

**THE TRAGEDY OF THE PREMATURE CONSENSUS ON HIV/AIDS* and the Impact
to the South African Economy**

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LIST OF ABBREVIATIONS

ADD	AIDS-defining disease
AIDS	Acquired immune deficiency syndrome
ARV	Antiretroviral
ASSA	Actuarial Society of South Africa
BER	Bureau of Economic Research
CDC	Centres of Disease Control and Prevention
DNA	Deoxyribonucleic acid
ELISA	Enzyme Linked Immuno Absorbent Assay
EM	Electron micrograph
ENV	Envelope
FDA	Food and Drug Administration
GAG	Group Antigen
GRID	Gay Related Immune Deficiency
GDP	Gross domestic product
HBV	Hepatitis B Virus
HERV	Human Endogenous Retrovirus
HHS	Health and Human Services
HHSV-VI	Human herpes simplex virus 6
HHV	Human Herpes Virus
HIV	Human Immunodeficiency Virus
HTLV-II	Human T-cell Leukaemia Virus 2
HTLV-III	Human T-cell Lymphotropic Virus 3
ICTV	International Committee on Taxonomy of Viruses
IDU	Injecting Drug Users
KS	Kaposi's sarcoma
LAV	Lymphadenopathy-Associated Virus
MSM	Men who have Sex with Men
NIAID	National Institute of Allergy and Infectious Diseases

NIH	National Institutes of Health
NIV	National Institute of Virology
NSP	National Strategic Plan
ORI	Office of Scientific Integrity
OSI	Office of Research Integrity
PAAP	Presidential AIDS Advisory Panel
PAAPIR	Presidential AIDS Advisory Panel Interim Report
PCP	Pneumocystis carinii pneumonia
PCR	Polymerase chain reaction
PEP	Post exposure prophylaxis
PMTCT	Prevention of Mother-to-Child Transmission
POL	Polymerase
RCT	Randomised Controlled Trial
RNA	Ribonucleic acid
SADHS	The South African Demographic and Health Survey
SAHARA	South African HIV/AIDS Research Association
SAIMR	South African Institute of Medical Research
SIV	Simian Immunodeficiency Virus
StatsSA	Statistics South Africa
STD	Sexually transmitted disease
STI	Sexually transmitted infections
TB	Tuberculosis
US(A)	United States (of America)
VCT	Voluntary Testing and Counselling
WHO	World Health Organisation

ABSTRACT

It has become accepted wisdom that the world faces the most deadly threat to human survival with the HIV/AIDS pandemic. Twenty-two years later we still have not found a cure and there are no agreements on the way forward. Is it possible that we are looking at the wrong cause or has humanity finally reached its demise? Thus not surprising as HIV and AIDS poses a real challenge to human kind and the science community as a whole.

In the West HIV infection is still contained within its original risk group. However, Africa, Asia and South America pose a different challenge as the risk group is primarily made up of heterosexual individuals, as Professor Eileen Stillwagon noted, "taking a swipe at those who blame sexual behaviour for the rampant HIV epidemic in Southern Africa are still caught up in exotic notions about Africans".

Differences in sexual behaviour cannot explain the 100 fold variations in HIV prevalence in the world. However, Global HIV/AIDS policy in the world still relies almost exclusively on behavioural interventions, abstinence and condoms as means of intervention. President Thabo Mbeki has been the most vocal proponent for poverty to be put on the global HIV/AIDS, thus condemning Western notions regarding Africans sexuality. The inescapable conclusion being made is that HIV is being sustained by sexual networking and, for whatever reasons, poverty stricken black South Africans seem to be the most uninhibited and most promiscuous sexual networkers in the world, compared to other races thus explaining the highest prevalence is a mistake. At present the Global strategy where HIV/AIDS is concerned has not been successful, especially in Sub-Saharan Africa where prevention has been the primary focus and later treatment using allopathic medicine. Thus the one size fits all approach in dealing with the pandemic is a mistake. Hence South Africa's STIs, especially syphilis, is on the decline yet new HIV infections are said to be on the rise. This is contrary to the West, especially in The United States of America. Chlamydia and genital herpes are as high as 30 -40% yet there is no HIV infection. HIV and AIDS in Africa need to be addressed with an African strategy as it clear that Africa/South Africa is faced with a unique challenge compared to the West.

The fact is that though there have been discussions that South Africa faces a doomsday scenario, not all researchers conclude that HIV/AIDS is having a major impact on South Africa's overall economy. Nevertheless, the general consensus is that by undermining health and the development of human capital, HIV/AIDS will increasingly undermine the foundations of human and economic development. The details of this impact are, however,

as yet poorly understood. What is known is that individuals in the prime of their lives, especially young women in child-bearing age groups are at the greatest risk of being infected with the HI-virus. AIDS related illness and death often stand at the centre of a complex web of interrelated knock-on effects with implications for the well-being of individuals, households, economies and the state. It re-examines the most important potential impacts on the South African economy by reviewing current research and concludes that more than two decades after HIV was co-discovered by Drs Luc Montagnier and Robert Gallo as the sole and sufficient cause of AIDS, consequences are only now beginning to be appreciated. But the precise nature of these consequences has yet to be determined with precision.

This study concludes that South Africa is uniquely positioned to define these consequences and impacts. With what is acknowledged worldwide as the most comprehensive plan for the treatment, care and prevention of HIV and AIDS; the largest roll-out of antiretrovirals in the world, backed by health care policies that encompass nutritional support, traditional medical approaches and the promotion of healthy lifestyles; as well as a government that remains focussed on poverty alleviation, South Africa is well positioned to play a decisive role in the battle against AIDS. A more focused approach is therefore needed to study the fundamental causes of the rapid spread of HIV and AIDS in African countries especially South Africa is needed.



CHAPTER 1:

INTRODUCTION, AIM OF STUDY AND RESEARCH METHODOLOGY

1.1 Introduction

It has become accepted wisdom that the world faces the most deadly threat to human survival in the HIV/AIDS pandemic. The aim of this study is to more clearly determine that threat by collating information and applying it to the South African situation.

On a purely scientific level, the notion that HIV (Human Immunodeficiency Virus) is an infectious and sexually transmitted retrovirus which causes AIDS (Acquired Immune Deficiency Syndrome) has been challenged since it was first proposed by researchers at the United States National Institutes of Health (NIH) in 1984. (Gallo; Popovic; Sarngadharan; Schupbach. Science. 1984) In the 22 years to the present, a considerable body of scientific argument and research has accumulated challenging every aspect of the HIV causes AIDS paradigm, including the validity of HIV tests for the diagnosis of "HIV infection". Many of these challenges are referenced through out this study. It received little publicity until 2000, when President Thabo Mbeki publicly stated the need to engage so-called "dissidents" as a necessary pre-requisite to meeting the challenges posed by the HIV/AIDS pandemic. (Letter. 3 April 2000; Speech. 4 May 2000)

The high-profile and influential support for scientists who challenge the HIV causes AIDS paradigm by inviting them to serve on his Presidential Aids Advisory Panel (PAAP) in 2000 was an unprecedented first in world history and has reverberated across the globe. The consequences have been and are still evident in the South African government's approach to the prevention, care and treatment of HIV and AIDS.

1.2 Problem Statement

HIV/AIDS in the developed world is still predominately contained to the original risk group of homosexuals and intravenous drug users. However, in developing countries, Africa and South Africa, HIV/AIDS is heterosexual with females at greatest risk. The challenge is should developing countries and South Africa still look to the west in dealing with this challenging threat to humankind or devise their own strategy to deal with HIV and AIDS. This dissertation aims at doing an in-depth study on the consensus surrounding the science, current statistical and macroeconomic models of the pandemic. and how this has impacted on the South African economy (physical, socio-economic, labour force).In past centuries,

the greatest killer of women was fever following childbirth. One woman in six died of this fever. In 1795, Alexander Gordon of Aberdeen suggested that the fevers were infectious processes, and he was able to cure them. The consensus said no. In 1843, Oliver Wendell Holmes claimed puerperal fever was contagious, and presented compelling evidence. The consensus said no. In 1849, Ignaz Semmelweis demonstrated that sanitary techniques virtually eliminated puerperal fever in hospitals under his management. The consensus said he was a Jew, ignored him, and dismissed him from his post.

There was, in fact, no agreement on puerperal fever until the start of the Twentieth Century. Thus the consensus took 125 five years to arrive at the right conclusion despite the efforts of the prominent "sceptics" around the world, sceptics who were demeaned and ignored and despite ongoing deaths of women. The question is how is AIDS any different? Any sceptic who dares to challenge HIV causes AIDS dogma is demeaned, called names, grants are stopped and they practically lose their livelihood for daring to speak out or oppose the mainstream view. South Africa dared to listen to both mainstream and alternate sceptical views.

There is no shortage of other examples of where mainstream, consensus scientific views were wrong. In the 1920s in America, tens of thousands of people, mostly poor, were dying of a disease called pellagra. The consensus of scientists said it was infectious, and what was necessary was to find the "pellagra germ". The US government asked a brilliant young investigator, Dr. Joseph Goldberger, to find the cause. Goldberger concluded that diet was the crucial factor. The consensus remained wedded to the germ theory. Goldberger demonstrated that he could induce the disease through diet. He demonstrated that the disease was not infectious by injecting the blood of a pellagra patient into himself, and his assistant. They and other volunteers swabbed their noses with swabs from pellagra patients, and swallowed capsules containing scabs from pellagra rashes in what were called "Goldberger's filth parties". Nobody contracted pellagra. The consensus continued to disagree with him. There was, in addition, a social factor - Southern States disliked the idea of poor diet as the cause, because it meant that social reform was required. They continued to deny it until the 1920s. Result - despite a Twentieth Century epidemic, the consensus took years to see the light. In recent history SMON (Sub acute Myelo Optical Neuropathy) viis another example of premature consensus where a virus was blamed for a polio like disease. Twenty thousand Japanese died before the cause was established - a drug widely in use for diarrhoea. Could it be that we face similar problems with the HIV cause of AIDS?

