significantly since 2001, particularly for the CSG, which rose from R100 in 2001 to R180 in 2005: an 80 percent nominal increase, while cumulative inflation was less than 30 percent.

Table 3.15: South Africa's social grants, 2005

Grant	Amount
State Old Age Pension (SOAP)	R780
Disability Grant (DG)	R780
Child Support Grant (CSG)	R180
Foster Child Grant (FCG)	R560
Care Dependency Grant (CDG)	R780

(Source: SA, 2005a:2)

Eligibility for social grants is currently dependent on an income-based means test, which varies according to the grant, the marital status of the beneficiary, and other characteristics. For example, to qualify for the SOAP, an individual must have an income lower than R1 226, if a single person, and an income lower than R2 226, if married (2000 figures). The grants are financed through general tax revenues, collected on a national basis. There are no explicit conditionalities associated with the social grants, unlike a conditional cash transfer programme. Nevertheless, to qualify for the CSG, parents must provide proof of immunisation where such services are available, and proof of efforts to secure employment or to join a development programme. In addition, if one parent is no longer living with the custodial parent and child, the custodial parent must provide proof of efforts to obtain private maintenance from the other parent. The broad features of social grants in South Africa have not changed significantly since the current system was introduced. However, the scope of the CSG was expanded in 2002: from all children below the age of seven to all children below the age of fourteen. In addition, since 2000 the enforcement measures used to determine household eligibility for grants have become less burdensome on beneficiaries, particularly with the CSG.

Initially, provincial governments were responsible for the implementation and administration of social grants. However, a government review identified a number of problems associated with provincial administration, including fraudulent grants, delays in approving grant applications, and difficulties in accessing payment. In 2004, therefore, a national government agency was established to implement and

administer social grants – the South African Social Security Agency (SASSA). This has a national office, and the provincial structures are under development. The SASSA is in turn monitored and evaluated by the national Department for Social Development (DSD).

Until 2004, finance for social grants was allocated to provinces through unconditional block grants, for disbursement primarily through contracted private companies. In 2004, the National Treasury revised this arrangement so that grants are paid through conditional grants managed by the DSD. The grants themselves are paid either in cash at specified pay points, or directly deposited into a beneficiary's bank account. However, given high costs of personal banking, and low rates of bank access for the poor, in practice, most grants are paid out directly in cash.

Ongoing evaluation of the social security system has involved diverse stakeholders, including the Monitoring and Evaluation Unit and Economics and Finance Directorate in the DSD, the National Treasury, civil society institutions and research institutes. The evaluation techniques vary, and include auditing the beneficiaries, surveying the population to identify gaps and problems, and analysing national household surveys (Barrientos & Lloyd-Sherlock, 2002).

3.7.4 Impact of social grants

In September 2003, 6.8 million people, out of a total population of 45 million, received some form of social grants. This included 2,0 million adults receiving the SOAP, 1,1 million adults receiving the DG, and 3,7 million children receiving the CSG, FCG or CDG. Total spending in the fiscal year 2004/05 amounted to R41 billion (approximately US\$7 billion). This represented 10,2 percent of total government spending, and 3,1 percent of GDP. The government has steadily increased spending on social grants, in both nominal and real terms. In 2000/01, spending amounted to R18 billion (approximately US\$3 billion), which represented 2,0 percent of GDP. By 2006/07, the National Treasury projects nominal spending is to increase to R54 billion (approximately US\$9 billion), and 3,4 percent of GDP. The effectiveness of the South African social security system in improving the welfare of beneficiaries has been widely recognised (Duflo, 2000; Maitra & Ray, 2003:25-42).

3.7.5 Patient defaulting for grants

It's a rainy day in Thusong, a sprawling township just outside of Lichtenburg, North West where Maria, 48, the matriarch of the Mlotswa* family, her two sisters, their 19 children and five grandchildren - 27 people in total - live in their small two-bedroom shack. A pot of 'pap' (maize meal porridge) bubbles on the two-ring stove while children of all ages squeal and tumble through the front room.

Maria is HIV positive, as are at least eight members spanning three generations of her family. There are photographs on the bedroom wall of those taken by AIDS: a husband lost to TB in 2001; a daughter and a son, both buried on the same day two years later, and a grandchild who lived for just three weeks after its birth in 2004. Her eldest daughter is in hospital with pneumonia and one of her HIV-positive grandchildren is also unwell.

Maria and the two grandchildren orphaned by her daughter's death are the only household members benefiting from the government's ARV treatment programme. Besides the daughter with pneumonia, she does not know how many of the others are sick enough to qualify for the drugs. After nine months of ARV treatment, Maria is still suffering from asthma and painfully swollen feet, yet what she fears most besides death is a full recovery of her health.

ARVs may have saved her life, but they pose a threat to Maria's ability to support her family, none of whom are working. She is well aware that the R800 a month disability grant she receives from the government is temporary and contingent on her CD4 count, which measures the strength of the immune system remaining below 200. The price of gaining access to the life-prolonging drugs is likely to be the loss of the money that buys food for the household.

The disability grant is the only form of social security available to working-age adults in South Africa. It is supposed to ensure that patients can afford proper nutrition and transport to clinics but, given the country's estimated 40 percent unemployment rate, it is often used to support entire families. Between 2000 and 2004, the percentage of South Africans accessing the grant rose from one percent to eight percent.

The Department of Social Development has been concerned by the possibility of fraud and cracked down in its annual review process. A number of healthcare workers and counsellors reported increasing numbers of HIV-positive clients losing their disability grants after beginning ARV treatment. Some voiced their suspicion that patients who relied on the grant to put food on the table were deliberately defaulting on treatment to regain access to the much-needed income. "They panic, because that [grant] money makes a big difference to their families," said Sheila Mphuting (2008), one of the careworkers in the Thusong area. Besides the disability grant, Maria receives two foster-care grants of R530 a month for the orphans and lets a shack in their backyard for R150 (\$21) a month. After many visits to the Department of Home Affairs, ten family members still lack the identification document they need to access medical treatment, social grants or find formal employment. Nutritional support is an important part of the treatment plan and is provided to those who need it. Maria receives supplements and food parcels from the clinic where she collects her medication, but this is not the case for all patients at all clinics. Her pastor occasionally gives the family a bag of maize meal, and free bread is sometimes available from a local home-based care organisation. Rats devoured a patch of spinach she tried to grow in the backyard. She never misses her monthly R180 payment to the local burial society. Should there be another death in the family the payments will ensure that a proper funeral is provided.

In a country where HIV/AIDS disproportionately affects the poor, the disease is often just one of many elements that combine to keep families in poverty. Mark Heywood (2005:45), national treasurer of an AIDS lobby group, the Treatment Action Campaign (TAC), says the National AIDS Council has not taken into sufficient account the socio-economic impact of HIV/AIDS on individuals, or seriously discussed a more integrated approach involving other government departments.

The TAC is researching alternatives to the disability grant that would provide ongoing financial support to people with chronic diseases like HIV. But Dr Nomonde Xundu, head of the government's HIV/AIDS unit, dismissed the idea saying that the government cannot have an ongoing grant when there are programmes for improving people's health, and that we need to help people not to depend on the

State. Asked what difference the treatment programme has made to Maria's life, she briefly considered her overcrowded home. "*I think it's the same as before,*" she said. "*I still keep on crying.*" *Not their real names (Mphuting, 2008:1-2).

The above story is very true for most rural areas in South Africa. Focusing specifically on the Ditsobotla sub-district in Lichtenburg, this is a reality for many of the patients. As shown in chapter four; 58 percent of the population in this study received some form of grant monthly from government. The cost involved for government in treating these patients and supplying social grants, can have a devastating effect on the economy if patients aren't adhering to treatment to receive grants from government. Patient defaulting is a risk and a barrier in achieving organisational excellence through healthcare delivery.

Speaking to Khumalo in July 2008, TB Free Advocacy Communication and Social Mobilisation Manager, Leko Nkabinde said poverty was a factor for the high treatment defaulter rate among HIV and TB patients (Khumalo, 2008). The previous Minister of Health, Tshabalala-Msimang also noted that patients were still defaulting (Khumalo, 2008). She said most people who are surviving on social grants they received for their illnesses deliberately neglected to take their treatment as required so that they could continue to receive the grant. Poverty levels are so high and some people do not want to be cured in order to continue receiving the grant. She said there was a need for intensive treatment counselling for patients to understand the importance of completing their medication. To reach this successfully, we need co-operation of individuals, families and communities as well as a trained and accessible health workforce. She urged HIV and TB patients as well as their families to comply with treatment requirements as part of assisting in the fight against HIV/AIDS, which include protecting others from any possible infection (Khumalo, 2008).

3.8 PATIENTS DEFAULTING ART

“Drugs don’t work in patients who don’t take them”

C. Everett Koop, MD

When highly active antiretroviral therapy (HAART) became the treatment of choice for HIV/AIDS in the mid-1990s, many viewed it as the next best thing to a cure. These standard HIV treatments of two to four medications taken in combination can virtually stop the virus in its tracks, transforming the disease from death sentence into chronic illness. But there's a catch – HAART is demanding.

According to recent studies, adherence rates of 95 percent or higher are needed for it to work (Crawford, 2008:84). Adherence is defined as the extent to which a patient’s behaviour coincides with the prescribed healthcare regimen as agreed upon through a shared decision-making process between the patient and the healthcare provider. What does 95 percent adherence mean?

- a) *How many doses of, for example, Stavudine (d4T) 30mg should a patient take in a month to achieve 95 percent adherence? (Dose of d4T is 1 capsule twice a day)*

Calculation: 60 caps = 100 % x 95 %, therefore it is 57 capsules

- b) *What percentage adherence does missing four capsules translate into?
93 % adherence*

Treatment of HIV/AIDS disease has changed dramatically with the availability of more antiretroviral agents than ever before. Unfortunately, results from well designed trials and use of potent, strategic antiretroviral regimens are fruitless if the prescribed medications are not being taken by the patient, exactly as intended. The challenge of optimizing adherence to antiretrovirals remains paramount in the treatment of HIV/AIDS. The dire importance of this challenge is clearer with recent data suggesting that greater than 95 percent adherence to antiretroviral medications is required to achieve satisfactory viral suppression. Among patients with 80 percent to

90 percent adherence, the 50 percent failure rate is in the range now seen in most trials and in clinical practice. Innovative changes in clinical practice models have been proposed and implemented by some to try to incorporate multiple disciplines into optimal patient management. Furthermore, patients' failure to adhere to medication regimens can cause the virus to multiply rapidly and become drug resistant (Paterson *et al.*, 1999:32).

Many patients, however, find it hard to maintain such high adherence rates because of side effects, complex and rigorous dosing requirements, and psychosocial factors, according to Perry N. Halkitis, Ph.D, a health research psychologist. Recent studies identify HAART adherence rates ranging from 56 percent to 77 percent, depending on how it is measured. "Which human being [adheres to a recommended behaviour] 100 percent of the time? Who doesn't miss the gym now and again, or forget to take his or her vitamin supplements?" asks Halkitis (2003:270), one of an emerging group of research psychologists studying ways to improve patient adherence to HAART. "People are not perfect, and yet we want HIV-positive individuals on meds to be" (Halkitis, 2003:271).

Many patients may require interventions to help them meet such high adherence requirements, psychologists say. Such interventions are urgently needed, says psychologist Jeffrey T. Parsons, PhD, in the fall 2002 issue of *Psychology & AIDS*, the APA Office on AIDS newsletter, because "few published studies exist that document efficacy of behavioural interventions designed to improve medication adherence among persons with HIV" (Crawford, 2008).

Many factors exist that can serve to reduce patient adherence to therapy and successful adherence interventions involve providing support in areas required specific to each patient. Since adherence is affected by a combination of factors, all must be assessed and addressed to optimize disease outcomes and avoid the ultimate consequence of non-adherence, drug failure. Patient related issues, drug-related issues and issues relating to patient-provider communication can influence adherence. Failure to recognize and address these issues may result in discordance between priorities of patients versus caregivers and subsequent inability to help improve adherence with appropriate measures.

3.8.1 Consequences of poor adherence

1. Consequences of poor adherence for the individual:
 - Treatment failure;
 - Drug resistance; and
 - More complex treatment, more toxicity, uncertain prognosis.
2. Consequences of poor adherence from a public health perspective:
 - Transmission of resistant virus (subsequent ART failure)
3. Consequences of poor adherence from a health economics perspective:
 - Negative impact on the established cost-benefit of ART;
 - Financial resource wasting; and
 - Increased morbidity and mortality.

3.8.2 Factors influencing patient adherence

3.8.2.1 Patient factors

- Sociodemographic factors, such as ethnicity, gender, employment, age, education, income and literacy – not predictive;
- Psychosocial factors, such as alcohol or drug use, social stability, degree of social support, depression, and other psychiatric illnesses – strongly predictive;
- High patient drug/disease literacy – strongly predictive; and
- Confidence in one's abilities to adhere also influences adherence.

3.8.2.2 Treatment regimen factors

- Some ARV regimens have complex dosing schedules involving high pill-burden and side effects.

3.8.2.3 Patient-provider relationship

- Relationship between the healthcare worker and the patient; and
- Confidence and trust in providers.

3.8.2.4 Disease characteristics

- Adherence for conditions that are asymptomatic tends to be poorer; and
- ART patients who have experienced an OI are more likely to adhere to treatment.

3.8.2.5 Clinical setting

- A friendly, supportive, and nonjudgmental setting; convenient appointment schedules and confidentiality may contribute to higher levels of adherence.

3.8.3 Reasons given by patients for missing ART doses

Reasons given by patients for missing ART doses are listed in Table 3.16. Possible barriers to patient compliance were also identified and mentioned in Table 3.16. Problem solving approaches to achieve optimal quality care and to achieve organisational excellence are also provided.

Table 3.16: Reasons for adherence problems and problem solving approaches

	Reasons given by patients for missing doses	Possible barriers; patient forgot because -	Problem-solving approaches to achieve organisational excellence
1	Forgot to take pills Too busy Away form home Slept in	Travelling Alcohol or active drug use Depression or psychiatric illness Difficult life conditions Living alone and sick Homeless, no family support Lack of income and food Lack of support for child care and caring for dependents	Plan before travel, take extra pills Use reminder cues Enlist family support Refer to physician for treatment of psychiatric illness Use support groups Address addiction (alcohol and drugs) Counsel – emphasize link between alcohol, ARV medications, and liver damage Suggest peer group support programmes, church programmes
2	Unable to care for self Felt ill	Living alone No employment AIDS dementia or mental illness	Locate family and enlist support Identify a friend who could help Refer to support groups Link with community health workers Register with the home-based care programme Link with charitable institutions, faith-based organisations
3	Pills do not help Felt better so did not continue Taking pill holiday	Inadequate knowledge Incorrect beliefs and attitudes	Enhance counselling and review information with patient Inform patient and bring change in attitudes and understanding of effectiveness of medications Provide scientific information and examples Enlist family support
4	Fear of toxicity Fear side effects	Insufficient preparation Inadequate knowledge	Provide scientific information on what to expect and how to manage it Counsel on risk of non-adherence

5	<p>Instructions were not clear</p> <p>Did not understand how to take medications</p>	<p>Low literacy level</p> <p>Depression or psychiatric illness</p> <p>Alcohol or active drug use</p> <p>Insufficient time to counsel</p> <p>Language difficulties</p> <p>Negative or judgemental attitude of providers</p>	<p>Use low-literacy materials</p> <p>Use dummy pills and repeat and paraphrase instructions</p> <p>Ask patient to repeat instructions</p> <p>Enlist family support</p> <p>Treat depression or psychiatric illness</p> <p>Address addictions (alcohol and drugs)</p> <p>Discuss in an open and non-judgemental way</p> <p>Use counsellors (colleagues) who speak the same language and understand the culture context of the patient</p>
6	<p>Ran out of pills</p>	<p>Medication stock-out, shortage of staff, health facility closed</p> <p>Misunderstanding of dosage (taking more than prescribed dosage)</p> <p>Sharing pills with partners (parents)</p>	<p>Provide training for storekeepers</p> <p>Ensure shortage problems are reported to higher management level in time</p> <p>Refer to other pharmaceutical pharmacists (during closing time) or adjust work hours</p> <p>Verify the patient's understanding of dosage</p> <p>Give support to partners and refer them for ART programmes</p>
7	<p>Family said no to medications</p> <p>Went for prayers and got cured</p>	<p>Inadequate knowledge</p> <p>Incorrect beliefs and attitudes</p>	<p>Provide family counselling</p> <p>Provide scientific information and examples</p>
8	<p>Patients did not want others to see him or her taking medications</p>	<p>Stigma at place of work or in the community</p> <p>Nondisclosure in the family</p> <p>Discomfort with disclosure of HIV status</p>	<p>Provide counselling support to help with disclosure</p> <p>Identify other support persons such as friends or peers if patient is unable to disclose to family</p>

3.9 TOTAL COST OF PATIENT DEFAULTING

As calculated in section 3.6, the total cost of patient defaulting or taking medication incorrectly amounts to R677,06 for patients on Regimen 1b (68,3 percent of the population, according to the empirical study in chapter four) and R778,41 for patients on Regimen 1a (31,7 percent of the population, according to the empirical study done in chapter four) per month. These costs do not include social grants that 58 percent of the population in the empirical study (Chapter four) receive monthly. Of the 58 percent patients receiving grants, 43 percent of patients receive R500 - R1 000 monthly. Assuming that these patients receive an amount of R780 per month, according to section 3.7.3, total cost of patient default is calculated in the following table:

Table 3.17: Total monthly cost of patient default

	ART	Social Grant	Total
Regimen 1a	R778,41	R780	R1 558,41
Regimen 1b	R677,06	R780	R1 457,06

Government's investment – a total of R1558.41 for patients on Regimen 1a and R1457.06 for patients on Regimen 1b – per month is lost, every time a patient defaults or takes medication incorrectly. Multiply these figures with the current defaulting rate and it will have severe financial implications on the Pharmacies as well as the Hospital Complex. Patient defaulting and non-compliance to ART medication is defiantly a barrier for achieving organisational excellence through healthcare delivery.