1.3 Importance of the Problem

There have been estimates and predictions over the damage HIV and AIDS is currently causing and there has been a widely accepted view that South Africa is facing a doomsday scenario. The Actuarial Society of South Africa (ASSA) models used in South Africa predict that between 5, 35 to 6 million South Africans are living with HIV and AIDS and the number will increase exponentially over the years. However, ASSA models are not without problems. For example the ASSA models predict that the population growth rate would decline from 2% in 1999 to 1,9% in 2000, with the growth rate projected to 0% by 2010. In the process life expectancy would be cut from 68 to 48 years and decline to as low as 38 years by 2010. Yet, in the period 1996 to 2006 the South African population increased by 10%, according to Statistics South Africa (StatsSA)

In terms of the impact of HIV and AIDS, it has been the view of an overwhelming majority of researchers, including BER (Bureau of Economic Research) and ING Barings, that South Africa faces a doomsday scenario. Broadly speaking, this goes along the following lines:

- HIV/AIDS has become a pandemic
- Black Africans have been extremely hard hit by the HIV/AIDS pandemic, especially the poor and unemployed.
- Deaths will rise exponentially, especially among the younger, more economically active section of the population.
- Health services will not be able to cope.
- The damage done to the workforce will have profoundly negative consequences for the economy.
- The population profile will gradually become older, as a result of the deaths of younger people, which will have important implications for business and economic planners.

In a review of the literature this dissertation will show that projections informing the above scenario have been derived from specially constructed statistical models based on various untested assumptions, including purely scientific ones, which are contested.

These models were created mainly by the business community, particularly the insurance industry, namely the (Peter) Doyle Model and models of the ASSA which have been revised over the years, as well as the ING Barings (2000). As a result the business community has felt an increasing obligation to spend shareholders money on HIV/AIDS awareness and prevention programmes and on detailed strategic planning to try and position themselves to

cope with an imminent pandemic. This has created a major shift in business' strategic focus, and consequently management effort, time and human resources.

1.4 Research Objectives

In order to fully understand the magnitude of the threat posed by HIV and AIDS it is important to understand the history of AIDS, how HIV was discovered and the factual details of objections by scientists who dispute a single virus theory. These alternate thinkers, which encompass eminent and respected scientists, microbiologists, virologists and Nobel Prize winners, question the hypothesis of a single virus causing 34 diseases in individuals who test sero-positive on non-specific tests (Root Bernstein: 1995). Their objections are not based on ideology but rather on fundamental differences in interpretations of scientific data which has led to a clear-cut schism from the consensus by the majority of mainstream scientists who believe that HIV is a sufficient and necessary cause of AIDS.

South African President Thabo Mbeki convened a panel made up of mainstream scientists and leaders and those who have alternative views. HIV/AIDS in the First World countries has remained in the original risk group: Individuals who participate in homosexual sex, intravenous drug users and haemophiliacs. Yet in many ways this is the opposite of what is true for Sub-Saharan Africa, including South Africa, where the HI virus is said to be transmitted via heterosexual sex in the region and as such HIV/AIDS killed more than 3 million people in 2003.

This study will review predictions and projections made by researchers; analyse statistical and macroeconomical models which will aim to highlight the anomalies; report on the potential impact of HIV and AIDS on the South African economy.

It is important for corporate and businesses in South Africa to work with the South African Government in curbing the epidemic of HIV and AIDS as we are faced with a unique situation compared to the west. As already alluded, Sub-Saharan Africa faces a different challenge, where poverty is high; malnutrition, unsanitary and polluted environments are common; and different sub-tropical and tropical climates all perpetuate diseases such as TB, cholera, diarrhoea, fevers, and parasitic infections that form part of the opportunistic diseases of AIDS.

This dissertation is unique. It is written by a South African with a South African experience and sets out the reality of that South African experience which has to be taken into account. The review of the literature, analysis and comment, will argue that South Africa has had and still plays an enormously important and prominent role in the world's approach to the AIDS pandemic, defining its impact and predicting its effects.

Because the study comes at a time when South Africa's Five-year Plan on AIDS 2000-2005 has lapsed, and the new Five-year Plan on AIDS 2007-2011 is being implemented, it offers the opportunity to assess successes and failures. It points to possible solutions and recommends ways forward.

1.5 Limitations of the Study

- While it is important to report on the impact of HIV/AIDS, there are limitations. It is difficult to measure the true impact of HIV and AIDS on the economy, very little empirical research has been conducted on the topic, thus many researchers utilise models to project an impact on the economy.
- All mathematical models have limitations, hence the well-worn dictum Garbage In, Garbage out, and there is a risk of over estimation of the prevalence of HIV/AIDS based on statistics.
- Mortalities attributed as AIDS-related deaths are not properly defined. There are 34 opportunistic diseases and little evidence from death certificates establishes HIV sero-positivity as the underlying condition. Thus it is very difficult to collate all 34 diseases under the AIDS definition as HIV complications as all 34 diseases have their own set pathogens.

1.6 Plan of the Study

- **Chapter 1** outlines the challenge the South African government faces in dealing with HIV/AIDS based on the consensus of mainstream HIV/AIDS dogma: as well as the challenge of government and business to implement cost-effective interventions to mitigate the impact of HIV and AIDS in South Africa. In this chapter the anomalies of projections and predictions of HIV and AIDS are highlighted.
- **Chapter 2** discusses the global history and origins of AIDS; definitions of HIV and the background in which the virus was discovered; the South African HIV/AIDS history; relevant scientific arguments surrounding HIV and AIDS; as well as the evolving definitions of AIDS.

- **Chapter 3** focuses on specifics of South African HIV and AIDS history and where the country took off in terms of the time line of the epidemic. It discusses the turning point for South Africa's HIV and AIDS policy formulation; the contribution South Africa makes to the rest of the world; and the implications of HIV and AIDS to Africa.
- **Chapter 4** looks at President Thabo Mbeki's letter to the world leaders and his keynote address at the opening of the Presidential AIDS Advisory Panel (PAAP) which set the scene for the stand taken in South Africa's current HIV and AIDS policy strategy. This chapter highlights that President Mbeki's comments in 2000 remain relevant and the importance of South Africa taking a unique strategy in dealing with HIV and AIDS.
- **Chapter 5** is subdivided into two sections. Section 1 discusses the outcome of the Presidential AIDS Advisory Panel Interim Report (March 2001); the strategies employed by the government and the policies (2001-2005); and the current National Strategic Plan (2007 – 2011); government budgets of HIV and AIDS-related programmes; government partnerships and the statistical basis for economical planning. Section 2 discusses the challenges facing statistical data as applied to the economic situation.
- **Chapter 6** looks at the Macro Economic and Demographic impact of HIV and AIDS with a focus on the ASSA models 2000, ING Barings 2003, and the Bureau of Economical Research (2001). It analyses available models and predictions in terms of prime indicators; direct and indirect costs, government spending and the correlation between HIV/Aids and poverty.
- **Chapter 7** contains Conclusions; Recommendations and Remarks

CHAPTER 2

HISTORICAL ANALYSIS OF HIV AND AIDS

2.1 Introduction

For those who believe that discovering a virus causes disease is a Eureka moment in the laboratory, HIV presents a case study.

In the early 1980s, the first medical reports were published in US medical journals of significant numbers of young male homosexuals in specific locations getting fatal forms of the uncommon malignancy Kaposi's sarcoma and fungal infections - pneumocystis carinii pneumonia or PCP, cryptococcal meningitis, and candidiasis. Though none of the diseases was new, what was different was their relatively sudden occurrence in young homosexual men.

In those early days research was carried out which pointed to immune suppression due to multiple causes related to the lifestyles of a promiscuous minority of homosexual men. By 1981 the disease was given a name – Gay Related Immune Deficiency (GRID). Factors that correlated in direct proportion with an increased risk of immune suppression leading to fatal diseases were high frequencies of receptive anal intercourse, high numbers of sexual partners and regular drug consumption, whether recreational or on prescription. Some studies showed that the most promiscuous homosexuals suffered recurring infections and could be more or less permanently on antibiotics and other medications. (Hodgkinson; 1996.) Other studies linked the habit of inhalation of poppers (amyl nitrites) used to enhance orgasm and dull the pain of anal intercourse to the occurrence of specific diseases – PCP, KS and cryptococcal meningitis – a fungal infection which was invariably fatal. Several studies highlighted that receptive anal intercourse with scarring indicating forceful, frequent trauma placed a person in a high-risk category. (Chmiel; 1987)

2.2 Global History of AIDS

2.2.1 The Virus Search

Five years prior to the AIDS era, laboratories around the world were drawing towards the end of a fruitless search to prove a viral cause for human cancers. During the 1970s, Dr. Robert Gallo, who would later be the central figure as "co-discoverer" of the AIDS virus, and his colleagues at the NIH, claimed to have discovered three human "retroviruses". (The name "retroviruses" arises because of the copying of the RNA which forms the viral "genes"

and the genome "backwards" into DNA, a direction contrary to that long considered a central dogma, that is, from DNA into RNA). In 1975 the first human retrovirus, HL23V, was proposed to cause human leukaemia but by 1980 was considered a mistake, in fact not to have existed. Of the remaining two, one was postulated to cause a specific though rare form of adult leukaemia and the second remains without a disease. What is significant is that the latter two retroviruses are said to exhibit a liking for T4 lymphocytes. This led Gallo and others to propose that an existing or closely related retrovirus was the agent responsible for killing the T4 cells in AIDS patients. When researchers actively sought and then discovered the same diseases in individuals who were not homosexuals, retroviruses, as well as retro virologists, received renewed interest and GRID became AIDS. (Turner and McIntyre; 1999)

It is worth highlighting that none of the viruses that Gallo has claimed to have discovered have been recognised by the International Committee on the Taxonomy of Viruses in its index. (ICTVdb 2004)

2.2.2 The Global AIDS Time Line

Table: 2.1 Aids Time Line

Year	Event
Late 1970s	a) The end of the cancer virus search and Robert Gallo's HL23V, the virus he alleged caused leukaemia in individuals, became a huge mistake in scientific circles. When scientists discovered that no single virus was responsible for cancer, the search stopped temporarily.
Early 1980s	a) US medical journals reports of significant numbers of young male homosexuals in specific locations getting fatal forms of the uncommon malignancy Kaposi's sarcoma and fungal infections - pneumocystis carinii pneumonia or PCP, cryptococcal

	<p>meningitis, and candidiasis.</p> <p>b) The disease that medicals noted in the homosexuals was given a name: Gay Related Immune Deficiency (GRID)</p> <p>c) CDC's first definition on GRID/AIDS (1982)</p>
1983	<p>a) Dr. Luc Montagnier from the Pasteur Institute in France contacted Gallo and gave him samples of his LAV virus isolate to investigate.</p>
1984	<p>b) The 23 of April 1984 at a Washington press conference held two weeks before the Gallo et al papers were published, Margaret Heckler, Secretary for Health and Human Services, announced that Gallo and his co-workers had discovered the "probable" cause of AIDS and had developed a sensitive blood test kit.</p> <p>c) CDC's second revised definition of GRID, now renamed AIDS.</p>
1985	<p>a) Robert Gallo is taken to Federal Court for purloining the virus Luc Montagnier of Pasteur Institute in France sent him and passing it off in the world as his own.</p> <p>b) CDC's third revised definition of Aids</p>

1987	a) CDC's fourth revised definition of AIDS (Expanded in 1993).
1988	c) Federal court finds Gallo guilty of scientific misconduct and Gallo/NIH has to share co-discovering HIV with Dr. Luc Montagnier/Pasteur Institute.

Source: Collated from various scientific journals and reports

It is important to note that AIDS was first defined before cause was established. Therefore it is imperative to understand the history of AIDS and how it came about.

In May 1983 Professor Luc Montagnier and his colleagues at the Pasteur Institute of Paris published a paper in Science entitled, "Isolation of a T-Lymphotropic Retrovirus from a patient at Risk for Acquired Immune Deficiency Syndrome (AIDS)". (Barré-Sinoussi; 1983) It is important to note that the first word in this paper, "Isolation", serves as a signal that the researcher is claiming proof for the existence of a new virus. In the interests of science, on several occasions, Montagnier sent samples of his tissue cultures to the Gallo laboratory in America with the express understanding these "could be used for biomedical, biological and molecular biological studies".(Gallo ;1986)

However, Montagnier did not claim to have proven his virus was the cause of AIDS merely that it was "associated" and the French discovery lay on the table until May 1984 when Gallo and Popovic and their colleagues published four papers also in Science. (Gallo, Popovic, Sarngadharan, Schupbach; 1984). On the 23rd of April 1984, at a Washington press conference held two weeks before the papers were published, Margaret Heckler, Secretary for Health and Human Services, announced that Gallo and his co-workers had discovered the "probable" cause of AIDS and had developed a sensitive blood test to detect the virus in the body. A curative vaccine was predicted within two years.

The blood test, according to Heckler, was possible because a process had been developed to mass-produce the virus, and it was hoped the test would be "widely available within about six months...we have applied for the patent on this process today". (Gallo. 1991)

The discovery of the (probable) cause of AIDS was not without politics.

2.2.3 The Global Politics of AIDS

AIDS has been surrounded with politics from the first public declaration in 1984 by Robert Gallo, supported by the US Secretary for Health and Human Services (HHS), that HIV caused AIDS.

Many commentators have detailed this period in HIV/AIDS history. The facts remain essentially the same: Montagnier's virus was Lymphadenopathy-Associated Virus (LAV), while Gallo claimed his was Human T-Cell Lymphotropic Virus III (HTLV-III).

The word "claimed" has to be used because exactly what Gallo found is disputed. In 1985 the Pasteur Institute went into battle alleging that Gallo's HTLV-III was in fact their LAV. The arbitration that followed went to the US courts and involved the intervention of US President Ronald Reagan and the French Premier Jacques Chirac. Eventually an agreement was signed in which Gallo and Montagnier became "co-discoverers" of the virus causing AIDS - neither HTLV-III nor LAV, but renamed Human Immunodeficiency Virus (HIV) by an NIH committee, and the profits on their "HIV" test were to be shared. This was the first infectious retrovirus, and it was the first time that an infectious agent was determined, not by scientific proof, but by committee vote.

The matter drew the attention of John Crewdson, an investigative journalist, and US Senator John Dingell. In November 1989, Crewdson published a lengthy article in the Chicago Tribune newspaper, which provoked an internal NIH enquiry into suspect data from Gallo's laboratory. A draft report of the formal investigation written by NIH Office of Scientific Integrity (OSI), was published in September 1991, in which the principal author Mikulas Popovic was accused of "misconduct for misstatements and inaccuracies" that appeared in the first Science paper, and that Gallo, as laboratory chief, "created and fostered conditions that give rise to falsified/ fabricated data and falsified reports". The final draft report of the OSI, completed in January 1992, was immediately criticised and was followed by a review of the OSI report by the Office of Research Integrity (ORI), which found Gallo guilty of scientific misconduct. (Turner and McIntyre;1999)

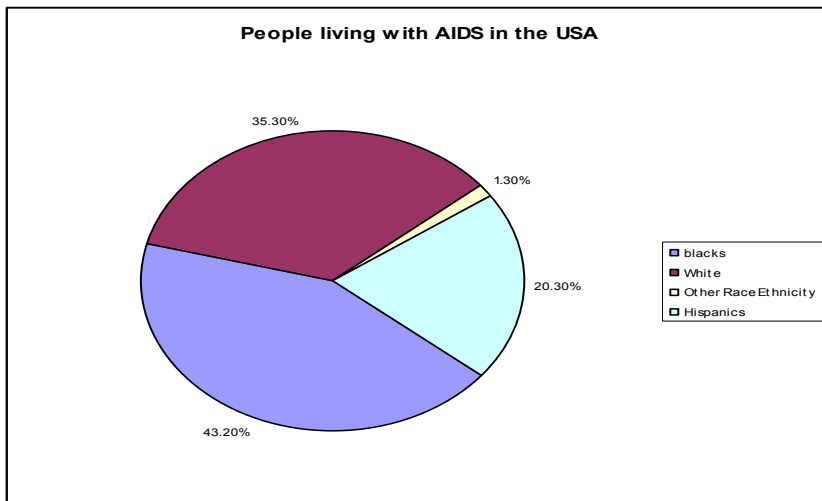
Despite this finding, the OSI also concluded that Gallo's research did not negate the central findings of the 1984 Science paper, in which he claimed isolation of a virus, but proposed only at a press conference that it caused AIDS. Neither Gallo - nor the US Health and Human Services - have been made to recant the proposal.

2.3 AIDS Statistics in the USA

2.3.1 People Living with AIDS

At the end of 2004, the CDC estimated that 415,193 people were living with AIDS in the USA. Figure 2.1 shows the ethnicities of these people, revealing that black Americans have been disproportionately affected.

Figure 2.1 People living with AIDS in the USA



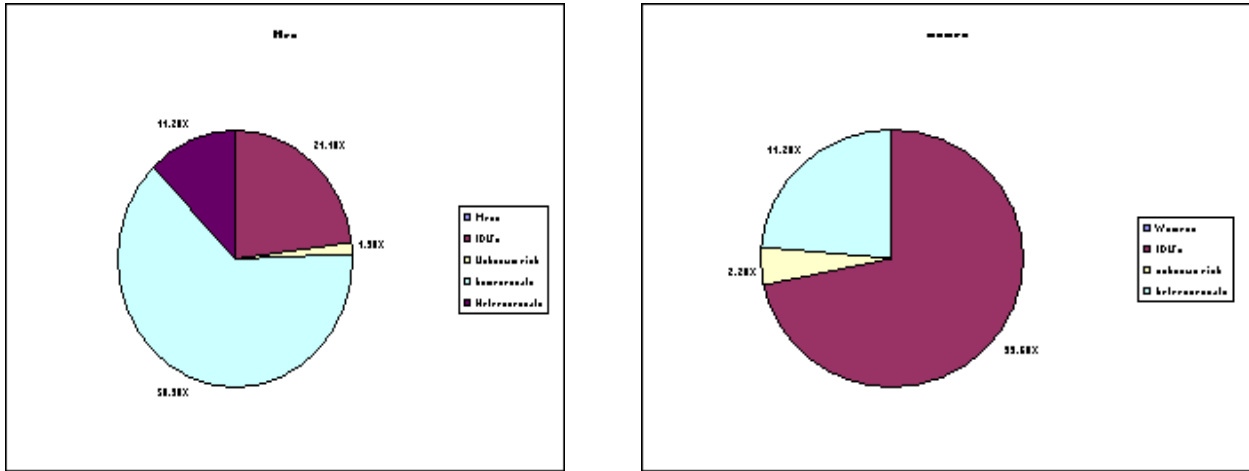
Source: Centers for Disease Control and Prevention (CDC)

Figure 2.2 shows how adults and adolescents living with AIDS most likely became infected with HIV. Around 77% of those living with AIDS are men. An estimated 3,927 children were living with AIDS at the end of 2004, of which 97% probably acquired the infection from their mothers.

People with AIDS are surviving longer and are contributing to a steady increase in the number of people living with AIDS. This trend will continue as long as the number of new infections exceeds the number of people dying each year - and as long as statistics are reported as cumulative totals where "prevalence", "Incidence" and "new infections" are not distinguished.

The risk group in the United States of America has not changed. HIV and AIDS are generally higher among the original risk group being IDUs (Injecting Drug Users), Men having Sex with Men (homosexuals referred to as MSM). Men exposed through heterosexual sex are a small percentage.