3.10 ACHIEVING ORGANISATIONAL EXCELLENCE THROUGH HEALTHCARE DELIVERY

Healthcare is changing constantly, with technological innovations, new treatments, new laws and new types of organisations arising almost daily. It takes a special kind of perspective and leadership to implement much needed change while negotiating the day-to-day demands of a busy and complex organisation.

Every healthcare leader is pressured to improve both clinical outcomes and operational efficiencies. A need to enhance processes in all areas, implement beneficial innovations and achieve both service delivery excellence and financial success is pressing issues unique to healthcare business management.

Today's healthcare executives are challenged to maintain the highest possible standards in care delivery while keeping cost under control. Organisational excellence is to focus on creating an organisation that learns and improves continually. The challenge is to orchestrate your people, processes and equipment to deliver excellent healthcare with maximum efficiency.

A pressing issue unique to healthcare business management is patient compliance. This study examines in depth the range of challenges facing healthcare leaders today around patient defaulting, the cost of patient defaulting, how to improve patient compliance and through improving patient compliance achieving organisational excellence.

3.11 SUMMARY

This chapter highlighted the socio-economic impact of HIV/AIDS on South Africa. Available data suggests that South Africa has one of the highest per capita HIV/AIDS prevalence and infection rates and is experiencing one of the fastest growing HIV/AIDS epidemics in the world. It is expected that HIV/AIDS will impact on the economy in a number of ways.

HIV/AIDS will impact significantly on household income and expenditure, as well as on national income. Poverty is likely to deepen as the epidemic takes its course. As adult members of the household become ill and are forced to give up their jobs, household income will fall. To cope with the change in income and the need to spend more on healthcare, children are taken from school to care for the sick or to contribute to the household income. Because expenditure on food comes under pressure, malnutrition often results, while access to other basic needs also comes under threat.

One of the most visible consequences of the epidemic will be the increase in the number of people seeking medical care. According to the BER, only 15 percent of South Africa's population is covered by private medical schemes, the vast majority of HIV/AIDS will look towards publicly funded hospital care. The financial strain on the public health sector will be severe, not only as a result of the sheer number of people seeking healthcare, but also because healthcare for HIV/AIDS patients is more expensive than for most other conditions.

Government and its partners are committed to the fight against HIV/AIDS. Through the Comprehensive Plan and the National Strategic Plan interventions to reduce morbidity and mortality of HIV/AIDS is outlined and implemented. These plans identify relevant key interventions to be carried out in order to reduce the rate of HIV/AIDS. Four KPAs include prevention; treatment, care and support; human and legal rights; monitoring, research and surveillance. The success of prevention interventions depends largely on collective societal commitments that support individual behaviour change, a responsibility of all South Africans.

As important as equity in the allocation of resources is the need to ensure that the funds allocated to health are sufficient to provide adequate levels of healthcare. Based on primary costs and utilisation data, the study done on antiretroviral treatment costs has calculated the resources required to meet these patient targets. Estimates include the full cost of delivering ART and were calculated to be R778,41 for patients on Regimen 1a and R677,06 for patients on Regimen 1b. A variety of data have been used to calculate the costs of delivering ART, including the cost per comprehensive ART visit, the costs of nutritional supplements, the costs and

utilisation of first and second-line antiretroviral drug regimens, the costs and utilisation of laboratory testing.

Social grants and social assistance refers to non-contributory and income-tested benefits provided by the state to vulnerable groups unable to provide for their own minimum needs, such as the disabled, the elderly and young children in poor households. Almost six million South Africans receive social assistance grants each month and this number is steadily rising as a result of the extension of the Child Support Grant and increased public awareness of eligibility for grants. There are five major social security grants in South Africa and it has two main objectives: the first is to immediately reduce poverty among groups; the second is to increase investment in health, education and nutrition so as to increase economic growth and development.

Poverty levels are so high that most people who are surviving on social grants they receive for their illnesses deliberately neglect to take their treatment as required so that they could continue to receive the grant. There is a need for intensive treatment counselling for patients to understand the importance of completing their medication. Patients need to comply with ARV treatment as a part of assisting in the fight against HIV/AIDS.

Medication non-compliance (non-adherence), the failure to take drugs on time in the dosages prescribed, is as dangerous and costly as many illnesses. Good patient compliance and adherence means taking the right drugs, on time and in the proper doses. The government health sector is committed to the fight against HIV/AIDS, but all the efforts by government and health workers mean absolutely nothing if patients receive their medication, and then don't take them correctly, or not take them at all.

While delivering patient care has always been a primary goal of healthcare organisations, financial outcomes have long been the metric by which success has been measured. Increasingly, however, healthcare leaders are being held accountable for both medical and financial outcomes. Patient defaulting adversely affect the financial outcome of the pharmacy and the hospital. Patient defaulting wastes ARV commodities and the funds could be much better utilized in other areas

of the fight against HIV. As a result, it is crucial that healthcare executives and providers increase patient compliance as it was diagnosed through this study as one of the issues and barriers to achieving organisational excellence through healthcare delivery.

CHAPTER 4

EMPIRICAL STUDY

4.1 INTRODUCTION

The goal of the study was to determine the cost of patient defaulting and the risk and financial impact that non-compliance of patients will have. In the management of HIV/AIDS, it is a well-established fact that poor adherence by patients is an important predictor of the outcome of antiretroviral therapy (Bangsberg *et al.*, 2002:3-15). Studies have indicated that at least 95 percent adherence to ART regimen is optimal (Nischal *et al.*, 2005:316). It has been demonstrated that a ten percent higher level of adherence results in a 21 percent reduction in disease progression. The regimen's pill burden, dosing frequency, food requirements, inconvenience, toxicity and drug interaction profile, lack of patient education and inability of patients to identify their medication, lack of reliable access to healthcare or medication are considered to be predictors of inadequate adherence. These issues can be addressed through greater commitment of the pharmaceutical industry with innovative solutions in partnership with clinicians.

This chapter aims to present certain findings reached through an investigation into the cost of defaulting and non-compliance of patients, and what financial impact it has on the General de la Rey Hospital and the Thusong Hospital Complex Pharmacies. The study sought to answer the following three questions:

1. What is the total cost of a patient defaulting antiretroviral treatment per month?
2. What is the financial impact that defaulting patients has on General de la Rey and Thusong Hospital Complex Pharmacies?
3. How does patient defaulting create a barrier to achieve organisational excellence through healthcare delivery?

In this chapter, the research target and the empirical study will be discussed. Patient non-compliance was researched and measured through a questionnaire. The questionnaire determined the age, gender, education levels, skill level, external

environment, poverty and ART compliance of the population sample. The results and findings of the empirical study will be discussed and conclusions and recommendations will be made in chapter five.

4.2 RESEARCH METHODOLOGY

A descriptive study was conducted using quantitative research methods, in particular questionnaires and in-depth internet research. A quantitative approach was used to understand and describe the impact of ART defaulting and noncompliance on the pharmacies. The research can also be considered to be exploratory as it attempts to highlight the extent of the problem and the impact of HIV/AIDS on the government's health sector. The intention of undertaking such an exploration is to gain new insights into a relevant field of thought, or new knowledge regarding the phenomenon concerned. The most important methodological consideration in descriptive studies is the gathering of accurate information/data about the phenomena being investigated. Descriptive statistics have been implemented in order to describe, summarise, or explain data.

4.2.1 Questionnaire design

The collection of quantitative data was done through a questionnaire to collect all responses needed. The participation and response to the questionnaire was voluntary; therefore, the questionnaire was designed to maintain the interest of the respondent and a small reward/prize was given for participation.

The questionnaire contained precise and clear instructions on how to answer the 38 questions. The languages used in the questionnaire were English and Setswana. The questionnaire started with questions that were easy to answer, and proceeded from general to specific questions. The questions were arranged in a logical order. The questionnaire was analysed with the aid of a computer programme and questions were pre-coded. The sequence in which questions were asked influenced the responses of the participants. Opening questions were easy to answer and

stimulated the respondent's interest; the questions that were more difficult to answer was placed towards the end of the questionnaire.

The questionnaire was designed according to the Likert-type scale. This question format is used to gather data on attitudes and perceptions in scaled-response questions. Respondents had to tick the appropriate box when answering the question. Open-ended questions that the respondents were free to answer in their own words and to express any ideas they think apply were also used. No choices or alternatives were offered in the open-ended questions. These open-ended questions were used for further clarification on certain questions.

4.2.2 Statistical analysis

The statistical analysis of the study was done at North-West University's Statistical Department by Prof. Jan du Plessis. Each questionnaire was transcribed. Data were processed and analyzed throughout the study period. Data were coded and classified as related to the domain of inquiry and to the questions under study. Data were then scrutinized to discover recurrent patterns. Themes were identified and examined to determine if they were consistent with the questions as identified in the structural model that guided the study.

4.2.3 Study area and population

The study was undertaken in the Health Department of the North West province. More specifically, the study concentrated on Ditsobotla sub-district, Ngaka Modiri Molema district (Central), and focused on General de la Rey and Thusong Hospital Complex Pharmaceutical Services, situated in the town of Lichtenburg. Although these two hospitals are separate entities, they report to the same management team, and function together in the Lichtenburg district.

The Hospital Complexes comprise 200 active beds at Thusong Hospital and 41 at General de la Rey Hospital. Clinical staff renders level one health services at both centres, which are 23 km apart on the main road to Mafikeng. Thusong Hospital is mainly surrounded by farms and is a safe environment.

The study was conducted in the rural community of Lichtenburg using a convenience sample. The convenience sample was chosen purely on the basis of availability. Respondents were selected because they were accessible.

The community is a semi-formal settlement. It is generally underdeveloped and lacking in infrastructure and social services. Unemployment and illiteracy are rife. There is a high incidence of crime and violence. Poverty represents a major threat to many families. This community was targeted because patient defaulting in this type of environment is highly probable. The researcher has worked as a community pharmacist in both the hospitals, and was part of the ART team.

A questionnaire was given to each participant to complete in their own time by Mr. B.J. Mediwane (2008), health worker and manager of the ART Wellness Clinic at General de la Rey Hospital, and by Ms. E. Phukile (2008), pharmacist and ART manager for Thusong Hospital, the research assistants, both capable to speak the local language Setswana fluently.

Participants were recruited while waiting for ARV treatment in the Wellness Clinics of both locations, on Tuesdays and Thursdays, which are ARV days at the Hospitals. ARV patients are booked for an appointment for the following month every time they collect medication, preferably on Tuesdays and Thursdays, because of the limited human resources, and the time constraints at both hospitals. The research assistants approached potential participants in the queue at the Wellness Clinic and introduced themselves and generally explained the purpose of the study. They invited those who were willing to participate to fill in the questionnaire. Each participant in the study was informed of the purpose of the study and assured of confidentiality and anonymity. The questionnaire was originally in English, but was also translated to the local language, Setswana, for those participants who were able to read themselves. The research assistants helped participants who could not read or write to complete the questionnaire by asking them the questions in the local language (see Appendix B).

To interview these participants are difficult, because of disclosure fears related to stigmatisation and discrimination discussed in section 2.6. A few open-ended questions were asked to interpret how some of the participants felt. This was not very successful, because of low education levels of respondents in the sample. A total of 50 questionnaires were completed in a week's time frame, focused specifically on Tuesday and Thursday ARV days of the chosen week.

4.3 RESULTS AND FINDINGS

The results and findings of the empirical study will be discussed in this section. It aims to present certain findings reached through the investigation into cost of patient defaulting and non-compliance.

4.3.1 Limitations of the study

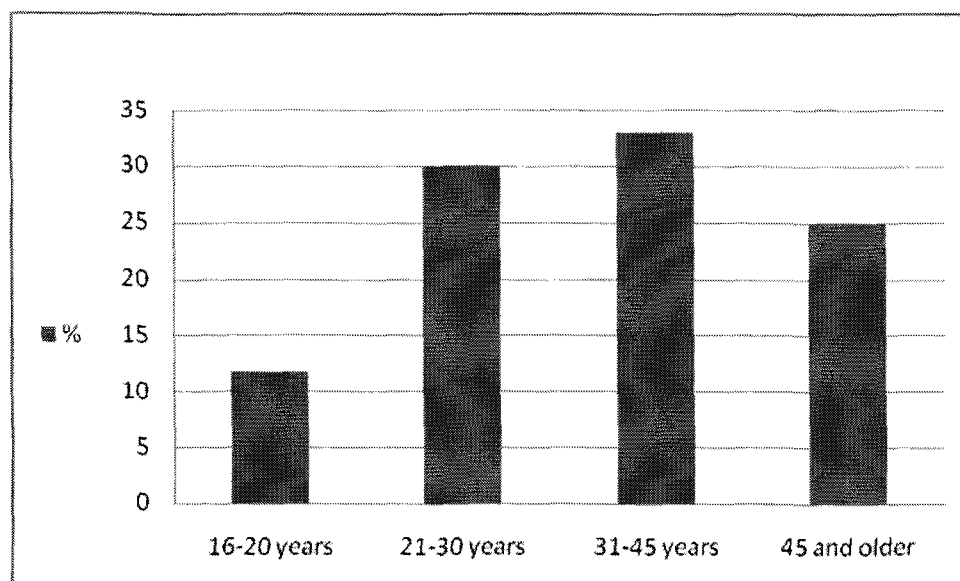
The major limitation for the study is that participants did not open up to discuss why they do not take their medication correctly, and some patients hesitated to disclose non-adherence to health providers whom they wish to please or do not fully trust. Other limitations include the following: this is a quantitative study with a small sample; participants were recruited from the Wellness Clinics at the two previously mentioned hospitals. The study did not include the urban population of Lichtenburg or the part of the population that are covered by medical aids. Another limitation is that only half (53 percent) of the population had some form of school education, and most of them can only speak Setswana, presenting a language barrier. Although we acknowledge that patients on ARV treatment could require other services such as hospital care and treatment for opportunistic infections like TB, these costs have been excluded from the study. Other limitations of this study involve other limitations inherent in quantitative studies.

4.3.2 Results of the empirical study

The following results emerged from the questionnaire; they are consistent with trends reported in the literature.

As evident from the results of question 1, the working age population bears the brunt of the epidemic. Ages mostly affected in the study were 30 percent between 21 - 30 years, and 33 percent between the ages 31 - 45 (see Figure 4.1). By killing off mainly young adults, AIDS seriously weakens the taxable population, reducing the resources available for public expenditure, resulting in increasing pressure for the state's finances and slower growth of the economy. It also results into a smaller skilled population and labour force, with reduced knowledge and work experience, leading to reduced productivity.

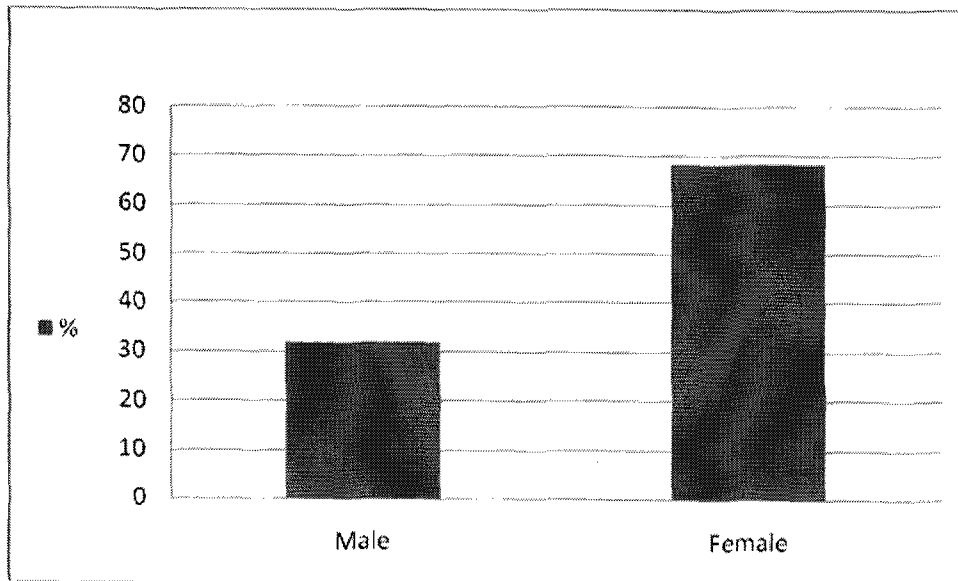
Figure 4.1: Age of the sample population



Question 2 indicated that 68,3 percent of the study sample were female (see Figure 4.5). According to new studies, young African women in informal settlements are at highest risk of HIV infection. Rural women are more vulnerable to HIV infection and medication defaulting, because of low education levels, economic dependence on partners, stigma and discrimination. Socio-economic factors create vulnerability, according to Prof. Thomas Rehle of the HSRC (2006) and the NSP (2007:8).

Stigmatisation, low education levels and women's lower position in the hierarchy of traditional societies, powerlessness and a lack of adequate information about the disease, lead to increased numbers of female HIV infection.

Figure 4.2: Gender of the sample population



Question 3 indicated that only five percent of the female population of the study were pregnant. Preventing mother-to-child transfer procedures were already taken to ensure minimized risk for mother and child during labour, and patients received ART accordingly. Question 4 indicated that 80 percent of the target population had children, and question 5 found that the average number of children is between one and three. Although questions 3 to 5 are not directly related to the aim of this study, it is important to emphasize that these children are also mostly affected by the HIV/AIDS epidemic as mentioned in section 3.3, and that they play a crucial role in the economic future of South Africa.

Questions 6 to 9 were focused on the rural area and poverty in the community. According to the results of these questions, 90 percent of patients lived in an informal settlement, 58 percent lived in a house and 40 percent in a shack, and 85 percent of the study's population shared a home with people. A total of 60 percent of the study population used taxi services to get to the hospital. As discussed in section 1.5.1, poverty affects 62 percent of the province's population, the second highest provincial figure for South Africa. HIV is becoming a disease of the poor. According

to the NACC 2000 - 2005 (National AIDS Control Council) Work Plan (SA, 2005b), HIV/AIDS increasingly affects the poor and people with low levels of education. The severity of the epidemic is closely linked to the region's poverty, low status of women, and other socio-economic factors. Substantial reduction in poverty levels is key to subsequent lowering of HIV prevalence.

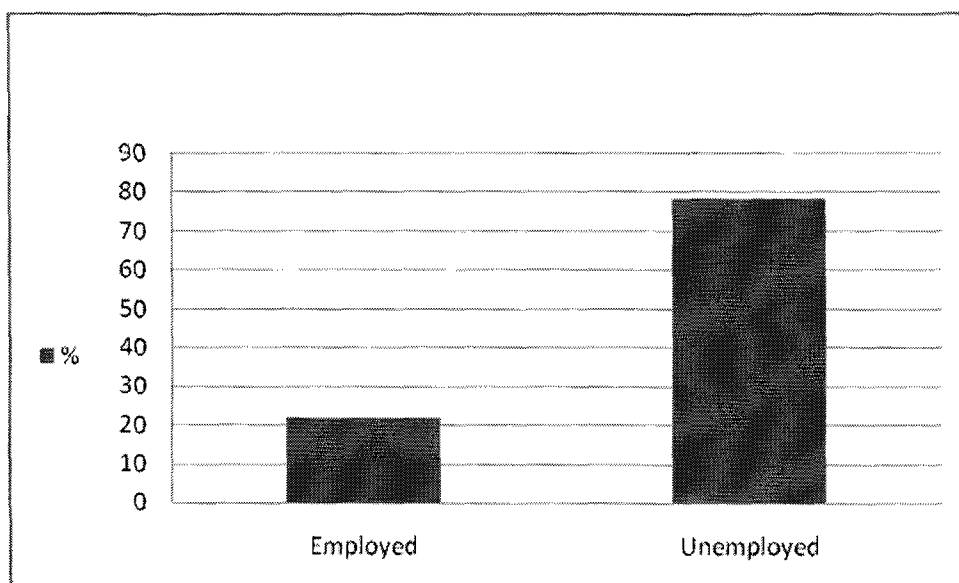
Questions 10 and 11 asked how many times the patients visit the hospital per month and why they visit the hospital. The research showed that 88,3 percent of patients only visit the hospital once a month to collect medication. ARV patients that are healthy and well only need to visit the hospital once a month for collection of medications and routine check-ups.

Question 12 was focused on service delivery from the two government hospitals and pharmacies. The research shows that most of these patients don't wait more than an hour to be served by professional, committed and dedicated health workers. North West province, according to Thornley (2006:63), has been one of the most visibly active sectors in terms of prevention and treatment of HIV/AIDS. North West Provincial Health Department represents one of the most progressive and advanced departments in the country. Thornley, in his article, commends them for their willingness to try new things and above all to effectively translate talk into action. Although there is always room for improvement, Ditsobotla sub-district, Ngaka Modiri Molema district (Central), General de la Rey and Thusong Hospital Complex Pharmaceutical Services are, with the resources available to them, maintaining the highest possible standards in healthcare delivery. The South African government is also committed in fighting HIV/AIDS in South Africa as is evident from the vast initiatives they have implemented as discussed in section 2.7 and 3.4.2.

Questions 13, 14 and 15 tested the level of education of the sample. Although 53,3 percent of the sample did attend school, and 73 percent can read or write, 45 percent did not attend school because of financial situations. Many of the patients in this study had to leave school to perform household labour, look after a sick family member or bereave their parents' death. Most of them could also not afford school fees, because their parents were too sick to earn a living or out of general poverty and unemployment.

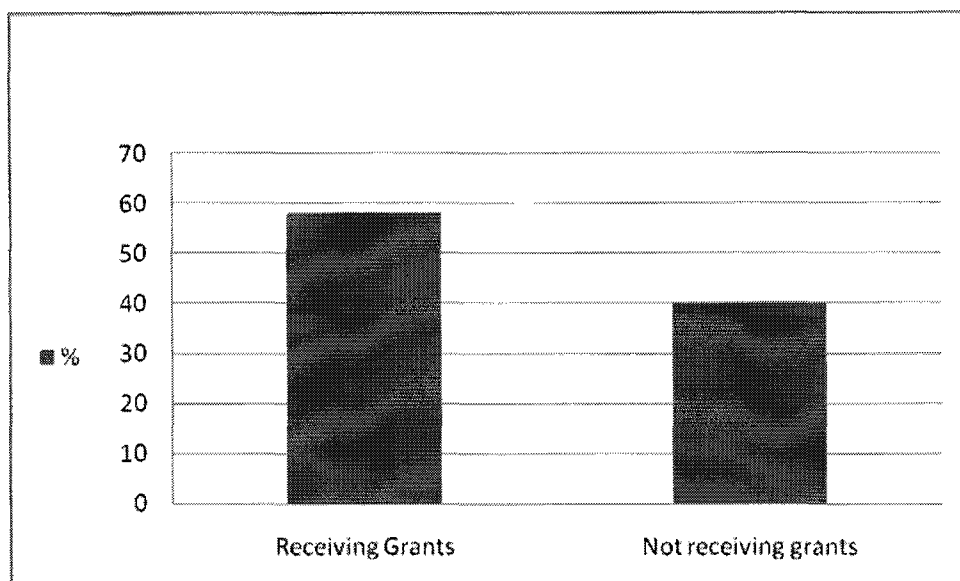
Questions 16 and 17 focused on the employment rate in the population. As evident in the literature study, poverty and unemployment play a key role in HIV/AIDS infection, with educated people in a position to respond to information available. This survey shows that 78,3 percent of the sample population is unemployed. Unemployment increases poverty, and increases the number of people seeking medical care from public funded hospitals, increasing the burden on government, as discussed in section 3.3 and 3.4.

Figure 4.3: Employment percentage of the sample population



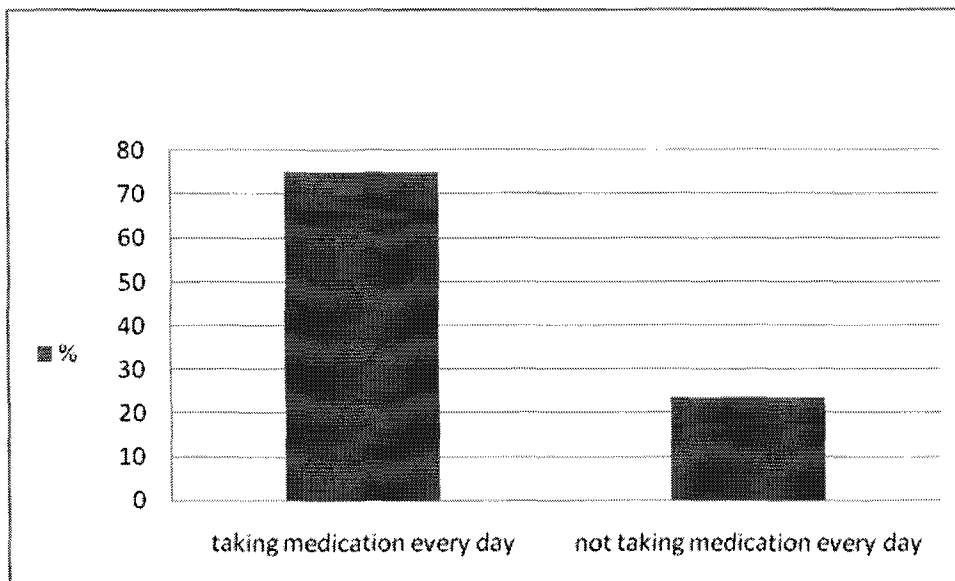
Questions 18 and 19 were directed at government grants. Of the study population, 58 percent receive a monthly grant from government (see Figure 4.4), and 63,3 percent of these grants were disability grants (ARV grants – CD4 count). As discussed in section 3.7, most of the families receiving these grants have no other form of income and are reliant on the R780 for monthly livelihood. These patients are reliant on these grants because of unemployment, poverty, stigma and low levels of education.

Figure 4.4: Percentage of patients that receive grants from government



Questions 20 to 35 deal with medication, medication defaulting and patient compliance. The research shows that 43.3 percent of the population have been on their ART medication for more than two years, according to question 20. Question 21 asked if patients take their medication every day: 75 percent answered yes, but 23.3 percent answered no; this means that one quarter (23 percent) of patients are not complying to the twice daily dose of expensive antiretroviral treatment (see Figure 4.5), increasing the risk of developing a drug resistant strain of HIV/AIDS infection as well as increasing the risk of spreading HIV/AIDS to others.

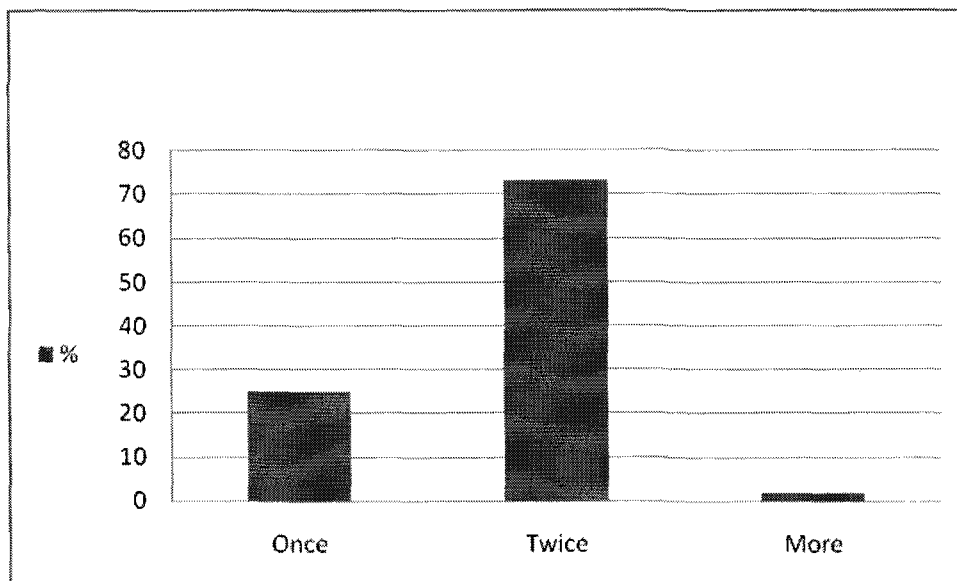
Figure 4.5: Percentage of patients taking medication every day



Asked why they don't take the medication every day (question 22), the reply was simply that they forget, which is human, but the effect that simply forgetting has on government's funding resources (real taxpayers) is devastating.

Question 24 asked respondents how many times per day they take their ARV treatment, which, according to literature, must be twice a day: Some 73,3 percent did in fact take their medication twice a day, but once again, 25 percent did not take their medication twice a day, proving again that 25 percent of patients are defaulting or taking medication incorrectly thereby increasing drug resistance (see Figure 4.6).

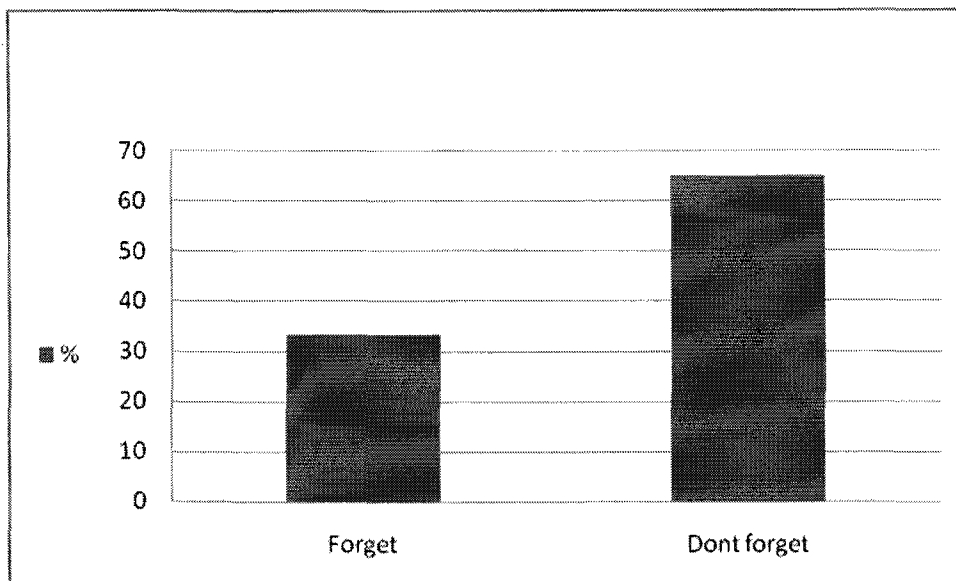
Figure 4.6: How many times per day a patient takes medication



Research has revealed that patients commonly misunderstand their regimen, resulting in unintentional non-adherence (Bangsberg *et al.*, 2002:14) which highlights low levels of education, and the need for education in the community.

Question 25 asked if patients do, in fact, forget to take their medication. Nearly a third, 65 percent, said no, but 33 percent did admit to forgetting to take medication (see Figure 4.7). Some respondents might have hesitated to disclose the non-adherence to the health workers whom they wish to please, or do not fully trust. Factors influencing patient adherence and reasons for missing ART doses are discussed in section 3.8.

Figure 4.7: Percentage of patients admitting to forget to take their medication



Question 26 asked the 33 percent that did sometimes forget to take their medication, why it is that they sometimes forget; the answer most of the patients gave, was that they simply forget, they were too busy during the day with the kids, or at work, that they forgot. People are not perfect, according to Halkitis (2003:273) (section 3.8), but non-adherence is putting further financial pressure on government and societies.

4.3.3 Main findings from an analysis of the data

Several themes emerged from this study based on data analysis:

4.3.3.1 Females are more vulnerable to HIV/AIDS

Females, particularly rural women are more vulnerable to HIV/AIDS and medication defaulting due to the low status of women, low levels of education, economic dependence on partners, stigma, discrimination, poverty and unemployment. They continue to experience discriminatory attitudes and practices – particularly from male partners – and live in an environment rife with high levels of sexual and other gender based violence like social norms (more than one wife) and resistance to the use of condoms.

4.3.3.2 Poverty and HIV/AIDS are inextricably linked

Poor individuals are more susceptible to HIV-infection than their non-poor counterparts, for the following reasons: Poverty and its associated factors, such as low education, reduce the chances of the poor having good knowledge of the means of preventing HIV-infection and poor women are less likely to use condoms, or to negotiate condom use due to both low education levels and economic dependence on their partners.

- **Patients deliberately defaulting medication to receive grants**

Most people who were surviving on social grants they receive for their illnesses deliberately neglected to take their ARV treatment as required, so that they could continue to receive the grants. Poverty levels are so high that some patients don't want to be cured to continue to receive their grant. There is an intensive need for treatment counselling for patients to understand the importance of completing their medication. Patients should be urged to comply with treatment requirements as part of assisting the fight against HIV/AIDS, which include protecting others from any possible infection.

- **The total cost of a defaulting patient**

The purpose of this study is to determine the total cost of a patient defaulting ARV treatment, and the financial impact that defaulting patients has on General de la Rey and Thusong Hospital Complex Pharmacies. Patient defaulting is one of the issues diagnosed as a barrier to achieving organisational excellence through healthcare delivery.