Figure 2.2 People living AIDS (Men and Women)



Source: Centers for Disease Control and Prevention (CDC)

At the end of 2004, the CDC estimated that there were 462,792 people living with HIV/AIDS in the 35 areas that had a history of confidential name-based HIV reporting, based on reported diagnoses and deaths. However, the total number of people living in the USA with HIV/AIDS is variously estimated to be between 1,039,000 and 1,185,000. The discrepancy between these figures is due to several factors including:

- Confidential name-based reporting of HIV diagnoses has not yet been implemented in all states.
- Anonymous tests, including home tests, are excluded from case reports.
- One in every four people living with HIV has not had their infection diagnosed, let alone reported.

During 2004, an estimated 38,730 new diagnoses of HIV infection were reported from the 35 areas with a history of confidential name-based reporting, representing a slight increase since 2003. Of these cases, 73% were among adult or adolescent males, 27% were among adult or adolescent females, and less than 1% was among children under 13 years of age. Recent HIV reports represent a mixture of people with recent infection and others who may have been infected in the past but are only now being diagnosed

The HIV infection rate seems to be contained in the USA. In 1985 it was estimated that 1 million American were infected with the HI virus. Twenty years later the increase in HIV infection is approximately 0.84%.

2.4 GLOBAL HISTORY OF HIV

2.4.1 Introduction

Defining HIV is not an easy. Depending on what country you are in and who you are talking to the answer varies. The best this study can do is summarise some of these. In layman terms HIV is a retrovirus classified as a Lentivirus. A Lentivirus is said to be slow to progress into disease. The HI virus is said to take between five to ten years before its infected host progresses to full blown AIDS.

The notion that HIV is the sole and necessary causes of AIDS is hotly disputed by scientists. The views of these scientists are summed up in the Presidential Aids Advisory Panel Interim Report. (PAAPIR; March 2001) This includes the view of Professor Robert Root-Bernstein who argues a multi-factorial cause of AIDS that HIV is neither a sufficient nor necessary cause of AIDS (Chapter 2; PAAPIR). "Root - Bernstein cites that "many commentators on Aids have neatly dividend the Aids world to those who believe that HIV is the sole necessary and sufficient cause of Aids, and those who believe that it plays no role in Aids at all." Infact, many investigators believe that HIV definitely plays some role in AIDS, but its role is yet undefined. (Root - Bernstein; 1995)

The weakness in the conceptual approach of the HIV cause of AIDS paradigm, which continues to be a search for a single causative agent, is that most chronic diseases, including AIDS and cancer, are multi-factorial. The single causative agent approach was formulated long before science recognised that the human body can sustain damage at the cellular and molecular level from a variety of physical, chemical, or biological insults. Therefore, assigning any one entity as the causative agent will impede progress in designing medical control of chronic disorders like AIDS - and cancer for that matter.

2.4.2 International Taxonomic Definition of HIV

The International Committee on Taxonomy of Viruses lists Human Immunodeficiency Virus-1 as the only species of the family Retroviridae, genus Lentivirus. (ICTVdb; 2004) Elsewhere, scientists talk about 3 HIV species - Group M, N and O - and 17 different "clades". (Burke; 1997) Then there are enumerable "isolates", including 106 genetically distinct variants in an asymptomatic AIDS patient (Vartian 1992) and more than 108 in a symptomatic one. (Wain-Hobson; 1995) Other scientists propose that HIV-specific genetic fragments may exist on the genome of many people throughout the world as human endogenous retro-elements as a result of the development of xenogenic therapies for human disease. That is an evolutionary origin in early preparations of vaccines (maybe even ones currently in use)

which have been propagated in monkey renal cells and cells of other non-human species. In people who receive (d) these vaccines there may have been recombination integration between non-human retro-elements and endogenous retro-elements. Fragments dubbed "HIV" such as have been found, are indistinguishable from simian precursors - simian immunodeficiency virus (SIV). (HHS; 1997)

In the US, this may have been contaminated hepatitis B vaccine trialled among volunteers in the homosexual community in the late 1970s-early 1980s, and in the Africa and elsewhere polio vaccines or other vaccines contaminated with simian viruses starting in 1957. (Elswood; 1994); (Horwitz; 1992) ;(Shah; 1976) ;(Urnovitz; 1996) the latter authors note: "At least 26 simian viruses, including adenoviruses, coxsackievirus, herpes virus, echovirus, and possibly other groups of viruses, were found as contaminants in such preparations. (Hull; 1958) Possibly, human immunodeficiency virus type 1 (HIV-1) may be a chimera between one of the simian viruses (simian immunodeficiency virus) and HERV sequences. Post vaccination sero epidemiologic studies of African cohorts provide some support for this concept.

"The importance of recombination interactions between exogenous and endogenous retroviruses is not restricted to HIV-1 or foamy retroviruses. Such recombinants may be of importance in the pathogenesis of chronic diseases of suspected retroviral etiology. In addition, this emerging topic has importance in the ongoing discussions of viral vaccine safety."

Dr. Howard Urnovitz , In a series of testimonies (28 March 1996; 3 August 1999; 2 February 2000 supported by written testimony of Dr. Luc Montagnier; 24 August 2002) to the US House of Representatives Committee on Government Reform and Oversight, detailed how his research directions did not concur with Health and Human services policies on chronic diseases, including AIDS. In so doing he outlined a conceptual approach based on empirical scientific data that policies, funding and research should take to win the battle.(See Chapter 7).Mainstream science holds that HIV is transmitted in the exchange of blood and sexual secretions, and kills T4 cells. The relative absence of these cells then leads to a breakdown of the immune system or Acquired Immunodeficiency Syndrome (AIDS) which occurs anytime from an average five years after infection to 10 years or longer leaving the host open to disease. It is important to emphasise that T4-cell Lymphocytopenia (a lower than normal number of T4 cells) occurs in conjunction with many diseases. The mechanism and causes are not yet clearly understood, but conclusion is that it is therefore not a distinguishing or unique characteristic of HIV. To date, no mechanism by which HIV selectively kills T4 cells has yet been elucidated. (PAAPIR 2001)

2.4.3 HIV Genome and Markers

As things stand, scientists have not been able to agree on the genome of HIV. While there is broad agreement on it being comprised of three protein coding genes - gag, pol and env - these genes are common to all simple retroviruses, so cannot be considered as HIV specific, even if the nucleotide sequences of these genes were identical, which they are not. (Murphy; There is also broad agreement that the full-length HIV genome would contain eight genes that encode regulatory proteins or introns. In practice, researchers have shown that the nucleotide sequences of these genes vary. But in mainstream HIV science their expression, role and functioning is dismissed and ill-understood. Instead, when it comes to HIV scientists talk about "homologies" where a 40% variation in nucleotide sequences is still considered "HIV". Using a computer programme known as BLAST scientists access and interrogate the Los Alamos National Laboratory HIV database and anything within a 40% variation (in the case of the env gene 80%), could be classified as the "same thing".

The fact is genome sequencing cannot replace the need to isolate HIV as an entity with defined dimensions, shape and characteristics - together with evidence that it is acquired through sexual intercourse or parentally - and is not cellular in origin. Alternately, the real test of a virus is that it can be crystallised and the unique crystal structure defined. Then it would need to be thawed in saline, introduced into a laboratory animal where it must cause the same disease which infected the donor host - and recovered. This has not been achieved not even with polio, as far as this study has been able to determine.

The co-discoverers seem not to be in a position to agree which markers are specific to HIV, Gallo cites that p24 is specific to HIV on the other hand Luc Montagnier at different times has proposed various proteins as HIV specific. He has argued co-factors are necessary. The question is if the co-discoverers have been unable to agree on the specific markers (proteins) of the virus, what standards should health professionals and laboratory technicians apply? In an acknowledgement of this problem Abbott Laboratories in its manufacturer's instructions accompanying its popular Elisa test states under the heading "Sensitivity and Specificity": "At present there is no recognized standard for establishing the presence or absence of antibodies to HIV-1 and HIV-2 in human blood" (Abortt laboratories; 1996) Similar disclaimers can be found in all manufacturer's instructions of FDA approved HIV antibody tests.

It is important to understand that in the absence of HIV-specific proteins, tests developed by the Pasteur Institute and the NIH, resulted not in a direct test of the presence of the HI virus, but a surrogate marker, an antibody, which if triggered in the patients' blood indicates

"exposure". Since the Gallo/Montagnier antibody test gained Food and Drug Administration (FDA) approval many others have followed. FDA approval is sought after, because the FDA insists as part of its approval in making it clear that the use of such antibody tests to diagnose "infection" is beyond its approval. Manufacturers who seek FDA approval are protected against litigation in the event that health professional uses such tests to diagnose infection.

The PAAPIR in Chapter 4: Testing concludes with a General Recommendation on testing:

- Any positive HIV ELISA (Enzyme-linked Immunoassay) to be repeated with at least two additional blood samples before an HIV diagnosis is confirmed in order to improve the reliability and validity of ELISA.
- Apply a series of HIV tests of increasing stringency in order to establish the validity, veracity, rigour, reliability and concordance of ELISA, PCR and viral isolation.

Recommendations are one thing, practice another. Organisations and governments, South Africa included, ascribe to WHO recommendations. An ELISA plus two confirmations, is WHO: Schedule 3. But all WHO documents carry a disclaimer on guaranteeing the facts are correct or liability for any damage. In addition, FDA approval is not the only standard in an age where over-the-counter HIV tests are distributed. In addition, the practice of Voluntary Counselling and Testing (VCT) shifts liability to the patient's consent.