The total cost of a patient defaulting one month of ARV treatment was determined in section 3.8.1 and was calculated to be R1 457,06. The empirical study showed in questions 21 and 24 that 25 percent of patients default their medication because of various reasons discussed in the study. If 25 percent of the sample of 50 people default per month according to the empirical study; that is, 12 patients defaulting per month. If 12 patients default per month, the cost implications of defaulting for the pharmacies per patient (assumed that the patients in the study were on Regimen 1b) is R677.07 (see

Table 3.14, Section 3.6). The cost of defaulting per month on the pharmacies amounts to R8 124,84 for the 12 patients. The cost implications for the Hospital Complex for one patient defaulting is R1 457,06 (Table 3.16, Section 3.8.1). The accumulated cost incurred by the 12 patients defaulting, according to the empirical study in chapter four is R17 484,72 (see Table 4.1).

Table 4.1: Cost of patient defaulting according to empirical study

	COST PER PATIENT	COST OF SAMPLE	COST PER SAMPLE PER YEAR	SECTION
Cost on Gen. de la Rey and Thusong Pharmacies	R677.07	R8124.84	R97 498.08	Table 3.14 Section 3.6
Accumulated cost on Hospital Complex	R1457.06	R17484.72	R209 816.64	Table 3.16 Section 3.8.1

From the above calculations, it is very clear that patient defaulting has a devastating financial effect on the health sector, specifically the pharmacies as well as the Hospital Complex. The public health sector and public hospitals are funded out of general tax revenue and essentially provide medical services free of charge. If these figures are calculated for each provincial public health sector, it will be a huge waste of taxpayer's money. These figures clearly indicate that patient defaulting acts as a barrier to achieve organisational excellence through healthcare delivery. Increasing patient compliance and promoting patient awareness will have beneficial results on the financial resources of the pharmacies. The financial resources that are lost monthly because of patient defaulting, could be much better utilized in improving HIV awareness in the community and improving health service delivery in the pharmacies or alleviating community poverty. These funds could help change people's lives if utilized and distributed better. Further research and calculations of cost implications of defaulting patients from other government health institutions are needed to calculate the total cost of patient

non-compliance, and the effect that this has on the health sector and in achieving organisational excellence through healthcare delivery.

4.4 SUMMARY

From the above calculations and results of the study, clearly patient defaulting has a devastating financial effect on the public health sector, specifically the pharmacies as well as the hospital complex. Preventing patient defaulting and improving patient compliance are key to reduce wasting precious financial resources and ARV commodities that can be better utilized to alleviate poverty. Awareness of HIV/AIDS is poor in rural communities like Lichtenburg, and along with cultural differences, taboos and stigma, it further reduces the acceptance of HIV/AIDS patients in the community. These factors contribute to low adherence and higher resistance, and greatly impact the overall outcome of ART.

The supply side of service delivery is effective. Government's public health institutions like General de la Rey and Thusong Hospitals have sufficient service delivery and quality patient care with the limited resources available to them. One of the findings of this study is that the demand side of the socio-economic transaction presents a problem because of low levels of education, awareness, stigma and poverty. Increased efforts to achieve organisational excellence are necessary from government's public health sector to achieve the highest possible standards in care delivery while keeping costs under control.

Interventions to improve overall social acceptance of HIV/AIDS and its therapy have become essential for better outcomes. Government's and industry's initiatives such as disease awareness campaigns by means of mass communication activities, multilingual posters, HIV/AIDS patient education books, patient counselling/help-lines and online information resources are expected to improve awareness of HIV/AIDS.

The study has proven that patient defaulting has a negative impact on the pharmacies' financial budget. Patients are defaulting medication because of a lack of

knowledge about HIV/AIDS, low education, poverty and stigma. Greater efforts to promote HIV awareness and education are needed in communities to improve quality of life for all. Financial resources lost due to patient non-compliance can be better utilized in other segments of the fight against HIV/AIDS.

CHAPTER 5

SUMMARY OF LITERATURE, RECOMMENDATIONS AND CONCLUSION

5.1 INTRODUCTION

In 2000, the Minister of Health, Dr Manto Tshabalala-Msimang challenged the country to break the AIDS chain. The 2000-2005 National Strategic Plan outlined some key interventions to bring the country close to the realisation of this vision. Five years later much has been done, much achieved. More could have been done in some areas. There is no reason to doubt the commitment demonstrated by government and its partners in the fight against HIV and AIDS.

The indications are that we are indeed on course towards breaking the AIDS chain. The rate of the increase in prevalence of HIV/AIDS has slowed down in the past five years, with a tendency to stabilisation. The down side is that these stabilisation rates are high, with many devastating impacts on the South African society in general. Realising this, the Cabinet approved the National Operational Plan for Comprehensive HIV and AIDS management, treatment, care and support in 2003 (SA, 2003a). It is through the Comprehensive Plan that interventions to reduce the morbidity and mortality of HIV and AIDS were outlined and implemented with great enthusiasm by all partners.

South Africans are mobilised to fight the HIV/AIDS epidemic, government is leading with relevant policies, programmes, and commitment of resources. More can still be done by civil society to improve the manner in which they are organised for better efficiency. Individuals and communities need to take charge.

These achievements should inspire everyone to work for even better results. The Strategic Plan 2007 - 2011 (NSP, 2007) defines clearly the nature of the South African HIV/AIDS problem. It identifies relevant key interventions to be carried out in

order to reduce, by an ambitious but realistic magnitude, the rate of new HIV/AIDS infections. It also recognises the plight of the many people that are living with HIV/AIDS and outlines relevant interventions to mitigate the impact of this disease on individuals, families, and communities. All of these things have to be done simultaneously.

However, a sustainable and effective national response to this epidemic is one that has HIV/AIDS prevention as its fulcrum. The success of prevention interventions depends largely on collective societal commitments that support individual behaviour change, a responsibility of all South Africans.

The country is on course towards breaking the chain of AIDS; people should, in the next five years, assist the country to reach the desired goals of halving new infections and reducing the impact of HIV/AIDS on individuals, families and society. The dream for South Africa is to be the country that has, in a sustainable manner, won the fight against HIV/AIDS (Mlambo-Ngcuka, 2007:4).

This chapter summarizes the literature discussed in this study and will discuss the results and findings of the study. Recommendations will be made to improve patient compliance and achieving organisational excellence through healthcare delivery.

5.2 BROAD OVERVIEW OF THE LITERATURE DISCUSSED IN THE STUDY

HIV/AIDS is one of the main challenges facing South Africa today. Some two decades since the introduction of the disease in the general population, the epidemiological situation is characterized by a very large number of people living with HIV/AIDS and a disproportionate effect on particular sectors of society: young women, the poor, as well as those living in underdeveloped areas in the country. HIV/AIDS, however, affects the lives of all people who live in South Africa in different ways.

South Africa faces one of the world's most severe HIV/AIDS epidemics, with different estimates putting the number of South Africans currently infected with HIV/AIDS

between 4 - 6 million. The disease has reached emergency levels in South Africa, leading to a decline in savings and investment with rising unemployment. HIV/AIDS represents a heavy burden on public finances, particularly for the health sector (Bertozzi *et al.*, 2005:2). The World Bank estimated that with the prevalence of HIV/AIDS at 20 percent in 1999, South Africa's gross domestic product (GDP) will be 17 percent less in 2010 than it would have been without the presence of the deadly virus. Since the working age population will bear the brunt of the impact, HIV/AIDS is bound to have an adverse impact on the economy. Both the production and expenditure sides of the economy will be adversely affected (BER, 2006:35).

But the situation is even worse taking into consideration the individual households affected by the disease. For millions of families in South Africa, HIV/AIDS means dramatic reduction of income, because it generally affects the economically active members of the household. As time passes, HIV/AIDS becomes increasingly concentrated among poor populations. While the wealthy learn to protect themselves and have the resources to make HIV/AIDS into a chronic, not deadly disease, the poor remain vulnerable. This is both a result of the characteristics of poverty itself – low education levels, limited access to information or health services and the consequence of the lack of finances to fight the disease.

According to the Bureau for Economic Research BER (2006:39), one of the most visible consequences of the epidemic will be the increase in the number of people seeking medical care. According to the BER, only ± 15 percent of South Africa's population is covered by employment related and other private medical schemes; the vast majority of HIV/AIDS will look towards publicly funded hospitals for medical care. Public hospitals are funded out of general tax revenue and essentially provide medical services free of charge. The financial strain on the public health sector will be severe, not only as a result of the sheer number of people seeking healthcare, but also because healthcare for HIV/AIDS patients is more expensive than for most other conditions.

“We have a major challenge on our hands” (Bertozzi *et al.*, 2005:1).

5.3 PROBLEM STATEMENT AND CONCLUSION FINDINGS

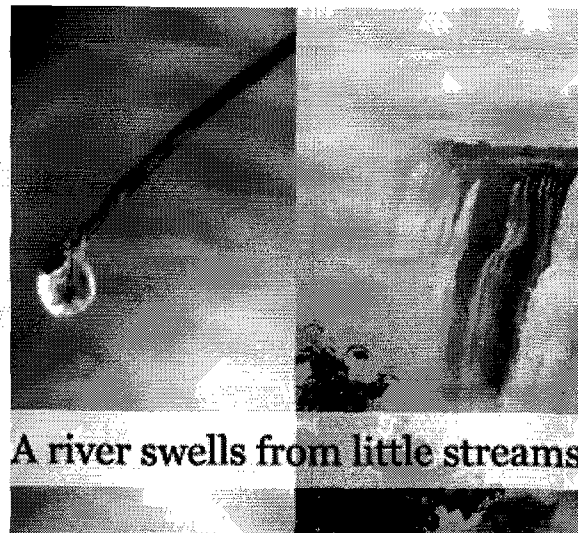
The ARV coverage rate in South Africa is only 33 percent; this means currently we are only treating an estimated 325 000 of HIV/AIDS patients, leaving us with a vast need for ART treatment. Of the 33 percent of people treated in South Africa, a 95 percent adherence rate is required for optimal results of ART. This is not happening: patients are defaulting medication because of factors that include disease characteristics, treatment regimen, patient variables, clinical settings and patient provider relations mentioned in section 3.8. The consequences of poor adherence have devastating effects not only on the individual, but on the economic health perspective as well.

The problem statement presented in this study was to determine the cost of patient defaulting/non-compliance/poor adherence, and to determine the financial impact of non adherence on the pharmacies. Proving that patient defaulting indeed is a barrier to achieve organisational excellence, the study found that the cost of defaulting per patient in the study sample amount to R677,06 (Section 3.6). If this amount is multiplied by the study's 25 percent defaulting rate, which is 12 patients, the total cost of defaulting on the General de la Rey and Thusong Hospital Complex Pharmaceutical Services is R8 124,84 per month.

The cost of defaulting patients per month has a devastating effect on the already limited financial resources of the pharmacies. These funds that are lost due to poor patient adherence to ART could be much better utilized in any part of the pharmacies' daily operations.

With the cost of patient defaulting ART, the cost of secondary treatment, treatment of opportunistic infections of HIV patients and side-effect treatment not included in this study, it is easy to see that HIV has a definite negative impact on the financial and economic side of the pharmacy. The ART costs of the pharmacy plus the cost of social grants spent on ARV patients, not only negatively affect the pharmacies, but also has a devastating effect on the General de la Rey and Thusong Hospital Complex. With the vast majority of HIV/AIDS cases and the growth in the number of people infected, who will look towards publicly funded hospitals for medical care, the

financial strain on the two hospital pharmacies will be severe, not only as a result of the sheer number of people seeking healthcare, but also because healthcare for AIDS patients is more expensive than for most other conditions.



A river swells from little streams: if the cost of defaulting patients were to be calculated for all government pharmacies in the public health sector, the financial loss would be immense.

5.4 RECOMMENDATIONS

HIV/AIDS has been in the spotlight for many years with its focus being on a myriad issues covering prevention, treatment, access, social grants, preventing mother-to-child transmission programmes, the lack of proper infrastructure of the health system, a lack of capacity in the health sector, the controversial and denialist attitude of the former President Thabo Mbeki and the previous Minister of Health, Manto Tshabalala Msimang; or communicable and opportunistic infections such as malaria, TB, multi-drug resistant TB and extreme drug-resistant TB. The list contains a mixed bag of successes coupled with more challenges to be overcome. However, through all the obstacles, we are at a point where the knowledge gained is imperative for a breakthrough (Harvard, 2008:8).

Preventing patient defaulting and improving patient compliance is key to reduce wasting precious financial resources that can be better utilized to alleviate poverty. Awareness of HIV/AIDS is poor in rural communities like Lichtenburg. Cultural differences, taboos and stigma further reduce the acceptance of HIV/AIDS patients in the community. These factors contribute to low adherence and higher resistance and greatly impact the overall outcome of ART. Interventions to improve overall social acceptance of HIV/AIDS and its therapy have become essential for better outcome. Government's and industry's initiatives such as disease awareness campaigns by means of mass communication activities, multilingual posters, HIV/AIDS patient education books, patient counselling/help-lines and online information resources are expected to improve awareness of HIV/AIDS.

Objectives to improve patient compliance (Mabunda, 2006:23-29):

- To empower the public with information and knowledge on HIV/AIDS that will assist them in developing positive sexuality and life skills;
- To raise awareness on HIV/AIDS within the community and provide additional counselling and support;
- Mobilise community to access local voluntary HIV counselling and testing services;
- Keeping HIV negative people negative – preventions is a key priority;
- Reduce stigma among people living with HIV and break the silence that surrounds the pandemic;
- Alleviate poverty and create working opportunities;
- Keep children in school and protect them from exploitation and other abuse;
- Empower and educate women; and
- Continuous improvement of healthcare service delivery.

Recommendations for General de la Rey and Thusong Pharmacies to improve patient adherence will be to maintain the high standards of care delivery in the pharmacies, with maximum efficiency while keeping costs under control. The pharmacist plays a very important role in adherence counselling. Pharmacists are responsible for counselling patients on and checking for side effects, adverse

reactions and drug interactions and adherence monitoring; for example, by doing pill counts, and identifying ways to improve adherence. Pharmacy staff must spend more time on patient counselling, they must ensure and help patients develop an understanding of their treatment and its challenges, prepare patients to initiate treatment, provide ongoing support and motivation for patients to adhere to treatment over the long term, help patients develop good treatment-taking behaviour and help patients set goals for their treatment. Improved patient adherence will cut defaulting cost on the pharmacies.

5.4.1 Strategies and tools to enhance adherence

Currently, it is impossible to identify an overall successful adherence- improving strategy performed by pharmacists. More well-designed and well-conducted studies on the effectiveness of interventions by a community pharmacist to improve patient adherence to ART need to be performed. The goal will be to help people develop adherence strategies for dealing with these changes or break in routine and to develop systems that will allow patients' adherence routines to be applied to different contexts, times and places. Strategies to enhance adherence include:

5.4.1.1 Pre-treatment strategies

- Identify the potentially non-adherent patient and address the barriers to adherence during counselling before first ARV prescription;
- Identify an adherence partner or buddy, or a peer educator;
- Ask the patient to demonstrate adherence ability; and
- Identify reminders or tools to help in taking pills.

5.4.1.2 Ongoing adherence strategies

- Generate daily-due reports and refill list and “flag” late patients; and
- Use incentives and enablers (for example, having income-generating projects for caregivers or providing transport on clinic days, or food).

5.4.1.3 Adherence counselling from multidisciplinary team

- The patient must get the same message from all: doctors, pharmacist, adherence nurse, counsellor, social worker, family and friends.
- Help patients develop an understanding of their treatment and its challenges.
- Provide ongoing support for patients to adhere to treatment over the long term, and help patients develop good treatment-taking behaviour.

Pharmacists should assess the patient’s understanding of the illness and therapy, communicate the benefits of treatment, assess the patient’s readiness to carry out the plan, and discuss any barriers to adherence that patients may have. We must not ignore the need for adherence interventions. Addressing problems with treatment adherence is another contribution that pharmacists and pharmacies can make to the multidisciplinary patient care team to achieve organisational excellence through healthcare delivery and the fight against HIV/AIDS. The severity of the problem and the consequences for noncompliance demands attention from the national and provincial, public and private healthcare profession.

5.4.2 Identify performance gaps or opportunities for healthcare improvement

Today’s healthcare executives are challenged to maintain the highest possible standards in care delivery while keeping costs under control. With the vast majority of patients looking towards public funded hospitals for healthcare, challenges government hospitals face include: maximum utilization of available resources, controlling the wastage of ART related commodities, responding adequately and

promptly to the constant changes in the ART programmes, and to promote rational use of HIV/AIDS related commodities.

Government hospitals should focus on creating an organisation that learns and improves continually, to orchestrate the people, processes and equipment to deliver excellent healthcare with maximum efficiency to achieve organisational excellence through healthcare delivery.

Recommendations to improve excellence in healthcare delivery:

- Developing effective operational systems to manage and control cost, improve quality and consistency of processes, and utilize staff efficiently and effectively;
- Implementing best practices to attract and retain the right people;
- Establishing an organisational culture of continuous improvement, learning and safety; and
- Recognizing and overcoming barriers to medication adherence.

This will ensure access to a constant supply of high-quality, efficacious ARV medicines and related health commodities at the lowest cost.

5.4.3 Other recommendations

What we do today in managing the HIV epidemic will have a direct impact on our children's lives in 20 years' time. Some fundamental areas where action could be taken, namely that:

It is recommended that the study be extended beyond the scope of the Ditsobotla sub-district to provincial and national public health sectors to determine the total impact that patient defaulting has on South Africa and on organisational excellence through healthcare delivery. Compare implications of patient defaulting in rural areas to patient defaulting in urban areas, and measure the differentiation of patient defaulting between provinces.

Medical aids could play a more proactive role in encouraging members who may be HIV positive to know their status, and to seek treatment. Not only would this save the life of the person concerned, but there is direct economic benefit to the scheme and its members. Corporate companies should place more emphasis on requiring their suppliers to implement HIV workplace programmes, but simultaneously provide them with technical support.

The media could do more in presenting the facts about HIV and how infection takes place when reporting on sensational stories. There also needs to be greater co-ordination between the three purpose-driven media campaigns, namely Khomanani, Soul City and LoveLife.

Research programmes need to focus more on what we do not know, rather than confirming what we do. Research, especially in the private sector, seems to cover the same territory; yet, there is so much that the research community still do not know about how the disease is spreading.

Peer education could become the medium through which we catalyse action, not only in the workplace, but into the broader community. Peer educator programmes can be revitalised, and become an instrument through which to achieve positive behaviour change.

Direct action in addressing stigma needs to be undertaken, but the magnitude of the task should not be underestimated. Dealing with stigma will mean reaching into the deepest parts of our psyche and understanding our psycho-sexual behaviour in the context of our society.

Government is committed to the fight against AIDS. While pressure is mounting on government hospitals with the increased number of people seeking medical care, government staff is doing the best they can to make free primary healthcare accessible to all with the little resources they have. The “brain drain” is a serious problem, and most health workers are overworked, stressed and strained. Government would have to launch an intensive exercise to develop and maintain human resources in the health sector.

Finally, people should be asking themselves, "What can I do in becoming more effective in dealing with HIV?" Simple actions that one can take are to start thinking about HIV differently. Do not fight against HIV, but rather be wise and learn how to live with it. This does not mean, however, one should allow oneself or others to become infected. Talk to others about HIV, especially children. Know your status, and if you are positive, get treatment early.

5.5 CONCLUSION

The country has to come together as a nation to inspire and mobilise South Africans to become active citizens for good. The vision is to build a country that lives its constitutional values, is safe, and has opportunity for all - so that we and our children have hope in the future. All across this great nation, good people have been independently organising, tirelessly striving and selflessly building communities that care. You can play a part in this, no matter how insignificant you think you or your actions may be. Every little bit makes a difference, and if we can mobilise the collective, as we believe we can, we can ALL contribute...for good. It's time to mobilise our nation, to bring us all together into an unstoppable force. A river swells from little streams. It starts with us.

One day, we will talk about an HIV/AIDS success story and you will say, "Yes, we *made it, we were part of the battle.*" (Anon., 2006a)

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APPENDIX A
NATIONAL STRATEGIC PLAN 2007 – 2011
KEY PRIORITY AREAS

PRIORITY AREA 1: Prevention: 50% reduction in HIV incidence rate by 2011

GOAL 1: REDUCE VULNERABILITY TO HIV INFECTION AND THE IMPACT OF AIDS

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
1.1: Accelerate poverty reduction strategies and strengthen safety nets to mitigate the impact of poverty	Scale up access to government poverty alleviation programmes	30%	40%	60%	80%	90%	Presidency; SALGA, DPLG Govt, Treasury DSD; DTI; Business
	Monitor poverty reduction programmes and report on MDG target one	Annual	Annual	Annual	Annual	Annual	Presidency; DSD; DTI; Private sector; NPA
	Ensure equitable provision of basic social services such as housing, water, sanitation, roads, transport, health services, education especially in rural and urban informal settlements	Quarterly campaigns	Quarterly campaigns	Quarterly campaigns	Quarterly campaigns	Quarterly campaigns	DPLG; DSD; DTI; SALGA; Local Authorities, Business; Spatial development partners
	Introduce sustainable income transfer system to poor families including child-headed households	20%	30%	40%	50%	60%	Treasury; Social Development; Civil Society
1.2: Accelerate programmes to empower women and educate men, and women (including the boy and girl child) on human rights in general and women's rights in particular	Implement all national policies and legislation aimed at improving the status of women	Annual monitoring	Annual	Annual	Annual	Annual	Presidency; Men's sector, women's sector; DoH; DPLG; NPA
	Develop and implement a communication strategy including leadership messages, to educate men and women, boys and girls, on women's rights and human rights	Communication Strategy developed	Quarterly campaigns	Quarterly campaigns	Quarterly campaigns	Quarterly campaigns	Presidency NPA AI
	Roll-out integrated microfinance and gender education interventions starting in the poorest and highest HIV burden areas	Develop & implement at least 1/province	4/province	8/province	16/province	32/province	DSD; Private sector; Treasury; NGOs; Presidency
1.3: Develop and implement strategies to address gender based violence	Develop communication strategies including leadership messages, which addresses the unacceptability of coercive sex, gender power stereotypes and the stigmatisation of rape survivors	Communication Strategy developed	Quarterly campaigns and ongoing	Quarterly campaigns and ongoing	Quarterly campaigns and ongoing	Quarterly campaigns and ongoing	NPA; DoE; DoH; DSD; DoJ; Presidency; NGOs

1.4: Create an enabling environment for HIV testing	Develop high profile campaigns utilising peer influence to promote HIV testing and disclosure	Develop & implement	Monthly	Monthly	Monthly	Monthly	DOH, Social Development Cluster, Civil Society Structures, Private Sector
	Expand access to HIV testing beyond formal health care settings such as community and non-health care settings	At least 1 non-health care facility point per district	5/district	10/district	20/district	30/district	DOH, Social Development Cluster, Civil Society Structures, Private Sector
	Develop clear, consistent HIV prevention messages to be delivered by leadership from all sectors at all available opportunities	Prevention key messages for leadership developed	Update quarterly	Update quarterly	Update quarterly	Update quarterly	DOH, Govt, Civil Society, Private Sector
1.5: Build and maintain leadership from all sectors of society to promote and support the NSP goals	Ensure regular updates in sectors on priority activities and messages	Quarterly reports on sector indicators	Quarterly reports on sector indicators	Quarterly reports on sector indicators	Quarterly reports on sector indicators	Quarterly reports on sector indicators	SANAC
	Mobilise and engage custodians of culture and cultural practices through debates, seminars and workshops on cultural practices that fuel the spread of HIV as well as those that are desirable	Program for traditional leaders developed	Quarterly forum	Quarterly forum	Quarterly forum	Quarterly forum	Traditional Leaders Sector, DACST, DoH, traditional structures, civil society, & private sector
1.6: Support national efforts to strengthen social cohesion in communities and to support the institution of the family	Support programmes that aim to develop HIV and AIDS knowledgeable and competent communities and families	Develop & implement	Ongoing	Ongoing	Ongoing	Ongoing	DOH, Social Development Cluster, Civil Society Structures, Private Sector, DPLG, SALGA, local authorities
1.7: Build AIDS competent communities through tailored competency processes.	Design and implement ward-based community competency programmes in most vulnerable communities	Community competency programmes developed and piloted in 9 provinces	30% ward-based vulnerable communities covered	50%	60%	70%	DOH, DPLG, SALGA, DSD, Local authorities, Private sector CBO's

GOAL 2: REDUCE SEXUAL TRANSMISSION OF HIV

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
2.1: Strengthen behaviour change programmes, interventions and curricula for the prevention of sexual transmission of HIV, customised for different target groups with a focus on those more vulnerable to and at higher risk of HIV infection	Introduce, evaluate and customise curricula and interventions for different target groups including: Young people out of school, primary school children, secondary school children, higher education institutions, young women and pregnant women, older men and women, higher risk groups and vulnerable populations (informal settlements, rural areas) (see below)	Evaluation, improvement & introduction	Ongoing	Ongoing	Ongoing	Ongoing	DOE, DoH, All government departments, all sectors of civil society
2.2: Implement interventions targeted at reducing HIV infection in young people, focusing on young women	Identify and prioritise interventions in schools reporting high rates of teenage pregnancies per year through a gender sensitive package that addresses sexual & reproductive health and rights, HIV, alcohol and substance abuse.	Create spatial map and database and start implementation in priority schools	Implementation in 50% of priority schools	Implementation in 70% of priority schools	Implementation in 80% of priority schools	Implementation in 90% of priority schools	DOE, DSD, DoH, PLHIV, Professional organisations, civil society, traditional structures
	Implement legislation and policies and programs aimed at keeping young people in schools, (particularly orphans and vulnerable children)	Identify and implement	Ongoing	Ongoing	Ongoing	Ongoing	DOE, Social cluster, DoH, civil society, traditional structures, private sector, DTI, Treasury
	Introduce, strengthen and evaluate life skills, SRH education and HIV prevention programmes in all primary and secondary schools	70% institutions	80%	90%	95%	98%	DOE, DoH, NGOs, DSD, academic institutions
	Enhance training of teachers and NGOs to ensure quality delivery of life skills, SRH and HIV prevention programmes in schools	Review and start implementation	30% training completed per district	50% training completed per district	60% training completed per district	80% training completed per district	DOE, Social cluster, Private sector, academic institutions, NGO sector
2.3: Increase open discussion of HIV and sexuality between parents and children	Evaluate, adapt and implement parenting programmes that promote positive engagement and communication with children on sexuality and HIV	Implement in each province	30% of districts covered	50%	70%	90%	Social Cluster, NGOs and Civil Society Structures, DAC, DPLG, Local Authorities

	Strengthen SRH and HIV prevention programmes including VCT, STI, contraceptive services and psychosocial support in higher education institutions	80% of institutions covered	90%	95%	95%	98%	HEAIDS, Higher education institutions, DoE, DoH
	Develop and implement guidelines for educational institutions (schools and Higher education institutions) to be sites of safety, protection and care for children and young people	10%	30%	50%	70%	90%	DoE, Social Cluster, NGOs
	Increase targeted HIV prevention and SRH programmes and initiatives for out of school youth in different setting focusing on informal settlements and, rural areas, and considering the needs of street children and child headed households	20% of districts	50% of districts	70% of districts	85% of districts	100% of districts	DSD, DoH, DoSD, NGOs, DoE, Religious institutions Traditional sector
	Increase and coordinate multi-media strategies aimed at youth that promote communication about HIV including HIV prevention, gender and sexuality	quarterly campaigns	quarterly campaigns	quarterly campaigns	quarterly campaigns	quarterly campaigns	DoH, Communication sector, Social development cluster, youth sector, traditional structures, civil society
	Increase access to youth friendly health services in the public sector.	20% of districts	50% of districts	70% of districts	85% of districts	100% of districts	DoH
2.4: Increase roll out of workplace prevention programmes (Cross reference with ILO, NEDLAC and SADC Code) for workplace based interventions	Incremental roll-out of comprehensive prevention package in workplaces, including access to IEC, VCT, provision of male and female condoms, STI management and TB screening	40% of workplaces	60%	80%	90%	100%	DPSA, NGOs, all government departments, Business NEDLAC
	Incremental roll-out of comprehensive customised HIV prevention package to higher risk occupational groups including uniformed services, mining industry, long distance transport services, agriculture industry and the hospitality industry	50% of services	60% of services	70% of services	80% of services	100% of services	DPSA, Relevant employee institutions, DoH, DoL
	Develop targeted HIV prevention programmes for domestic workers and gardeners and other employees who are hard to reach	Targeted programs developed	50% of districts covered	40%	50%	70%	DoL, NGOs DoH, DoSD, NGOs

GOAL 2: REDUCE SEXUAL TRANSMISSION OF HIV (continued)

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
2.5: Increase roll out of prevention programmes for higher risk populations	Incremental roll-out of comprehensive customised HIV prevention package in prisons, including access to VCT and access to male condoms, lubricants, STI symptom recognition and access to PEP and STI treatment	50% of services	70% of services	80% of services	90% of services	95% of services	DoH, DCS, NGOs
	Incremental roll-out of comprehensive customised HIV prevention package for MSM, lesbians and transsexuals including promotion of VCT and access to male and female condoms, and STI symptom recognition	Program developed with relevant groups	40% of groups covered	50%	60%	70%	DoH, NGOs
	Incremental roll-out of comprehensive customised prevention package for sex workers and their clients, including promotion of VCT and access to male and female condoms, STI symptom recognition	50% of organized groups covered	70%	80%	90%	95%	DoH, DSD, DoL, NGOs, NPA
2.6: Develop and integrate a package of sexual and reproductive health and HIV prevention services into all relevant health services	Integrate sexual & reproductive health services and HIV prevention guidelines and programmes into family planning, ANC, STI, TB, ARV treatment services and visa versa in the public and private sector	30% of services	40% of services	60% of services	70% of services	80% of services	DoH, private sector
	Increase access to quality STI services in the public and private sector offered by adequately trained staff utilising the updated syndromic management guidelines	40% of services	50% of services	60% of services	80% of services	90% of services	DoH, NGO, organisations representing private sector practitioners, medical aids
2.7: Develop a comprehensive package that promotes male sexual health	Identify, evaluate and roll out effective gender sensitive male intervention programmes in the workplace, and in communities, that address HIV prevention, gender issues and responsible parenting	Male sexual health program developed	20%	40%	50%	60%	DoH, NGOs, Mens sector

	Convene a multidisciplinary expert working group, including traditional leaders and private practitioners to review the WHO/UNAIDS male circumcision policy and make policy and programme recommendations	Policy recommendation from expert group adopted by the NHC and implemented	20% of districts	40%	60%	80%	DOH Traditional leaders Private Sector NGOs
2.8: Develop and integrate interventions for reducing recreational drug use in young people with HIV prevention efforts	Develop and implement policy and programmes for an integrated and comprehensive package of HIV prevention services, including access to male condoms, with responsible alcohol consumption targeted at clients in beerhalls, clubs, pubs, brothels, shabens and traditional ceremonies, including information on how to access to HIV testing and treatment of STIs	Policy and program developed	40% of districts covered	60% of	80% of	90% of	DOH, NGOs, DSD, DTI, Mens sector, the alcohol industry, traditional leaders
	Integrate HIV prevention messages into existing campaigns to promote responsible alcohol consumption	HIV prevention messages mainstreamed into relevant campaigns	Quarterly campaigns	Quarterly campaigns	Quarterly campaigns	Quarterly campaigns	DOH, social cluster, communication sector, civil society, private sector DOH, private sector
	Support the introduction of policies and programmes aimed at reducing recreational drug use among young people and ensure that HIV prevention messages are integrated into these programmes	Develop & start implementation	Ongoing	Ongoing	Ongoing	Ongoing	DDOH, Social cluster, Academic institutions, civil society, private sector
	Establish public sector drug rehabilitation programmes in all provinces	20 facilities	40 facilities	60 facilities	60 facilities	100 facilities	DSD, DoH, NPA, DoJ, DCS, NGO, Social cluster, Private sector
2.9: Increase the accessibility and availability of comprehensive sexual assault care including PEP and psychosocial support	Increase the proportion of facilities offering the comprehensive package of sexual assault care in accordance with the National Policy on Sexual Assault Care of NDOH	40%	60%	80%	90%	95%	DoH, DoJ, NPA, DSD, DCS

GOAL 2: REDUCE SEXUAL TRANSMISSION OF HIV (continued)

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
	Increase the proportion of facilities providing post-sexual assault care that offer PEP to all survivors testing HIV negative	30%	50%	60%	70%	90%	DOH
	Evaluate, improve and roll out training programmes on the management of gender violence and rape for the police	Training program updated	30% of police force trained	40%	50%	60%	DSD, NPA, DOJ, DCS
	Increase the number of districts with accessible social and mental health services to support child and adult victims of gender-based violence	20% of districts covered	40%	60%	80%	90%	DoSD, DoH, NGOs
2.10: Scale up prevention programmes for HIV-positive people.	Develop and implement programmes that support voluntary disclosure of HIV positive status	Program and policy for voluntary disclosure developed	40% of support groups covered	60% of	80% of	90% of	DOH, DSD, PWA sector, Civil society structures, Private sector
	Develop and implement HIV prevention programmes and interventions to reduce HIV transmission and acquisition by HIV-positive persons	Develop & start implementation	20% of known HIV persons covered	40%	60%	80%	DOH, DSD, PWA sector, Civil society structures, Private sector
	Integrate safer sex practices, male and female condoms, STI management, into all ARV treatment programmes including palliative and home based care	40%	60%	80%	90%	90%	DOH, PWA sector, Civil society structures, Private sector
	Enhance and support integrated positive prevention and care services provided by NGOs, CBOs and community support groups	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	DOH, PWA sector, Civil society structures, Private sector