2.5 CONCLUSION

It is not intended in this study to support the argument that HIV does not exist and is imaginary or people are not dying from AIDS or the people said to have AIDS are not testing positive for HIV in whatever form or shape HIV is defined. However it is intended to give a reasonably detailed version of the alternative views of other scientists in the world who dispute the mainstream dogma that HIV causes AIDS for the purpose of highlighting that the HIV cause of AIDS may be a tragedy of premature consensus on HIV being the sole and sufficient cause (risk factor) of AIDS. Precedents for such premature consensus abound in medical history e.g. SMON, scurvy and pellagra which was said to be caused by a virus and also said to be communicable, only later discovered to be caused by a diet deficient in nicotinic acid or tryptophan. In order to assess the definitions and views of the various schools of thought, it is important to have a common understanding of what AIDS is. The next sub-chapter defines AIDS and the evolving definitions as prescribed by the Centre of Disease Control and Prevention (CDC) in the United States of America. It is imperative to understand this history for one to link the said pandemic to the effect and impact on the economy.

2.6: Evolving Definitions of AIDS

2.6.1 Introduction

This study established that there is no common understanding of the two words "AIDS" and "HIV". Everyone uses the words but there is no agreement on their meaning. What constitutes AIDS depends on what continent you are on, which country of that continent you live in, and even the year of diagnosis because over the years different definitions of AIDS have evolved (Eleni Papadopulos-Eleopolus.E, continuum; 1996)

In effect the HIV-causes-AIDS theory is rendered completely contradictory by AIDS definitions. For example, if for arguments sake one accepts that HIV is the necessary and sufficient cause of AIDS then it should not be possible to diagnose AIDS any other way except by somehow showing HIV infection. In practice, though, AIDS can be diagnosed in the absence of immune deficiency and even after negative results on blood tests, which as has been alluded to in the previous section are non-standardised. To date there have been five definitions of AIDS - but none of them explain AIDS as a definable disease.

2.6.2 CDC's First Definition of AIDS

The CDC in 1982 originally defined AIDS as a disease, at least moderately predictive of a defect in cell-mediated immunity, in a person with no known cause for diminished resistance to that disease. Diseases include KS (Kaposi's sarcoma), PCP (Pneumocystis carinii pneumonia), and serious OOI (other opportunistic infections). "These infections include pneumonia, meningitis, or encephalitis due to one or more of the following: aspergillosis, candidiasis, cryptococcosis, cytomegalovirus, norcardiosis, strongyloidosis, toxoplasmosis, zygomycosis, or atypical mycobacteriosis (species other than tuberculosis or lepra); esophagitis due to candidiasis, cytomegalovirus, or herpes simplex virus; progressive multifocal leukoencephalopathy, chronic enterocolitis (more than 4 weeks) due to cryptosporidiosis; or unusually extensive mucocutaneous herpes simplex of more than 5 weeks duration. Diagnoses are considered to fit the case definition only if based on sufficiently reliable methods (generally histology or culture). However, this case definition may not include the full spectrum of AIDS manifestations, which may range from absence of symptoms (despite laboratory evidence of immune deficiency) to non-specific symptoms (e.g. fever, weight loss, generalized, persistent Lymphadenopathy) to specific diseases that are insufficiently predictive of cellular immunodeficiency to be included in incidence monitoring (e.g., tuberculosis, oral candidiasis, herpes zoster) to malignant

neoplasm's cause, as result from, immunodeficiency." (CDC Morbidity and Mortality Weekly Report 1982)

2.6.3 CDC's revised definition of AIDS (1984)

In 1984 the CDC revised the definition extending AIDS defining diseases to include non-Hodgkin's lymphoma and lymphoma of the brain. (MMWR;1984) Then the announced "discovery" of HIV as the cause of AIDS during 1984 led to another revision in June 1985. Seven more diseases were added bringing the total of manifesting diseases to 21, and in the process groups previously specifically excluded from an AIDS diagnosis fell under the AIDS umbrella. This happened because finding a viral cause for immune deficiency had the unfortunate effect of voiding the conditional clause of the 1982 definition. It stated that a diagnosis for AIDS could be made only in people with an "opportunistic disease" if there was no known cause for diminished resistance to that disease. At that stage it was well known that certain groups of people were prone to infections of all kinds. This included patients undergoing cancer chemotherapies; transplant patients; those being treated with high doses of corticosteroids to control inflammatory and autoimmune diseases; people born with defective immune systems; and men over the age of 60 who developed Kaposi's sarcoma, since they were at risk for this cancer. Once HIV was recognised as the cause of AIDS, people in all these categories previously specifically excluded, could be diagnosed AIDS.

2.6.4 The African Definition of AIDS (1985)

Meanwhile, in Africa, where diagnostic tools were not always available a CLINICAL definition of AIDS was agreed at the WHO workshop in Bangui, Central African Republic, October 22-24 1985. (WHO; 1986) According to this definition, no HIV test was necessary and HIV infection was inferred. According to the Banqui Definition AIDS was diagnosed as follows

2.6.4.1 Definition of AIDS in Adults

ADULTS: In the absence of known causes of immuno suppression AIDS may be diagnosed by a consideration of:

- MAJOR SIGNS, that is weight loss >10% of body weight; chronic diarrhoea >1 month; prolonged fever >1 month (intermittent or constant).
- MINOR SIGNS: persistent cough for >1 month; generalised pruritic dermatitis; recurrent herpes zoster, oro-pharyngeal candidiasis; chronic progressive and disseminated herpes simplex infection; generalised Lymphadenopathy. In addition, the presences of

generalized Kaposi's sarcoma or cryptococcal meningitis suffice by themselves for the diagnosis of AIDS.

2.6.4.2 Definition of AIDS in Children

CHILDREN: In infants and children, AIDS may be diagnosed if the subject presents at least two of the following minor signs in the absence of known causes of immuno-suppression.

- MAJOR SIGNS: weight loss or abnormally slow growth; chronic diarrhoea > 1 month; prolonged fever > 1 month.
- MINOR SIGNS: generalised Lymphadenopathy; oro-pharyngeal candidiasis; repeated common infections (otitis, pharyngitis etc).

Drs Joseph McCormick and Susan Fisher-Hoch from the CDC, who attended the Bangui WHO workshop, explained the rationale behind the definition as follows:

"We still had an urgent need to begin to estimate the size of the AIDS problem in Africa...But we had a peculiar problem with AIDS. Few AIDS cases in Africa receive any medical care at all. No diagnostic tests, suited to widespread use, yet existed...In the absence of any of these markers [e.g., diagnostic T4/T8 white cell tests], we needed a clinical case definition...a set of guidelines a clinician could follow in order to decide whether a certain person had AIDS or not. [If we] could get everyone at the WHO meeting in Bangui to agree on a single, simple definition of what an AIDS case was in Africa, then, imperfect as the definition might be, we could actually start to count the cases, and we would all be counting roughly the same thing.

"The definition was reached by consensus, based mostly on the delegates' experience in treating AIDS patients. It has proven a useful tool in determining the extent of the AIDS epidemic in Africa, especially in areas where no testing is available. Its major components were prolonged fevers (for a month or more), weight loss of 10 percent or greater and prolonged diarrhoea..." (McCormick 1996)

2.6.5 CDC's Revised Definition of AIDS 1987

The 1987 CDC re-definition explicitly stated that "regardless of the presence of other causes of immunodeficiency, in the presence of laboratory evidence for HIV, any disease listed indicates a diagnosis of AIDS". In other words, according to official guidelines AIDS could be diagnosed among people who were born with congenital immune deficiencies; who had demonstrable, pre-existing, or coexisting causes of immune suppression due to

chemotherapy, radiation treatment, or corticosteroid use; and among transplant patients who were on regimens of immunosuppressive drugs for life.

The summarised situation reveals the anomalies; and are not immediately evident, At this stage people with diseases identical in all respects to those used to define AIDS, however some were not AIDS patients if they tested HIV antibody negative. However, some people were AIDS patients if they went down with opportunistic infections even if they tested HIV antibody negative. In addition, in patients who tested HIV antibody positive almost any disease was diagnostic for AIDS even if there were fundamental causes for their immune suppression.

Even the 1987 definition was not the end, because in 1993 the CDC expanded the definition: "this expansion includes all HIV-infected adults and adolescents who have less than 200 CD4+ T-lymphocytes/microlitre or a CD4+ T-lymphocyte percent of total lymphocytes less than 14, or who have been diagnosed with pulmonary tuberculosis, invasive cervical cancer, or recurrent pneumonia".

In other words, the new definition was based mainly on results of laboratory tests – positive test for HIV-antibodies and low enough T4-cell count. This meant that contrary to earlier definitions of AIDS, the official position was now that opportunistic infections were not necessary to diagnose AIDS

2.7 Conclusion

The schizophrenic definition of AIDS is definitely not scientific. But what the definitional expansions do indicate is how easy it is to double or treble the number of AIDS cases.(Duesberg; 1998) & (Root – Bernstein; 1995) the huge numbers of AIDS cases in Africa need not be occurring because greater numbers of people are infected with an HI virus, rather by definition – and nor can they be cured because once diagnosed HIV "infected" everything that happens to a patient from then on to death has an underlying denominator of which is – HIV.

The PAAPIR concludes Chapter 3: Surveillance, with a General Recommendation underlying one commonality among all panellists:

"There was general consensus on the need for a case definition of AIDS to be standardised for clinical practice." It is clear from the evolving definitions of AIDS, that neither the CDC nor WHO are certain about what AIDS is. The definition of AIDS now encompasses 34 diseases that have existed for many years. According to the current definition it is not even necessary to have a sero-positive reaction on antibody tests because provided CD4 counts

are low enough in combination with any of the "opportunistic infections" full blown AIDS is diagnosed.

Premature consensus on a viral cause of disease has led to misdiagnosis of life threatening diseases such as pellagra, scurvy, and SMON which claimed many lives before error was admitted as incontrovertible data were generated.