GOAL 3: REDUCE MOTHER-TO-CHILD TRANSMISSION OF HIV

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
3.1: Broaden existing mother to child transmission services to include other related services and target groups	Implement programmes to reduce the percentage of all unwanted pregnancies through scaling up contraceptive services in public sector facilities, increasing access to TOP services in public sector facilities and develop policy on medical abortion	20% of increase	40%	60%	80%	90%	DOH
	Expand PMTCT guidelines to include fertility guidelines for HIV infected women, men and discordant couples aimed at supporting informed pregnancy choices	Develop & implement guidelines	Annual	Annual	Annual	Annual	DOH, Professional organisations
	Implement HIV prevention programmes for uninfected pregnant women	20% increase in public sector ANC services	40%	60%	80%	90%	DOH, NGOs
	Implement responsible fatherhood programmes in health districts and in the community	Evaluate & develop programme	Introduce into 20% health districts	40%	60%	80%	DOH, NGOs, DoL, DSD
	Expand PMTCT guidelines to cover postnatal services including contraception, and services for mothers and infants beyond six weeks	Develop & implement guidelines	Annual	Annual	Annual	Annual	DOH, Professional organisations
3.2: Scale up coverage and improve quality of PMTCT to reduce MTCT to less than 5%	Increase the proportion of public sector antenatal services providing PMTCT	85%	95%	100%	100%	100%	DOH
	Increase proportion of pregnant women tested through implementation of provider-initiated VCT for all pregnant women	70%	85%	90%	95%	95%	DOH
	Develop a policy and guidelines on VCT in pregnancy including consideration of provider initiated testing, and frequency of testing	Develop & implement	Annual review	Annual review	Annual review	Annual review	DOH, NGOs, DoE
	Increase the proportion of the estimated population of HIV-infected pregnant women in need who receive PMTCT services	60%	70%	80%	90%	95%	DOH

GOAL 3: REDUCE MOTHER-TO-CHILD TRANSMISSION OF HIV (continued)

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
	Increase the proportion of facilities that meet quality standards for infant feeding counselling	60%	75%	85%	90%	95%	DOH
	Implement community based strategies to support HIV positive women during and after pregnancy	10% (sub-districts)	30%	50%	70%	80%	DOH, DoSD, NGOs
	Undertake CD4 testing of all positive pregnant women and prioritise those with CD4 counts <200 for accelerated access to ARV treatment	Start implementation at all tertiary facilities per province	20% of primary care facilities	40% of primary care facilities	60% of primary care facilities	80% of primary care facilities	DOH
	Provide nutritional support to HIV-infected women choosing to exclusively breast feed	Develop policy and program	20% of woman covered	40%	60%	80%	DOH, DoSD, NGOs
	Provide formula milk to children of HIV-positive women choosing and are eligible to practice replacement feeding	50%	45%	45%	42%	40%	DOH

GOAL 4: MINIMISE THE RISK OF HIV TRANSMISSION THROUGH BLOOD AND BLOOD PRODUCTS

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
4.1: Minimise the risk of HIV transmission from occupational exposure among health care providers in the formal, informal and traditional settings through the use of infection control procedures	Continuously update guidelines for infection control procedures	Annual	Annual	Annual	Annual	Annual	DOH, Professional organisations
	Enforce the implementation of infection control in all formal health care facilities	80%	100%	100%	100%	100%	DoH
	Promote the implementation of infection control in home based care and palliative care settings	Develop and disseminate promotional and educational materials	Annual	Annual	Annual	Annual	DoH, NGOs,
	Provide training for all HCWs, including home based care workers, on infection control	70%	80%	90%	100%	100%	DoH, private health care sector
	Ensure continuous supplies of PEP drugs in public and private sector facilities as well as in community-based settings	80%	90%	100%	100%	100%	DoH, private health care sector
	Ensure all formal health care facilities maintain a register of occupational exposure	80%	85%	90%	95%	95%	DoH, private health care sector
4.2: Minimise exposure to infected blood through procedures associated with traditional and complementary practices	Continuously update Guidelines for infection control for traditional and complementary practitioners	Annual	Annual	Annual	Annual	Annual	DOH, Professional organisations
	Provide adequate training of traditional healers/practitioners on infection control	30%	50%	70%	80%	100%	DOH, Traditional practitioners organisations
	Provide information to the public raising awareness of HIV risk through unsafe traditional practices	70%	50%	60%	70%	80%	DoH, NGOs
	Provision of supplies to practise safe traditional practices	30%	50%	60%	70%	80%	DOH, Traditional practitioners organisations

GOAL 4: MINIMISE THE RISK OF HIV TRANSMISSION THROUGH BLOOD AND BLOOD PRODUCTS (continued)

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
4.3: Investigate the extent of HIV risk from Intra-venous Drug Use (IDUs) and develop policy to minimise risk of HIV transmission through injecting drug use and unsafe sexual practices	Continuously research and monitor the extent of IDU use and the relationship with HIV infection	Annual	Annual	Annual	Annual	Annual	DOH, Professional organisations, DSD
	Develop policy and guidelines for HIV prevention in IDUs and review annually	Policy developed and introduced	Annual review	Annual review	Annual review	Annual review	DoSD, DoH, DoSS, NGOs
4.4: Ensure safe supplies of blood and blood products (HIV screening tests for measuring both virus and antibodies)	Establish public sector drug rehabilitation programs in all provinces	1 per province	3 per province	Adequate provision according to provincial need	Adequate provision according to provincial need	Adequate provision according to provincial need	DoSD, DoH, NGOs
	Continuously update guidelines for ensuring safe blood and blood supplies	Annual	Annual	Annual	Annual	Annual	DoH, NBTS
	Screening of all blood supplies with best available technology including viral detection	100%	100%	100%	100%	100%	DoH, NBTS
	Promote awareness of risk of HIV transmission in donors and recipients	100%	100%	100%	100%	100%	DoH, NBTS
	Develop and implement a research programme to understand HIV transmission dynamics in blood donor populations	Establish resources and a research programme	Implement	Implement	Implement	Implement	DoH, NBTS

PRIORITY AREA 2: Treatment, Care and Support

GOAL 5: INCREASE COVERAGE OF VOLUNTARY COUNSELLING AND TESTING AND PROMOTE REGULAR HIV TESTING

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
5.1: Increase access to VCT services that recognise diversity of needs	Implement provider-initiated VCT in all health facilities, with a special focus on STI, TB, antenatal, IMCI, family planning and general curative services	60% of all health facilities in country (public, private, NGO)	75% of all health facilities in country (public, private, NGO)	90% of all health facilities in country (public, private, NGO)	95% of all health facilities in country (public, private, NGO)	95% of all health facilities in country (public, private, NGO)	DOH, private sector, NGOs, youth sector
	Increase access to VCT through workplaces and trade unions	30%	40%	50%	55%	60%	SANAC, Business and labour sectors
5.2: Increase uptake of VCT	Investigate community based VCT strategies (outside of health facilities) for special and unmet needs	Identify successful community VCT strategies	Pilot strategies in at least 10 additional sub-districts	Expand successful strategies to cover 20% of districts	Expand successful strategies to cover 50% of districts	Expand successful strategies to cover 70% of districts	DOH, CBOs, NGOs, FBOs, Traditional healers, youth sector
	Increase the number of adults who have ever had an HIV test, with a focus on men	25%	35%	50%	60%	70%	DOH, private sector, youth sector & all other sectors
	Increase the proportion of adults tested in the last 12 months	7%	11%	18%	22%	25%	
	Increase the proportion of newly diagnosed HIV-positive adults accessing wellness services	50%	60%	70%	75%	80%	

GOAL 6: ENABLE PEOPLE LIVING WITH HIV AND AIDS TO LEAD HEALTHY AND PRODUCTIVE LIVES

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
6.1: Scale up coverage of the comprehensive care and treatment package	Review and update clinical and programmatic guidelines for the management of HIV and AIDS	Annually	Annually	Annually	Annually	Annually	DOH, DSD, private sector
	Improve enrolment in and quality of positive living interventions through wellness programmes	30% eligible clients enrolled in wellness programmes	40%	50%	60%	75%	DOH, Private Sector, NGOs, CBOs, FBOs, Traditional Healers, Communities, Media, Sports and Recreation, All Sectors,
	Increase the proportion of HIV-positive adults not on ART who had a CD4 count within the last 12 months	30% positive adults	45%	60%	70%	80%	
	Increase the proportion of eligible adults receiving cotrimoxazole	20%	30%	50%	70%	80%	
	Implement integrated contraceptive, cervical screening and fertility services for women	30%	50%	75%	90%	100%	
	Provide food support to eligible households	400 000	450 000	500 000	600 000	700 000	
	Provide psychosocial support including counselling for bereavement, disclosure and adherence	10% of sub-districts	20% of sub-districts	60% of sub-districts	80% of sub-districts	100 % of sub-districts	
	Develop and implement community based ART promotion and literacy programmes	50% of sub-districts	60%	70%	80%	90%	
	Increase the number of new adults starting ART	120,000 (24% new AIDS cases)	180,000 (35%)	285,000 (55%)	370,000 (70%)	420,000 (80%)	
	Increase the proportion of adults started on ART based outside hospital setting	30%	40%	50%	60%	70%	
	Increase the proportion of adults started on ART by nurses	10%	20%	50%	65%	80%	
	Increase proportion of adults on ART managed by nurses	20%	30%	50%	70%	80%	

6.2: Increase retention of children and adults on ART	Increase the proportion of people who are still on ART after completing one year of treatment	85%	85%	85%	85%	85%	DOH, private sector, communities, NGOs, All sectors
	Maintain the percentage of people on ART with viral loads <400 copies/ml after completing one year of treatment	80%	80%	80%	80%	80%	
	Actively trace people on ART who are more than a month late for a clinic/pharmacy appointment	80% of defaulters	70% of defaulters	80% of defaulters	85% of defaulters	85% of defaulters	
	Implement facility and community based adherence support strategies and programmes	100% sub-districts	100% sub-districts	100% sub-districts	100% sub-districts	100% sub-districts	
	Increase the proportion of children receiving cotrimoxazole and a CD4% test at time of diagnosis	30% of facilities	40% of facilities	60% of facilities	80% of facilities	90% of facilities	
6.3: Ensure effective management of TB / HIV co-infection	Ensure implementation of National TB Control Plan	Annual	Annual	Annual	Annual	Annual	DOH; NHLS, communities, private sector, NGOs; CBOs
	Screen children and adult TB patients for HIV and HIV positive adults for TB	40%	60%	80%	90%	90%	
	Improve CD4 monitoring of TB/HIV co-infected children and adults	25%	60%	75%	90%	100%	
	Increase percentage of TB/HIV co-infected adults receiving cotrimoxazole	20%	25%	40%	65%	80%	
	Review guidelines for and implementation of INH prophylaxis for adults and children	Review guidelines	Implement guidelines	Implement guidelines	Implement guidelines	Implement guidelines	
6.4: Improve quality of life for people with HIV and AIDS requiring terminal care	Provide a comprehensive package of a palliative care to eligible children and adults	200,000 adults and 20,000 children	250,000 adults and 26,000 children	250,000 adults and 25,000 children	250,000 adults and 20,000 children	225,000 adults and 20,000 children	DOH; DSD; private sector; communities NGOs; CBOs.

GOAL 6: ENABLE PEOPLE LIVING WITH HIV AND AIDS TO LEAD HEALTHY AND PRODUCTIVE LIVES (continued)

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
6.5: Strengthen the health system and remove barriers to access	Increase the proportion of health facilities providing comprehensive HIV care including ART	10%	25%	50%	70%	80%	DOH; other departments; private sector; NGOs; CBOs
	Build the capacity of health workers and managers to provide comprehensive care, treatment and support	45% of PHC staff	55%	70%	80%	90%	DOH, private sector, NGOs
	Expand the human resource pool through increased production, retention strategies and partnerships with private providers	All provinces have a policy in place	Implementation of district pilots in all provinces	60% districts implement	80% districts implement	80% of districts implement	DOH, private sector, traditional healers, DPSS, DSD, SETA, OPW, JIPSA
	Strengthen support, mentoring and supervision of health care providers	All districts have plans	All districts have plans	All districts have plans	All districts have plans	All districts have plans	DOH, NGOs, private sector
	Implement policy on occupational exposure to TB in health workers	Develop and finalise policy	Implement policy in 50% of facilities	Implement policy in 50% of facilities	Implement policy in 50% of facilities	Implement policy in 50% of facilities	DOH, DSD, OPW, JIPSA SETA
	Develop career pathways for counsellors as mid-level workers according to the National Qualifications Framework	Draft Policy developed	Final Policy ratified and approved	20% of counsellors receive accredited training	50% of counsellors receive accredited training	80% of counsellors receive accredited training	
	Streamline drug procurement and supply management to decrease the number of facilities experiencing drug stock-outs	<5%	<2%	0%	0%	0%	DOH, private sector, NGOs
	Decrease the proportion of facilities reporting long turn around times for essential laboratory tests	15% facilities ALT, CD4, TB microscopy >1 week	10% facilities ALT, CD4, TB microscopy >1 week	5% facilities ALT, CD4, TB microscopy >1 week	5% facilities ALT, CD4, TB microscopy >1 week	5% facilities ALT, CD4, TB microscopy >1 week	DOH, NHLS, private sector

GOAL 7: ADDRESS THE SPECIAL NEEDS OF PREGNANT WOMEN AND CHILDREN

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
7.1: Decrease HIV and AIDS-related maternal mortality through women-specific programmes	Implement community-based strategies to support HIV positive women during and after pregnancy	10% of sub-districts	30%	50%	70%	80%	DOH, private sector, DSD, NHLS, DLPG, communities, NGOs
	Provide food support to HIV positive women choosing to exclusively breast feed	15%	20%	40%	60%	80%	
	Increase the proportion of HIV-positive pregnant women receiving a CD4 count at time of positive diagnosis	50%	80%	95%	95%	95%	
	Increase the number of HIV positive pregnant women starting a comprehensive package of AIDS care including ART	25,000	35,000	55,000	80,000	90,000	
7.2: Determine the HIV status of infants, children and adolescents as early as possible	Implement provider-initiated testing of children of HIV-positive adults accessing services	30% of facilities	50% of facilities	80% of facilities	90% of facilities	95% of facilities	DOH, private sector, NHLS, NGOs,
	Increase the proportion of facilities with immunisation services offering HIV DNA PCR tests for early infant diagnosis	40%	60%	65%	95%	100%	
	Increase the proportion of exposed children tested with PCR by six months	45%	65%	65%	90%	90%	
	Increase the proportion of symptomatic children attending PHC and hospital facilities tested for HIV	50%	65%	80%	90%	90%	
	Increase the proportion of children receiving cotrimoxazole and a CD4% test at time of diagnosis	35%	45%	60%	80%	90%	

GOAL 7: ADDRESS THE SPECIAL NEEDS OF PREGNANT WOMEN AND CHILDREN (continued)

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
7.3: Provide a comprehensive package of services that includes wellness care and ART to HIV-affected, -infected and -exposed children and adolescents	Review clinical guidelines for the management of infants, children and adolescents with HIV and AIDS	Annually	Annually	Annually	Annually	Annually	DOH, DSD, Private Sector
	Increase the proportion of children with development delays identified and referred for appropriate management	60%	70%	80%	90%	90%	
	Implement biannual developmental screening for all children <5 years	6% children screened	12%	25%	40%	60%	
	Provide food support to eligible children	30 000	45 000	65 000	100 000	150 000	
	Increase the proportion of HIV positive children not on ART who had a CD4 count according to guidelines	30% positive children	45%	60%	70%	80%	
	Increase the proportion of HIV positive and exposed children receiving cotrimoxazole	65%	75%	90%	95%	100%	
	Increase the number of new children starting ART	17 000	24 000	33 000	38 000	40 000	
	Increase the proportion of children starting ART in non-hospital based settings	20%	25%	40%	55%	60%	
	Increase the proportion of children started on ART by nurses in facilities with adequate quality assurance	5%	10%	20%	30%	35%	
	Increase the proportion of stable children on ART managed by nurses	10%	20%	40%	50%	70%	
	Increase the proportion of adolescent friendly ART facilities equipped to provide comprehensive care, treatment and support for HIV-positive adolescents	5%	10%	20%	35%	50%	
	Provide psychosocial support for children and adolescents including counselling for bereavement, disclosure, adherence and sexual aspirations	10% of sub-districts	20% of sub-districts	60% of sub-districts	80% of sub-districts	100% of sub-districts	DOH, DSD, DPLG

GOAL 8: MITIGATE THE IMPACT OF HIV AND AIDS AND CREATE AN ENABLING SOCIAL ENVIRONMENT FOR CARE, TREATMENT AND SUPPORT

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
A.1: Strengthen the implementation of OVC policy and programmes	Monitor implementation of the National Action Plan for OVCs (2006-2008)	Annual	Annual Report	Annual	Annual	Annual	DSD, SANAC, DOH, NGOs
	Develop and operationalise mechanisms to identify, track and link OVC and child-headed households to grants, benefits and social services at local level	10%	30%	70%	90%	100%	DSD, DOE, DPLG, communities, NGOs, CBOs
	Increase the number of sub-districts that have OVC response mechanisms (such as CCFs) facilitating access to essential services	30% sub-district	50%	75%	90%	100%	DSD, DHA, DOE communities, NGOs, CBOs
	Increase the proportion of vulnerable children accessing social grants (child support, foster care and care dependency), benefits and services	CSG 80%	85%	90%	95%	98%	
		FCG 25%	30%	40%	50%	60%	
		CDG 20,000	30,000	36,000	44,000	50,000	
	Implement service delivery guidelines defining core services at local level for OVC (exemption from school and health service fees, child support grants, birth registration)	20% of districts	40% of districts	60% of districts	80% of districts	100% of districts	DSD, DOE, NGOs
	Increase the proportion of children obtaining vital documents such as birth and death registration	70%	80%	90%	95%	99%	DSD, DHA, NGOs, communities
Increase the proportion of registered civil society organizations receiving organisational programme support and mentoring	20%	30%	40%	45%	50%	DSD, NGOs, communities, Private sector	

GOAL 8: MITIGATE THE IMPACT OF HIV AND AIDS AND CREATE AN ENABLING SOCIAL ENVIRONMENT FOR CARE, TREATMENT AND SUPPORT (continued)

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
	Increase the proportion of child-headed households receiving services of a community caregiver	50%	60%	70%	90%	95%	DSD, NGOs, communities
	Develop the capacity of schools, educators and early childhood development centres to provide psychosocial, educational and adherence support to children in need	15% of schools and centres	30% of schools	50% of schools	60% of schools	80% of schools	DOE, DSD, DPLG
8.2: Expand and implement CHBC as part of the EPWP	Recruit and train new community care givers (including CHWs), with emphasis on men	10 000 (10% men)	15 000 (10% men)	20 000 (15% men)	25 000 (20% men)	25 000 (20% men)	DSD, DPLG, DOH, DOPW, NGOs
	All community caregivers to receive nationally determined stipends	23 394	30 000	45 000	60 000	75 000	DSD, DOH, DPSA, SETA, DPW
	Develop standards and career pathways for community care givers as mid-level workers according to the National Qualifications Framework	Draft policy developed	20% community caregivers receive accredited training	40% community caregivers receive accredited training	60% community caregivers receive accredited training	80% community caregivers receive accredited training	
	Strengthen support, mentoring and supervision of community caregivers	All districts have plans	All districts have plans	All districts have plans	All districts have plans	All districts have plans	
8.3: Strengthen the implementation of policies and services for marginalised communities affected by HIV and AIDS	Increase proportion of older persons receiving support through HCBC,	50%	60%	70%	80%	90%	DSD, NGOs, communities, Council for the Care of the Aged
	Increase proportion of people with disabilities in care, treatment and support programmes	10%	30%	40%	60%	75%	Disability sector, all sectors
	Develop and implement targeted care and support programmes and material for people with disabilities	10% districts	40% districts	70% districts	90% districts	90% districts	DSD, Disability sector, All sectors
	Promote integration and equitable representation of LGBT people in care, treatment and support programmes	100% districts	100% districts	100% districts	100% districts	100% districts	DSD, LGBT sector, all sectors
8.4: Ensure community AIDS competence in order to facilitate utilization of good quality services	Design and implement ward-based community competency programmes targeting the most vulnerable communities	Community competency programmes developed and piloted in 9 provinces	30% ward-based vulnerable communities covered	50%	60%	70%	DOH, DPLG, SALGA, DSD, Local authorities, Private sector, CBOs

PRIORITY AREA 3: PREVENTION: Research, monitoring and surveillance

GOAL 9: DEVELOP AND IMPLEMENT A MONITORING AND EVALUATION FRAMEWORK FOR APPROPRIATE INDICATORS

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
9.1: Establish and implement a functional M&E system	Develop a functional M&E framework that reports against indicators and which includes an M&E plan for each SANAC sector	M&E framework finalized and adopted - June 2007	Report produced	Report produced	Report produced	Report produced	SANAC M&E Unit, DoH, Government Departments and Research Institutions, Private sector and civil society
	Timely produce and submit the 2008 Country UNGASS Report	Draft 2008 UNGASS report compiled by November 2007	Final UNGASS report	Draft 2010 UNGASS report compiled by November 2009	Final UNGASS report	Draft 2012 UNGASS report compiled by November 2009	DoH, All Government Departments, Civil Societies
	Strengthen the health information system in the provincial departments, the national department and the private sector focusing on data quality and data flow.	Assessment of existing M&E systems completed	Annual Data quality assessment completed	Annual Data quality assessment completed	Annual Data quality assessment completed	Annual Data quality assessment completed	DoH
	Improve capacity, to manage data by all sectors	Annual Data quality assessment completed Review capacity needs and develop and implementation plan	Improved capacity to manage data in 20% of sectors	Improved capacity to manage data 40% of sectors	Improved capacity to manage data 70% of sectors	Improved capacity to manage data in all sectors	SANAC M&E Unit Government Departments and Research Institutions, Private sector and civil society
	Develop baseline data on indicators	First set of baseline data available - November 2007	End of year 2007 report on indicators;				SANAC M&E Unit Government Departments and Research Institutions, Private sector and civil society

GOAL 9: DEVELOP AND IMPLEMENT A MONITORING AND EVALUATION FRAMEWORK FOR APPROPRIATE INDICATORS (continued)

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
			Finalised baseline indicators - March 2008				SANAC M&E Unit, Government Departments and Research Institutions, Private sector and civil society
	Using M&E data to identify the barriers to the implementation of the NSP and develop strategies to address these.	Identify areas of weakness in the implementation of the NSP and develop interventions to address these	Ongoing	Ongoing	Ongoing	Ongoing	SANAC M&E Unit, Government Departments, Private sector and civil society

GOAL 10: SUPPORT RESEARCH IN THE DEVELOPMENT OF NEW PREVENTION TECHNOLOGIES

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
10.1: Develop and support a research agenda on HIV prevention technologies	Support and monitor research to develop and implement HIV prevention technologies including microbicides, AIDS vaccine, male circumcision, Pre-exposure prophylaxis and other new biomedical technologies	Annual report on status of research on HIV prevention technologies	Annual report on status of the development and research on HIV prevention technologies	Annual report on status of the development and research on HIV prevention technologies	Annual report on status of the development and research on HIV prevention technologies	Annual report on status of the development and research on HIV prevention technologies	SANAC M&E Unit, Government Departments, Research Institutions,

GOAL 11: CREATE AN ENABLING ENVIRONMENT FOR RESEARCH IN SUPPORT OF THE NSP

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
11.1 Facilitate development in the research area	Strengthen the system for the ethical and regulatory review of research to ensure quality timeous review and follow up of clinical studies	Review the effectiveness of the structures legally mandated to monitor and approve research proposals (MCC, Ethics Committees) Develop plans to strengthen these structures	50% Research submissions approved in < 3 months	60% Research submissions approved in < 3 months	80% Research submissions approved in < 3 months	90% Research submissions approved in < 3 months	DoH, Government Departments, MCC, National Health research Committee, National Health Research Ethics Council,
	Support provincial departments to identify priority research areas and strengthen their ability to commission, support and utilize relevant research findings	Priority research questions identified and appropriate arrangements made for research to be undertaken	5 priority research issues per province identified and commissioned or as appropriate Ongoing research and feedback	5 priority research issues per province identified and commissioned or as appropriate Ongoing research and feedback	5 priority research issues per province identified and commissioned or as appropriate Ongoing research and feedback	5 priority research issues per province identified and commissioned or as appropriate Ongoing research and feedback	DoH, Government Departments, Research Institutions, Private sector and civil society

GOAL 11: CREATE AN ENABLING ENVIRONMENT FOR RESEARCH IN SUPPORT OF THE NSP (continued)

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
	Promote collaboration between researchers and communities	Encourage the formation of community advisory groups to support relevant population based studies	Ongoing	Ongoing	Ongoing	Ongoing	SANAC, DoH, HEIs, Research Institutions, Private sector and civil sector
	Promote collaboration between researchers, and Government to discuss and implement an agreed research agenda	Official senior government committee established as a forum for discussion about current HIV research priorities and results	Annual meetings	Annual meetings	Annual meetings	Annual meetings	SANAC, DoH, HEIs, Research Institutions, Private sector and civil sector

GOAL 12: DEVELOPMENT AND PROMOTION OF RESEARCH ON BEHAVIOUR CHANGE

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
12.1: Support the evaluation of existing interventions and the development of new innovative programmes or interventions aimed at behaviour change for HIV prevention	Develop and evaluate behavioural interventions focusing on young women, men youth and higher risk groups. Conduct randomised control trials evaluated by biological markers and behaviour change indicators to test the efficacy of behaviour change interventions. Develop and evaluate targeted behavioural interventions aimed at HIV prevention for HIV positive individual	DoH identifies significant research funds and efficient mechanisms for allocating funds for priority research questions	Open call for proposal and commissioning	5 studies commissioned or as appropriate, Ongoing feedback	5 studies commissioned or as appropriate, Ongoing feedback	New studies commissioned as required. Ongoing feedback	SANAC M&E Unit, Government Departments, Research Institutions, Private sector and civil society

GOAL 13: DEVELOP AND SUPPORT A COMPREHENSIVE RESEARCH AGENDA: including operations research, behavioural research, epidemiological trials and other research for new technologies for prevention and care

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
13.1: Support research on the efficacy of orthodox medicines for HIV treatment and OI prophylaxis	Support selected clinical trials for products with real potential of efficacy	Research review and agreement on research agenda	Open call for proposal and commissioning	10 studies commissioned or as appropriate	10 studies commissioned or as appropriate	Results of all commissioned studies produced	SANAC M&E Unit, Government Departments, HEIs and Research Institutions, Private sector and civil society
13.2: Support research on the efficacy of traditional and complementary medicines for HIV treatment and OI prophylaxis	Support selected clinical trials for products with real potential of efficacy	Research review and agreement on research agenda	Open call for proposal and commissioning	10 studies commissioned or as appropriate	10 studies commissioned or as appropriate	Results of all commissioned studies produced	SANAC M&E Unit Government Departments, HEIs and Research Institutions, Private sector and civil society, traditional healers
13.3: Support research on nutritional interventions for those infected or at risk of HIV infection	Conduct a national consultative workshop on the nutrition and HIV consensus document produced by the SA Academy of Science and adopt a research agenda	Workshop conducted and research agenda identified and commissioned	Research commissioned and 5 studies commenced	5 studies commenced, Ongoing feedback.	5 studies commenced, Ongoing feedback.	as required commenced, Ongoing feedback.	SANAC M&E Unit Government Departments, Research Institutions, Private sector and civil society, traditional healers
13.4: Conduct operations research in support of the implementation of the NSP	Identify relevant operations research questions on the implementation of NSP and provide support to research proposals	Research review and agreement on research agenda	5 studies commissioned or as appropriate, Ongoing feedback	5 studies commissioned or as appropriate, Ongoing feedback	5 studies commissioned or as appropriate, Ongoing feedback	new studies commissioned as appropriate Ongoing feedback	SANAC M&E Unit Government Departments, Research Institutions, Private sector and civil
13.5: Support research to develop best practice models for community care and support	Conduct research on different models of community care and support	Call for proposals advertised and commissioning	5 studies commissioned or as appropriate	5 studies commissioned or as appropriate	5 studies commissioned or as appropriate	Commission research as required ongoing feedback	SANAC M&E Unit Government Departments, Research Institutions, Private sector and civil society

GOAL 13: DEVELOP AND SUPPORT A COMPREHENSIVE RESEARCH AGENDA: including operations research, behavioural research, epidemiological trials and other research for new technologies for prevention and care (continued)

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
13.6: Conduct research on human resource requirements for the effective implementation of the NSP	Develop a research agenda to assess human resource needs for the provision of community based care Support research on direct impact of HIV on health care workers in the public health sector Ongoing research to evaluate HR requirements and training requirements within the public sector to respond to HIV	Call for proposals advertised and commissioning	5 studies commissioned or as appropriate	5 studies commissioned or as appropriate	5 studies commissioned as appropriate	Commission research or as required, Ongoing feedback.	SANAC M&E Unit Government Departments, Research Institutions, Private sector and civil
13.7: Monitoring funding for the NSP and its cost effectiveness	Support research on the cost effectiveness of different aspects of the NSP	3 studies commissioned or as appropriate Baseline detailed costing study completed	3 studies commissioned or as appropriate	3 studies commissioned or as appropriate	3 studies commissioned or as appropriate	Commission research or as required, Ongoing feedback	SANAC M&E unit Government Departments, Research Institutions, Private sector and civil
13.8: Enhance efforts to develop post-graduate research skills by tertiary institutions	Recruit, train and mentor black researchers and women in particular	Budgets developed and contracts offered to HEIs	10 PhDs students recruited	10 PhDs students recruited		10 PhDs graduated	SANAC M&E Unit Government Departments, Higher Education Institutions, Research Institutions, Private sector
13.9: Support capacity building in research, surveillance and monitoring among black and women professionals such that the appropriate demographics are achieved	Create career paths within research organisations and HEIs institutions to retain and support particularly women and black researchers, and identify new funding mechanisms to achieve this	Funds identified, Appropriate senior researcher positions created in research and HEIs	Appropriate senior researcher positions created	Appropriate senior researcher positions created	Appropriate senior researcher positions created	Appropriate senior researcher positions created	SANAC M&E Unit Government Departments, Higher Education Institutions, Research Institutions, Private sector

GOAL 14: CONDUCT POLICY RESEARCH

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
14.1: Ensure that policy is evidence informed and regularly updated	Government to convene appropriate multisectoral groups including policy makers and researchers to facilitate policy and guideline research reviews in order to base policy on current scientific developments		Periodic policy reviews: after every 3 years and as necessary,			Periodic policy reviews: after every 3 years and as necessary	SANAC M&E Unit Government Departments, Research Institutions, Private sector and civil society

GOAL 15: CONDUCT REGULAR SURVEILLANCE

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
15.1: Coordinate and strengthen surveillance systems on HIV, AIDS and STIs	Build mechanisms to coordinate HIV, AIDS, & STIs surveillance systems	Different surveillance systems in existence and required identified by DoH and commissioned where required	Integrated surveillance systems for HIV, AIDS and STIs established	Report produced	Report produced	Report produced	SANAC M&E Unit Government Departments, Research Institutions, Private sector and civil society
	Conduct surveillance of HIV prevalence and AIDS morbidity and mortality	National mortality surveillance National prevalence surveillance implemented in all provinces	National Burden of Disease report	Natural mortality surveillance District level HIV prevalence monitoring Implemented in all provinces		Natural mortality surveillance	SANAC M&E Unit, DOH Government Departments, Research Institutions, Private sector and civil society
	Conduct surveillance of HIV incidence and utilise best international methodology to obtain this data	DoH to convene a national consultation on measurement of HIV incidence and HIV-related mortality, and to commission research	Progress report on incidence methodology testing		Estimated incidence figures		DOH, Government Departments, Research Institutions, Private sector and civil society
	Participation in international fora on the estimation of HIV incidence		Estimated incidence figures				
	Conduct HIV and sexual, behavioural sentinel surveys, with different target age-groups	Commission National Youth HIV and sexual behavioural surveys. Commission National population based HIV and sexual behavioural surveys	Youth risk behavioural surveys conducted 2008 SADS conducted Behavioural Surveillance Survey for all age-groups			Youth risk behavioural survey conducted Behavioural Surveillance Survey for all age-groups	SANAC M&E Unit, Government Departments, Research Institutions, Private sector and civil society

GOAL 15: CONDUCT REGULAR SURVEILLANCE (continued)

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
	Conduct surveillance of national HIV/TB infections in selected populations.	Annual report produced	Annual report produced	Annual report produced	Annual report produced	Annual report	DOH, Government Departments, Research Institutions, Private sector and civil society
	Conduct surveillance on drug and ARV resistance	Active surveillance instituted in ARV rollout sites in public facilities identified	Ongoing	Ongoing	Ongoing	Ongoing	DOH, Government Departments, Research Institutions, NHLS Private sector and civil society
	Strengthen the active surveillance, reporting and analysis of Adverse Drug Reaction (ADR) in the accredited facilities providing ART and include private sector facilities	Active surveillance instituted in public and private facilities identified	ADR report produced		ADR report produced		DOH, Government Departments, Research Institutions, MCC Private sector and civil society
	Conduct routine clinical and microbiological STI surveillance	Annual reports produced	Annual reports produced	Annual reports produced	Annual reports produced	Annual report produced	DOH, Government Departments, Research Institutions, NHLS Private sector and civil society

PRIORITY AREA 4: Human rights and access to justice

GOAL 16: ENSURE PUBLIC KNOWLEDGE OF AND ADHERENCE TO THE LEGAL AND POLICY PROVISIONS

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
16.1: Ensure adherence to existing legislation and policy relating to HIV and AIDS, particularly in employment and education	Conduct a national analysis of the implementation of AIDS programmes in workplaces	Report produced					DOL NEDLAC DOH DPSA Employment Equity Commission SANAC Business sector, trade union sector
	Finalise and implement a national agreement on a framework for HIV and AIDS policy and programmes in the workplace. Implement the agreement in all workplaces	Agreement finalised	60%	70%	80%	90%	
	Update the DOL/Employment Equity Commission Code of Good Practice on Key Aspects of HIV and AIDS and Employment (2000)	Code Updated			Review & update Code		
	Assist SMMEs to develop and implement workplace policies.	10%	30%	50%	70%	80%	DOL, Business sector
	Develop and implement tools to and monitor, protect and enforce the rights of: • Casual, contract and/or poorly organised employees (such as domestic workers). • Employees expressly excluded from the ambit of labour legislation.	Tools developed	30% of industry covered	40%	50%	60%	DOL SAHRC Trade Union sector
	Develop and distribute a national guideline of rights of children in schools to access to information, prevention, treatment, care and support.	Guidelines developed and approved	50% of schools	60%	70%	80%	DOE DSD SANAC Education sector
	Develop and distribute a national guideline on children and HIV in pre-primary schools	Guidelines developed and approved	70% of pre-primary schools	80%	85%	90%	