Is it not, therefore, possible that the changing definitions of AIDS and scientists not agreeing on the cause may be a repetition of past mistakes that have happened in medical history? In the 22 years of HIV/AIDS research not a single cure has been recorded. Whether HIV causes AIDS or not, HIV/AIDS has been the best funded research of all time. Yet, the promise made by Robert Gallo and the US Secretary of Health in May 1984 at a press conference, to have a HIV vaccine within two years, has not been fulfilled. Surely, if HIV-specific proteins had been identified no delay need have occurred, as is the case with flu viruses where vaccines are produced within a few months? The time has surely come to ask the question: are policies based on a single viral cause of AIDS misdirected? Is it not possible that premature consensus in the absence of a complete picture is impeding progress towards a solution of the HIV/AIDS scourge - and proposed viral diseases in general?



CHAPTER 3

SOUTH AFRICAN HISTORY OF HIV AND AIDS

3.1 Introduction

In the early 1980s, South Africans including their media, were conservative about homosexuality which was illegal as was sodomy. But notable members of the community in South Africa suffered as their counterparts in the United States. The transition to a Constitutional Democracy brought to the fore equality before the law and non discrimination due to sexual orientation. But the origins of AIDS in the male homosexual community were largely unknown by the man-in-the-street. In the Eighties, South Africa followed all the protocols recommended by WHO and CDC. In the latter case, a representative was located in offices of the Health Department in Pretoria, on the same floor as the Director-General.

Whilst the rest of the world was battling it out in terms of HIV and AIDS, South Africa had other problems. Apartheid extended to separate and vastly inferior health services. Thus it wasn't until the early 1990's that South Africa started to wake up to a looming crisis with the emergence of HIV and AIDS cases on a large scale. The local landscape was such that black South Africans were segregated and had poor health facilities, thus even if there were AIDS cases the previous government would not have paid much attention to the issue where people of colour were concerned. However AIDS in Africa was heterosexual, unlike in most developing countries, notably, Europe, UK, Canada, Australia and US, where it has remained largely confined to the original risk groups - male homosexuals, intravenous drug users and to lesser extent haemophiliacs.

When South Africa gained independence in 1994 with its first democratically elected government under President Nelson Mandela, HIV/AIDS was not a major priority. Reconciliation, poverty, stimulating a moribund economy and trying to narrow the gap in terms of wealth distribution became the priority issues. But HIV/AIDS was starting to enter the national psyche as an incomprehensible calamity. Already in 1994, the Department of Health (DoH) developed a National AIDS Plan for South Africa. By 1996, when the first census of the entire population revealed that there were 40, 8 million South Africans, the extent of the looming HIV/AIDS disaster began to raise alarm. In 1997, the Joint United Nations Programme on HIV/AIDS (UNAIDS) and the World Health Organisation (WHO),

predicted that by the end of 1998 an estimated 33, 4 million people would be infected in the world - a 100% increase compared to 1997. In Sub-Saharan Africa, more than a quarter of young adults were estimated to be infected with HIV. By 2000 it was predicted that 40 million people globally would be living with HIV.

In July 1999, President Thabo Mbeki assumed chairmanship of the Inter Ministerial Committee on HIV/AIDS. In response to his challenge to all sectors of society to become actively involved in initiatives designed to address the HIV/AIDS epidemic, the Minister of Health (MoH), Dr. Manto Tshabalala-Msimang initiated a process to develop a strategic plan on HIV/AIDS. In the same month a meeting was convened to review current HIV/AIDS prevention, treatment, and care efforts in South Africa. The meeting was attended by representatives of faith-based organisations, people living with HIV infection and AIDS, human rights organisations, academic institutions, the civil military alliance, the Salvation Army, the media, organised labour, organised sports, organised business, insurance companies, women's organisations, youth organisations, international donor organisations, health professionals and health consulting organisations, political parties, and relevant government departments.

After priority areas for future efforts were discussed and agreed upon, a committee was charged with developing a five-year HIV/AIDS and STD Strategic Plan. Task teams were established to review current goals and objectives for the designated priority areas: prevention; treatment, care and support; legal and human rights; and monitoring, research and evaluation.

The MoH held bilateral meetings with several important sectors including traditional leaders, faith-based organisations and business to obtain their views and to discuss ways to facilitate their active participation.

In September 1999, the MoH and the nine provincial Health MECs reconfirmed the previous priority areas. This was followed in October 1999 by a two-day National AIDS Meeting where provincial AIDS coordinators, the National DOH HIV/AIDS/STD Directorate, representatives of the AIDS Training and Information Centres and representatives of several other organisations discussed progress in the five-year HIV/AIDS/STD strategic plan.

In October and November 1999 the task teams met to further develop their goals and objectives; and to review the 1994 National AIDS Plan for South Africa, the DoH's White Paper for the Transformation of the Health System, the Annual HIV/AIDS/STD survey.

In November 1999 a draft strategic plan 200- - 2005 was presented to the Inter-Ministerial Committee on AIDS, and additional comments were solicited from all government Ministers. The final document was completed in February 2000.

The plan estimated that of all people living with HIV in the world, 6 out of every 10 men, 8 out of every 10 women, and 9 out of every 10 children were in Sub-Saharan Africa. These figures provided sufficient evidence to make HIV/AIDS both a regional and a national priority. (Strategic Plan; 2000- 2005)

The 1999 annual ante-natal clinic survey of HIV prevalence in pregnant women extrapolated to the entire population estimated that 4, 2 million South Africans were infected with HIV. It was estimated that 1,600 people were infected with HIV each day. This translated to 550,000 people infected each year. It was estimated that by the year 2005, there would be 6 million South Africans infected with HIV and mothers of almost 1 million children under the age of 15 would have died of AIDS. The ante-natal clinic surveys also revealed:

- Geographic disparities in the distribution of the HIV/AIDS epidemic in South Africa, ranging from 30% prevalence in KwaZulu-Natal (KZN) to 5% in the Western Cape (WP).
- The HIV epidemic in South Africa was one of the fastest growing epidemics in the world.
- Young women aged 20-30 had the highest prevalence rates; and women under the age of 20 had the highest percentage increase compared to other age groups in 1998 compared to 1997.

The data indicated that the HIV epidemic was severely affecting the young, black, and economically poor populations of South Africa.

Then, in April 2000 news broke of President Mbeki's intention to convene a Presidential AIDS Advisory Panel (PAAP) made up of invited scientists from both mainstream and alternative HIV/AIDS schools of thought.

The next section focuses on the changes in policy on HIV and AIDS and the contribution South Africa has made to the rest of the world in developing its Comprehensive Plan on HIV and AIDS.

3.2 Turning Point in South African HIV and AIDS History

South Africa made history when President Thabo Mbeki's letter to world leaders notifying them of his intention to convene an HIV/AIDS review panel which went out in April 2000. Significantly, only the White House leaked the letter. The Washington Post quoted anonymous sources that it was an "embarrassment" - a refrain picked up on the same day by the opposition Democratic Alliance (DA) in South Africa. A few weeks later, President Mbeki in Parliament in reply to a DA question commented only that his letter was generally well received and his effort supported. When President Mbeki could not be persuaded from his PAAP course, President Bill Clinton made HIV/AIDS a national security issue four days before the panel was due to meet in May 2000. President Bill Clinton requested that four handpicked representatives be allowed to participate in the panel in addition to representatives of the CDC and NIH who had already accepted invitations. In fact HIV/AIDS had always been a national security issue as all communicable diseases are - and an international relations issue, in addition to invoking the Military Industrial Complex. (ICG; 2001)

President Mbeki was the first Head of State to invite input from both the mainstream and alternative voices on HIV/AIDS. The panel marked the turning point in South African policies on HIV/AIDS.

- The Interim Report on the panel released March 2001, acknowledged differences and uncertainties on purely scientific issues, but stated this did not warrant a change of policy based on the premise that HIV caused AIDS (MoH, Media Release, 4 March 2002)
- However, for the first time, the public at large were exposed to alternate views on HIV/AIDS - an extraordinary stand endorsed by Cabinet indicating the extraordinary effort that was required in the face of such a devastating pandemic.
- This in turn impacted on HIV and AIDS policies which in 2003 resulted in the first Comprehensive Plan on HIV and AIDS by a government.
- The plan encapsulated a holistic approach which incorporated healthy living, nutrition, ARV's and education - the ABC, as it is known - Abstain, Be faithful and Condomise - and significantly endorsed Traditional Medicine as an equally valid approach.
- For the first time in policy documents the cause was split from the effect, with HIV and AIDS being separated in acknowledgement that they mean different things.

- Instead of the antiretroviral flood gates being opened on an emergency basis, as was being demanded by mainstream activists, the roll out was delayed to 2004 pending the establishment of qualified personnel, proper facilities, infrastructure and the sustainability of funding.
- This, in turn, led to the South African Treasury financing 90% of HIV and AIDS programmes, including ARVs, instead of relying on donor funding with all its obligations, loss of sovereignty and uncertainties.

3.3 Changes in South African HIV and AIDS Policies

Locally, South African Government policy papers on HIV/AIDS issued before 2000 differ from those issued subsequent to the release of the PAAPIR of March 2001. Most notably, the notion that HIV causes AIDS was subsumed in pre-2000 documents, which emphasised a majoritarian view as cast in stone, which was common in policy documents throughout the world. Post 2000, South Africa's HIV and AIDS policy documents have clearly stated either in the preamble or introduction - or in accompanying statements, for example, by Cabinet, that policy "is based on the premise of an internationally accepted assumption that HIV causes AIDS" or as a Cabinet spokesperson was quoted as saying "a belief that HIV causes AIDS". (Hartley, Business Day; 2006)

The change emphasises that there is uncertainty on the HIV/AIDS hypothesis thus the precautionary principle is invoked. This change in policy is nowhere better explained than in the Health Minister's response to a complaint lodged with the Public Protector (Case No 7/24846/03) where she itemises the uncertainties - one of them the problem of the validity of HIV tests with all sorts of non-standardised technologies on the market, in which manufacturers have not necessarily had to get approval from any authority to market their kits. So which tests and what testing procedure has to be followed is ill-defined - and where it is defined it is often not followed, either out of ignorance, know-better or financial constraints and expediencies

3.4 Comprehensive Plan (November 2003)

An awareness of the uncertainties, not just in the science but also in infrastructure, human resources and sustainable funding led directly to the difficulties in compiling for Cabinet approval of the Comprehensive Plan for the Care, Treatment and Prevention of HIV and AIDS. The list of participants included representatives of the William Jefferson Clinton Foundation, and US Embassy health attaché Gray Handley. It was finally released by Cabinet on 19 November 2003. (www.info.gov.za). from this date, the words HIV and AIDS are

purposefully split because they are considered by government to mean different things: one is a postulated cause; one its postulated effect. Spokespersons starting with the Health Minister (MoH), Dr. Manto Tshabalala-Msimang have made it clear this is now policy.

In the face of a Constitutional Court judgment, the South African Cabinet's delay in approving the Comprehensive Plan, led to a delay in the roll-out of antiretroviral (ARV) treatment in the Public Health System to 1 April 2004. (A date where dramatic irony cannot be dismissed, especially in view of the publicly voiced misgivings of President Mbeki and various top African National Congress officials including the MoH and Finance Minister Trevor Manuel). Unlike other developing countries, South Africa insisted that before embarking on the ARV programme, sustainability had to apply and to this end an ARV roll-out was postponed pending a Treasury Report investigating the financial implications to the fiscus. The result is that 90% of ARV and other funding for HIV/AIDS come from the South African treasury and not donors.

As of September 2006, the accumulative number of both children (21,550) and adult patients on antiretroviral therapy was 213,828. The number of patients initiated on ARV had therefore increased by 35,193 in a three-month period from 178,635 at the end of June 2006. This increase represented an average of more than 11,000 patients being put on treatment every month making the South African programme the fastest growing ARV programme in the world. The growth in the uptake was largely attributed to an increase in the number of facilities providing ARV from 251 in June 2006 to 273 in September 2006.

Beyond the cumulative total, the only information released by the DoH was on 9 November 2006, which announced that nearly 6,000 people had died while receiving ARV treatment since government began the rollout in 2004. The department said it could not say whether the causes of death were directly related to ARVs or other conditions.

3.5 South Africa's Status on Nutrition

In another departure from world approaches to HIV/AIDS, the Comprehensive Plan gives Nutrition a pre-eminent position in policy. This reflects the position taken up by President Mbeki from the start of his engagement in the HIV/AIDS controversy, not to be diverted from the primary priority: the elimination of poverty which cuts across all endeavors from the economy to health. Placing nutrition at the forefront of the battle against AIDS reflects the reality in Africa that people most at risk are overwhelmingly those who live in dire poverty. Placing AIDS under the umbrella of Nutrition, and not the other way round, has policy implications. For example; providing food before drugs.

South Africa's nutrition initiative was endorsed by the Southern African Development Community (SADC) conference of health ministers in January 2003, which unequivocally emphasized the nutrition connection between diseases of poverty and immune deficiency.

The WHO officially incorporated nutrition only in 2005 as part of the treatment of HIV/AIDS (ANC Today 29 April-5 May and the Star 22 April 2005)

3.6 South African Government Strategy on HIV and AIDS

The South African government post-2000 was at first set on a confrontational path with mainstream HIV/AIDS organisations such as WHO and UNAIDS and locally the South African Medical Association (SAMA) and the Treatment Action Campaign (TAC), as well as media.

Part of the confrontation was the status accorded to Traditional Medicine in the Comprehensive Plan, which clearly states that with 80% of South Africans consulting traditional healers, this approach had to receive equal status and priority funding. This reflected a July 2001 declaration by the Organisation of African Unity Heads of State and Government (later ratified by the African Union) of the period 2001 - 2010 as the Decade for Traditional Medicine. While the WHO's first strategy on traditional medicines was drafted in 2002, the role of traditional medicines in the treatment of HIV/AIDS was officially acknowledged only in May 2006 at the World Health Assembly 59th Conference in Geneva. (www.who.int)

At the UN General Assembly Special Session on HIV and AIDS in New York in May-June 2006, outgoing Secretary General Kofi Annan in his report commended South Africa for its Comprehensive Plan and for tripling its resource allocation for HIV and AIDS programmes, since the adoption of the UN Declaration in 2001. Public sector expenditure on HIV and AIDS in South Africa increased substantially over the years as it grew from R30 million in 1994 to over R3 billion in 2005/06. (Cabinet, 24 August 2006)

This is picked up in the Cabinet statement of 6 September 2006 which pointed out that budget allocations to the Comprehensive HIV/AIDS plan had grown "no less than a hundred fold over the past 12 years. This is an indication that this government is indeed serious about the fight against HIV and AIDS, and that anything to the contrary is nothing more than a misrepresentation of facts." (Chapter 4 details the growth in the budget allocations on HIV and AIDS).

The statement continues; *"The Cabinet rejected, unreservedly, all the unfounded claims that we don't have a comprehensive programme to fight the pandemic and noted that our programme is probably the largest and most comprehensive in the world. The meeting noted*

the progress the country was making in the areas of prevention, treatment, care and support. The nutritional aspect of the programme plays a key role throughout the programme, particularly during the treatment stage, and it complements the various forms of treatment. Nutrition is not an alternative to antiretroviral (ARVs) or forms of treatment. This has always been government approach on this matter and it will continue to be part of our strategy. Equally, the misconception that ARVs are a cure for AIDS is not only misleading but dangerous as it creates false hopes. ARVs are indeed an important part of our strategy, and we will continue the ARV roll-out programme, but it would be irresponsible for anyone to create the impression that ARVs, alone, are a total solution to the pandemic. The government, once again, would like to emphasize the importance of advocating for a holistic approach that must include prevention, good nutrition, treatment, care, healthy and responsible lifestyles. (HIV and AIDS Strategic Plan 2000 – 2005).

"As we do all of these things, we should not fall into the trap of forgetting that prevention must remain a cornerstone of our national effort to overcome the disease because, because if we fail to reduce the infection rate, our gains will be reversed. Healthy and responsible lifestyles contribute to the efficacy of all aspects of the programme. Each and every one of us must take responsibility to prevent the spread of the disease by subscribing to the ABC principles i.e. Abstain, Be faithful and Condoms. This message, and not the virus, must be spread to all sectors of our society and to every corner of our country. Cabinet is convinced that a common message by all stakeholders is central to our success in the national effort against the pandemic."

3.7 Conclusion

The implication of all of this is that in Africa the syndrome (the "s" in AIDS) encompasses at least 34 diseases, none of them new. There is no common denominator among these diseases except the infection HIV; they all have their specific pathogen, some of them have nothing to do with immune deficiency, such as dementia. Even the big killer malaria falls into the AIDS definition. All these diseases encompassing the big killers raging across the continent are reduced to so-called "opportunistic infections" caused by a single agent, HIV. A person presenting with any of these diseases in Africa could be diagnosed as having AIDS – and by implication HIV - on symptoms without blood tests. TB is endemic in Africa killing something like 800,000 people a year.

TB sufferers in Africa run the real risk of simply being told they have HIV for which there is no cure. Knowing this, many choose the option of simply not reporting in ill at such clinics and hospitals that exist and as such this presents a real case study of improper diagnosis as

all the disease under the AIDS umbrella have their own set cause. These make the attribution of deaths due to HIV/AIDS difficult. According to StatsSA the cumulative deaths from AIDS 1997 - 2004 are estimated by combining many communicable diseases and so-called "opportunistic" AIDS diseases since neither HIV nor AIDS can be listed on death certificates as a cause of mortality. Therefore, the validity and accuracy of such statistics can be and should be interrogated. Under such circumstances it is not really surprising to hear that higher mortalities per year are being recorded as the HIV/AIDS epidemic rages on in Africa.

Also - malnutrition has the exact symptoms of AIDS: fever, weight loss, diarrhoea. Instead of getting food to these people it is proposed to send antiretrovirals Poverty, as the President of South Africa Thabo Mbeki has persistently highlighted, is the major threat in fighting the HIV and AIDS pandemic.

The next chapter looks at President Thabo Mbeki's letter to world leaders and his address to the PAAP and the relevance of his remarks today.



CHAPTER 4

SOUTH AFRICA MAKES HISTORY ON HIV AND AIDS

4.1 Introduction

This chapter looks into the President Thabo Mbeki's letter to world leaders in April 2000 and what his views are on HIV and AIDS in Africa. HIV and AIDS in Africa is spread in heterosexual sex and the pandemic is said to be growing exponentially. Africa accounts for about 67% of the 38, 6 million infected with HI virus in the world, of This South Africa the hot spot in terms of HIV prevalence with an estimated 14, 25% of the world's total HIV infections.

President Mbeki's response is indicative of the views held by the South African Cabinet and government, and actions initiated by him led directly to the changes and implementations of strategic plans on HIV and AIDS. It echoes the view that South Africa is unique and the plan to deal with the pandemic must be unique. In this chapter further details are elaborated in order to gain an understanding of the influence the President has on where HIV and Aids are concerned.

4.2 The President of South Africa's Letter to World Leaders

I am honoured to convey to you the compliments of our government as well as my own, and to inform you about some work we are doing to respond to the HIV-AIDS epidemic.

As you are aware, international organisations such as UNAIDS have been reporting that Sub-Saharan Africa accounts for two-thirds of the world incidence of HIV-AIDS. These reports indicate that our own country is among the worst affected.

Responding to these reports, in 1998, our government decided radically to step up its own efforts to combat AIDS, this fight having, up to this point, been left largely to our Ministry and Department of Health.

Among other things, we set up a Ministerial Task Force against HIV-AIDS chaired by the Deputy President of the Republic, which position I was privileged to occupy at the time.

Our current Deputy President, the Hon. Jacob Zuma, now leads this Task Force.

We also established Partnerships against AIDS, with many major sectors of our society including the youth, women, business, labour unions and the religious communities.

We have now also established a National AIDS Council, again chaired by the Deputy President and bringing together the government and civil society. An important part of the campaign that we are conducting seeks to encourage safe sex and the use of condoms.