GOAL 16: ENSURE PUBLIC KNOWLEDGE OF AND ADHERENCE TO THE LEGAL AND POLICY PROVISIONS (continued)

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
16.2: Ensure adherence to human rights by service providers	Develop and distribute guidelines for health workers on human rights and: <ul style="list-style-type: none"> • Voluntary HIV testing and counselling • Confidentiality and disclosure • Children and HIV 	Guidelines developed and approved	60%	70%	80%	90%	SANAC, Health professions sector, DOH, DOE Human rights sector
16.3: Ensure a supportive legal environment for the provision of HIV and AIDS services to marginalised groups,	Develop and distribute information materials on rights to HIV prevention, treatment and support that responds to the special needs of: <ul style="list-style-type: none"> • Sex workers • Children and adults with disabilities • Drug users • Prisoners • MSM, gay and lesbian people • Orphans and vulnerable children (including children in self-care) • Children • Refugees, undocumented migrants and immigrants • Older persons 	Materials developed and approved	40% of organised groups covered	50%	70%	80%	DOH, SAHRC SANAC sectors
16.4: Monitor and address human rights violations	Develop monitoring tools for human rights Establish systems for collecting information	Tools developed	Systems established, implemented and reported	Ongoing Annual Report	Ongoing	Ongoing	SANAC, PLHIVA & Legal and Human Rights sector
16.5: Improve affordability and accessibility of legal services for people with HIV	Implement and monitor the measures taken to protect human rights after violations	Ongoing	Annual Report				Human Rights sector and SANAC, Legal sector, SAHRC
	Monitor the insurance and financial services industries and their regulators to end unfair exclusions of PLHIV	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Statutory bodies: HPCSA, CMA, NEDLAC
	Develop a database and create a network of legal service providers that assist people with HIV and AIDS	Database on providers developed and updated	10%	20%	50%	70%	Human Rights sector, SANAC, Law sector
	Train community-based development workers to identify and address HIV and AIDS human rights issues	Programme developed	20% Districts covered	50%	80%	90%	DOH, Human Rights sector
	Train the legal profession, including the judiciary, on the human rights and HIV and AIDS,	Programme developed	50% Districts covered	70%	80%	90%	DOJ

GOAL 17: MOBILISE SOCIETY, AND BUILD LEADERSHIP OF PEOPLE LIVING WITH HIV IN ORDER TO MITIGATE AGAINST STIGMA AND DISCRIMINATION

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
17.1: Empower PLHIV to recognise and deal with human rights violations	Develop a PLHIV manual on human rights, including for children and people with disabilities	Manual developed	50% Manual distributed with training	60%	70%	80%	DOH, private sector, DSD, NHLS, DPLG, communities, NGOs
	Distribute manual through health facilities, social development offices, courts						
	Training support groups and organisations of PLHIV	10% of sub districts	20%	50%	70%	80%	DPLG Provincial AIDS Councils; SANAC Media sector
	Conduct national media campaign on rights of PLHIV; integrate rights issues and events into all media campaigns	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	
17.2: Ensure respect for the rights of PLHIV in employment, housing, education, insurance and financial services and other sectors	Launch and strengthen sectoral and community-based campaigns that promote and protect human rights	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	DOH DPLG
	Develop and implement policies and programmes in government departments and SANAC sectors that protect the rights of PLHIV	Policies & programmes developed and approved	40% SANAC sectors covered	60%	80%	90%	SANAC & Government departments
17.3: Promote greater openness and public acceptance of PLHIV	Provide detailed information on HIV and build understanding and capacity to monitor, protect and promote human rights in key sectors, including: * the religious sector * the health sector * the education sector * traditional healers and leaders * the private sector * the media * people with disabilities * the legal sector (including criminal justice, correctional services), particularly the judiciary and the police	Ongoing Programme develop	30% of each sector covered	50%	70%	80%	SANAC sectors

GOAL 18: IDENTIFY AND REMOVE LEGAL, POLICY, RELIGIOUS AND CULTURAL BARRIERS TO EFFECTIVE HIV PREVENTION, TREATMENT AND SUPPORT

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
18.1: Minimise the risk of human rights violations from cultural, religious and traditional practices	Facilitate and sustain dialogue with cultural, religious and traditional leaders to build consensus on harmful practices	10% of sub-districts	20%	50%	70%	80%	Traditional leaders; SAHRC; religious leaders; SANAC Human rights sector

GOAL 19: FOCUS ON THE HUMAN RIGHTS OF WOMEN AND CHILDREN: including people with disabilities, and mobilize society to promote gender and sexual equality and address gender-based violence

Objective	Intervention	5-year target					Lead Agency
		2007	2008	2009	2010	2011	
19.1: Reduce legal constraints to access to fund securely services for women and children	Improve access to human rights education and information for women in resource limited settings:	30% of identified nodes	50%	70%	80%	90%	DoJ, DCS & DSD
	Educate communities and vulnerable groups about rights and access to ID documents and social security	50% of districts covered	60%	70%	80%	90%	DOHA & DSD
	Ensure easy access for women and children to registration and social grants	Fasttrack programme in place	50% districts covered	70%	80%	90%	
19.2: Ensure implementation of existing laws and policies that protect women and children from gender-based violence	Ensure that the National Sexual Assault and Management Guidelines are implemented by health care workers in all districts.	40%	60%	70%	80%	90%	DOHA

19.3: Address the needs of women in abusive relationships	Distribute Guidelines on SAPS and their responsibilities in terms of the National Sexual Assault Policy	40% of facilities covered	50%	60%	70%	80%	DOJ, DCS, Human Rights sector
	Train SAPS on Guidelines	Programme developed	50% service providers covered	70%	80%	90%	
	Train VCT and adherence counsellors to identify barriers that prevent women from accessing HIV prevention, treatment and care services.	Programme developed	50% service providers covered	70%	80%	90%	
19.4: Ensure laws, policies and customs do not discriminate against women and children	Develop and implement guidelines on the impact of HIV on the Master's Office and running of deceased's estates, with focus on women and children.	Guidelines developed and distributed	60% target group covered	80%	90%	95%	DoJ&CD, traditional leaders, DHA, Parliament

(NSP, 2007)

APPENDIX B



PATIENT ADHERENCE QUESTIONNAIRE / PAMPIRI YA DIPOTSO YA GO BONA GORE A MOLWETSE O NGAPARELA THULAGANYO

INSTRUCTIONS / DITAELO

THE PURPOSE OF THIS QUESTIONNAIRE IS TO UNDERSTAND HOW YOU ARE REALLY DOING WITH YOUR MEDICATION. TO GAIN INSIGHT IN YOUR THOUGHTS AND FEELINGS REGARDING YOUR MEDICATION. DON'T WORRY ABOUT TELLING ME IF YOU DON'T ALWAYS TAKE ALL YOUR DOSES. I NEED TO KNOW WHAT REALLY HAPPENS, NOT WHAT YOU THINK I WANT TO HEAR. THINK ABOUT YOUR EXPERIENCE AND CONTINUE TO COMPLETE THE QUESTIONNAIRE.

BOIKAELELO JWA PAMPIRI ENO YA DIPOTSO KE GO BONA GORE MELEMO YA KALAFI E NTSE E GO TSHWERE JANG, GO TLHALOGANYA SENTLE GORE O AKANYA JANG LE GORE O IKUTLWA JANG KA MELEMO YA KALAFI. FA E LE GORE GA O NWE DITEKANYETSO MOLEMO TSE O DI BEETSWENG KA DINAKO TSOTLHE, O SE KA WA TSHWENYEGA KA GO MPOLELELA KA GONE. KE BATLA GO ITSE GORE TOTA GO DIREGA ENG, E SENG SE O AKANYANG GORE KE BATLA GO SE UTLWA. AKANYA KA SE SE GO DIRAGALELANG O BO O TSWELELEA PELE GO TLATSA PAMPIRI ENO YA DIPOTSO.

1. Kindly indicate your response on each question by checking off with a cross (X) one of the alternatives provided. Do not leave any questions out.

Tsweetswee bontsha karabo ya gago mo potsong nngwe le nngwe ka go tshwaya epe ya tsone e e neetsweng fano ka sefapaano (X). O se ka wa tlola potso epe.

2. There is no time limit, but you are requested to complete the questionnaire in one uninterrupted session.

Ga o a beelwa nako, mme go lebeletswe gore arabe pampiri yotlhe ya dipotso o sa ikhutse.

3. Take note that your participation in this survey remains **anonymous**. No form of identification (name, industry number etc) needs to be provided.

Ela tlhoko gore leina la gago ga le kitla le tlhaga gore o ile wa tsaya karolo mo patlisisong eno. Ga o tlhoke go re naya boitshupo bope jwa gago (leina, nomore ya intaseteri jalo le jalo).

4. There are no wrong or right answers. Only your honest opinions are required.

Ga go na dikarabo tse di phoso kgotsa tse di siameng. Re batla fela go utlwa maikutlo a gago

5. Do not reveal your answers to another person or discuss it with them.

O se ka wa dira gore motho yo mongwe a bone dikarabo tsa gago e bile o se ka wa di tlotla le ene.

6. If you are experiencing any difficulties, your healthcare provider can assist you.

Fa o na le mathata ape, motlamedi wa gago wa tlhokomelo ya pholo o tla go thusa.

QUESTIONNAIRE/PAMPIRI YA DIPOTSO

KINDLY COMPLETE THE FOLLOWING QUESTIONS BY TICKING OFF WITH A CROSS (X) IN THE APPROPRIATE BOXES:

TSWEETSWE E ARABA DIPOTSO TSE DI LATELANG KA GO TSHWAYA KA SEFAPAANO (X) MO MABOKOSING A A TSHWANETSENG:

1. How old are you? O na le dingwaga di le kae?

16 – 18 years	1
19 – 20 years	2
21 – 25 years	3
26 – 30 years	4
31 – 45 years	5
45 - + years	6

2. What gender are you? O motho wa bong bofe?

Male/Monna	1
Female/Mosadi	2

3. If you are a female, are you pregnant? Fa e le gore o mosadi, a o moimana?

Yes/Ee	1
No/Nnyaa	2
Don't know/Ga ke itse	3

4. Do you have any children? A o na le bana?

Yes/Ee	1
No/Nnyaa	2

5. If yes, how many children do you have? Fa karabo e le ee, o na le bana ba le kae?

One/ A le mongwe	1
Two/ Ba le babedi	2
Three/ Ba le bararo	3
Four/ Ba le banè	4
Five or more/ Ba le batlhano kgotsa go feta	5

6. Where do you live? O nna kae?

Itsoseng	1
Thusong	2
Other/ Lefelo le lengwe	3

7. Do you stay in a house or a shack? A o nna mo ntlong kgotsa mo mokhukung?

House/ Ntlo	1
Shack/ Mokhukhu	2
Other/ Lefelo le lengwe	3

8. Do you live alone? A o nna o le nosi?

Yes/Ee	1
No/Nnyaa	2

9. How do you get to the hospital? O ya jang kwa bookelong?

Walk/ Ka dinao	1
Taxi/ Thekesi	2
Bus/ Bese	3
Other/ Sepalangwa se sengwe	4

10. How many times do you visit the hospital per month? O ya bookelong makgetlo a le kae ka kgwedi?

One/ Gangwe	1
Two/ Gabedi	2
Three/ Gararo	3
Four/ Ganè	4
Five or more/ Ga tlhano kgotsa go feta	5

11. Why do you visit the hospital? Ke ka ntlha yang fa o ya kwa bookelong?

12. How long do you wait at the hospital before you get served? O leta lobaka lo lo kae kwa bookelong pele o thusiwa?

10 minutes/ Metsotso e le 10	1
Half hour/ Halofo ya ura	2
One hour/ Ura e le nngwe	3
Two hours/ Diura tse pedi	4
Whole day/ Letsatsi lotlhe	5

13. Did you go to school? A o tsene sekolo?

Yes/Ee	1
No/Nnyaa	2

14. If you answered no in question 13, why did you not attend school? Fa e le gore o arabile potso ya 13 ka go re nnyaa, ke ka ntlha yang fa o sa tsena sekolo?

15. Can you read and write? A o kgona go bala le go kwala?

Yes/Ee	1
No/Nnyaa	2

16. Do you have a job? A o a dira?

Yes/Ee	1
No/Nnyaa	2

17. If yes, is your job ... Fa e le gore o a dira, a tiro ya gago ke ya

Full time/ Leruri	1
Part time/ Nakwana	2
Scrop/ Sekoropo	3
Other/ Tiro e nngwe	4

18. Do you receive any grants from Government monthly? A o amogela thuso epe ya madi go tswa kwa Pusong kgwedi le kgwedi?

Yes/Ee	1
No/Nnyaa	2

19. If you receive a grant, which one, and how much money do you receive monthly? Fa e le gore o amogela thuso ya madi go tswa kwa pusong, ke efe, mme o amogela bokae kgwedi le kgwedi?

ARV	1
Children under 12 years/ Ya bana ba ba ka fa tlase ga dingwaga di le 12	2
Disability/ Ya bogolafadi	3
R200 – R500	4
R500 – R1000	5
R1000 +	6

20. How long have you been taking medication for? O na le nako e e kana kang o ntse o nwa melemo ya kalafi?

First time/ Lekgetlo le le lengwe fela	1
One month/ Kgwedi	2
Six months/ Dikgwedi di le thataro	3
1 year/ Ngwaga	4
2 years/ Dingwaga tse 2	5
More than 2 years/ Dingwaga tse di fetang tse 2	6

21. Do you take your medication every day? A o nwa melemo ya gago ya kalafi letsatsi le letsatsi?

Yes/Ee	1
No/Nnyaa	2

22. If no, explain why not? Fa karabo e le rnya, tlhalosa gore ka ntlha yang?

23. Do you only get your medication from the hospital? A o amogela melemo ya gago ya kalafi kwa bookelong fela?

Yes/Ee	1
No/Nnyaa	2

24. How many times per day do you take your medication? O nwa melemo ya gago ya kalafi ga kae ka letsatsi?

Once/ Gangwe	1
Twice/ Gabedi	2
More/ Gantsi	3

25. Do you sometimes forget to take your medication? A ka dinako tse dingwe o lebala go nwa melemo ya gago ya kalafi?

Yes/Ee	1
No/Nnyaa	2

26. If yes, why do you forget your medication? Fa karabo e le ee, ke ka ntlha yang fa o lebana melemo ya gago ya kalafi?

27. Do you take your medication before or after food? A o nwa melemo ya gago pele ga dijo kgotsa morago ga tsone?

Before/ Pele ga dijo	1
After/ Morago ga tsone	2

28. How many times per day do you eat? O ja ga kae ka letsatsi?

Don't eat/ Ga ke je	1
Once/ Gangwe	2
Twice/ Gabedi	3
Three/ Gararo	4
Four +/- Ganè +	5

29. What time do you take your medication? O nwa melemo ya gago ya kalafi ka nako mang?

30. Do you have anyone to help you remember to take your medication? A go na le mongwe yo o thusang ka go go gakolola go nwa melemo ya gago ya kalafi?

Yes/Ee	1
No/Nnyaa	2

31. Does the medication make you feel sick? A melemo ya kalafi e a go lwatsa?

Yes/Ee	1
No/Nnyaa	2

32. If the medication makes you sick, do you experience? Fa e le gore melemo ya kalafi e a go lwatsa, a o diragalelwa ke sengwe sa dilo tse di latelang?

Nausea/ Go feroga sebetse	1
Vomiting/ Go tlhatsa	2
Headache/ Go opiwa ke tlhogo	3
Bad dreams/ Ditoro tse di maswe	4
Weight increase/loss/ Go nona/ota	5
Other/ Tse dingwe	6

33. If you feel good do you stop taking your medication? Fa o ikutlwa botoka, a o tlogela go nwa melemo ya kalafi?

Yes/Ee	1
No/Nnyaa	2

34. Do you share your medication with other people? A o tlhakanela melemo ya gago ya kalafi le batho ba bangwe?

Yes/Ee	1
No/Nnyaa	2

35. If yes, why do you share? Fa karabo e le ee, ke ka ntlha yang fa o e tlhakanela le batho ba bangwe?

36. Do you practice safe sex? A o robalana ka tsela e e babalesegileng?

	Not at all Le e seng	Some-times Ka dinako tse dingwe	Always Ka dinako tsotlhe
Do you practice safe sex? / A o robalana ka tsela e e babalesegileng?			

37. Do you use a condom? A o dirisa khondomo?

	Not at all Le e seng	Some-times Ka dinako dingwe	Always Ka dinako tsotlhe
Do you use a condom? A o dirisa khondomo?			

38. How many sexual partners do you have? O na le batho ba le kae ba o robalanang nabo?

One/ A le mongwe	1
Two/ Ba le babedi	2
Three/ Ba bararo	3
Four/ Ba le banè	4
Five +/- Ba batlhano +	5

Thank you for your participation - Re lebogela go tsaya karolo ga gago