At the same time, as an essential part of our campaign against HIV/AIDS, we are working to ensure that we focus properly and urgently on the elimination of poverty among the millions of our people.

Similarly, we are doing everything we can, within our very limited possibilities, to provide the necessary medicaments and care to deal with what are described as 'opportunistic diseases' that attach to acquired immune deficiency.

As a government and a people, we are trying to organize ourselves to ensure that we take care of the children affected and orphaned to AIDS.

We work also to ensure that no section of our society, whether public or private discriminates against people suffering from HIV-AIDS.

In our current budget, we have included a dedicated fund to finance our activities against HIV-AIDS. This is in addition to funds that the central government departments as well as the provincial and local administrations will spend on this campaign.

We have also contributed to our Medical Research Council such funds as we can, for the development of an AIDS vaccine. Demands are being made within the country for the public health system to provide anti-retroviral drugs for various indications, including mother-to-child transmission.

We are discussing this matter, among others with our statutory licensing authority for medicines and drugs, the Medicines Control Council (MCC).

Toward the end of last year, speaking in our national parliament, I said that I had asked our Minister of Health to look into various controversies taking place among scientists on HIV-AIDS and the toxicity of a particular anti-retroviral drug.

In response to this, among other things, the Minister is working to put together an international panel of scientists to discuss all these issues in as transparent a setting as possible.

As you know, AIDS in the United States and other developed Western countries has remained largely confined to a section of the male homosexual population.

For example, the cumulative heterosexual contact, US percentage for AIDS cases among adults/adolescents, through June 1999 is given as 10 percent. (HIV-AIDS Surveillance Report: Midyear edition. Vol 11, No 1, 1999. US Department of Health and Human Services).

The cumulative absolute total for this age group is reported as being 702,748.

US AIDS deaths for the period January 1996 to June 1997 were stated by the US CDC as amounting to 32,750. (Trends in the HIV and AIDS Epidemic: 1998. CDC).

On May 13, 1999, a SAFA-AFP report datelined Paris stated that 1998 UNAIDS and WHO reports had said that AIDS was responsible for one death in five in Africa or about two million people.

Dr. Ava Coll-Seck of UNAIDS was quoted as saying that there are 23 million carriers in Africa of HIV.

This SAFA-AFP report quotes Dr. Coll-Seck as saying: "In Southern Africa, the prevalence of the (HIV) infection has increased so much in five years that this region could, if the epidemic continues to spread at this rate, see its life expectancy decline to 47 by 2005."

(Interestingly, the five years to which Dr. Coll-Seck refers coincide closely with the period since our liberation from apartheid, white minority rule in 1994).

The report went on to say that almost 1,500 people are infected in South Africa every day and that; at that point, the equivalent of 3 million people in our country carried the virus.

Again as you are aware, whereas in the West HIV-AIDS is said to be largely homosexually transmitted, it is reported that in Africa, including our country, it is transmitted heterosexually.

Accordingly, as Africans, we have to deal with this uniquely African catastrophe that: contrary to the West, HIV-AIDS in Africa is heterosexually transmitted; contrary to the West, where relatively few people have died from AIDS, itself a matter of serious concern, millions are said to have died in Africa; and, contrary to the West, where AIDS deaths are declining, even greater numbers of Africans are destined to die.

It is obvious that whatever lessons we have to and may draw from the West about the grave issue of HIV-AIDS, a simple superimposition of Western experience on African reality would be absurd and illogical.

Such proceeding would constitute a criminal betrayal of our responsibility to our own people. It was for this reason that I spoke as I did in our parliament, in the manner in which I have indicated.

I am convinced that our urgent task is to respond to the specific threat that faces us as Africans. We will not eschew this obligation in favour of the comfort of the recitation of a catechism that may very well be a correct response to the specific manifestation of AIDS in the West.

We will not, ourselves, condemn our own people to death by giving up the search for specific and targeted responses to the specifically African incidence of HIV-AIDS.

I make these comments because our search for these specific and targeted responses is being stridently condemned by some in our country and the rest of the world as constituting a criminal abandonment of the fight against HIV-AIDS.

Some elements of this orchestrated campaign of condemnation worry me very deeply.

It is suggested, for instance, that there are some scientists who are "dangerous and discredited" with whom nobody, including ourselves, should communicate or interact.

In an earlier period in human history, these would be heretics that would be burnt at the stake!

Not long ago, in our own country, people were killed, tortured, imprisoned and prohibited from being quoted in private and in public because the established authority believed that their views were dangerous and discredited.

We are now being asked to do precisely the same thing that the racist apartheid tyranny we opposed did, because, it is said, there exists a scientific view that is supported by the majority, against which dissent is prohibited.

The scientists we are supposed to put into scientific quarantine include Nobel Prize winners, members of Academies of Science and Emeritus Professors of various disciplines of medicine!

Scientists, in the name of science, are demanding that we should cooperate with them to freeze scientific discourse on HIV-AIDS at the specific point this discourse had reached in the West in 1984.

People who otherwise would fight very hard to defend the critically important rights of freedom of thought and speech occupy, with regard to the HIV-AIDS issue, the frontline in the campaign of intellectual intimidation and terrorism which argues that

the only freedom we have is to agree with what they decree to be established scientific truths.

Some agitate for these extraordinary propositions with a religious fervour born by a degree of fanaticism, which is truly frightening.

The day may not be far off when we will, once again, see books burnt and their authors immolated by fire by those who believe that they have a duty to conduct a holy crusade against the infidels.

It is most strange that all of us seem ready to serve the cause of the fanatics by deciding to stand and wait.

It may be that these comments are extravagant. If they are, it is because in the very recent past, we had to fix our own eyes on the very face of tyranny. I am greatly encouraged that all of us, as Africans, can count on your unwavering support in the common fight to save our continent and its peoples from death from AIDS. Please accept, your Excellency, the assurance of my response.

Thabo Mbeki.

4.3 President Thabo Mbeki's Opening Address to PAAP (May 2000)

I am indeed, very, very pleased that we have arrived at this moment and would like to welcome Stephen Owen and other distinguished people from outside our country, as well as the scientists from within our own country who are here. Welcome to what for us is a very important initiative. I am going to read a few lines from a poem by an Irish poet, Patrick Pearce. It will indicate some of what has been going through my mind over the last few months. The poem is entitled, "The Fool" and it says:

"Since the wise men have not spoken,

I speak but I'm only a fool;

A fool that hath loved his folly,

Yea, more than the wise men their books

or their counting houses or their quiet homes,

Or their fame in men's mouths;

A fool that in all his days hath never done a prudent thing,

I have squandered the splendid years that the Lord God gave to my youth

In attempting impossible things, deeming them alone worth the toil.

Was it folly or grace?"

I have asked myself that question many times over the last few months: whether the matters that were raised were as a result of folly or grace.

You will remember the letter we sent inviting you to this meeting. It included a quotation from a report by the WHO on the global situation of the HIV/AIDS pandemic. It said that of the 5,6 million people infected with HIV in 1999, 3,8 million lived in Sub-Saharan Africa, the hardest hit region. There were an estimated 2.2 million HIV/AIDS deaths in the region during 1999, being 85% of the global total, even though only one-tenth of the world population lives in Sub-Saharan Africa. In addition, the report said there are now more women than men among the 22,3 million adults and one million children estimated to be living with HIV/AIDS in Sub-Saharan Africa.

It was this situation, communicated to us by organisations such as the WHO and UNAIDS, which clearly said that here we have a problem to which we have to respond with the greatest seriousness.

And, of course, among the Sub-Saharan Africans are the South African Africans, with millions of people said also to be HIV positive and also many people dying from AIDS. The Minister has indicated our response to this, so I won't go over that ground. But it is important, I think, to bear it in mind because some have put out the notion that our asking certain questions in order to understand better and therefore be able to respond better, constituted an abandonment of the fight against AIDS.

What the Minister has said indicates what we have indeed done. There are other things she didn't mention including the allocation of dedicated funds in our annual budget specifically to address this issue. That is from the point of view of the national government, in addition to what other layers of government are doing. We believe that that response is important, and it is being carried out in an aggressive way, in a sustained way, and in a comprehensive way so that we do indeed respond to the picture that is painted by these figures.

It was because it seemed that the problem was so big, if these reports were correct, that I personally wanted to understand this matter better.

Now as I've said, I'm only a fool and I faced this difficult problem of reading all these complicated things that you scientists write about, in this language I don't understand. So I ploughed through lots and lots of documentation, with dictionaries all around me

in case there were words that seemed difficult to understand. I would phone the Minister of Health and say, 'Minister, what does this word mean?' And she would explain.

I am somewhat embarrassed to say that I discovered that there had been a controversy around these matters for quite some time. I honestly didn't know. I was a bit comforted later when I checked with a number of our Ministers and found that they were as ignorant as I, so I wasn't quite alone.

What we knew was that there is a virus, HIV. The virus causes AIDS. AIDS causes death and there's no vaccine against AIDS. So once you are HIV positive, you are going to develop AIDS, and you are bound to die. We responded with that part of the response the Minister was talking about - public awareness campaigns, encouraging safe sex, use of condoms, all of those things.

But as one read on, one noted that we had never said anything in all of this public awareness campaign, that people need to practice safe sex and use condoms in order to stop the other sexually transmitted diseases - syphilis, gonorrhoea and so on - as though these did not really matter. What mattered was this virus.

As one read all of these things, one discovered what, as far as I know, was the first report published in our medical journals in this country about the incidence of HIV among our people in this part of the world. It was published in the South African Medical Journal in 1985. Among other things, that article said that groups at high risk of developing the acquired immune deficiency syndrome - AIDS - in the United States and Europe include homosexual and bi-sexual males; those who abuse intravenous drugs and haemophiliacs.

The article further says that AIDS has been reported in Central Africa. However, homosexuality, drug addiction or blood transfusion has not been reported as risk factors in these patients. It has therefore been suggested that the agent causing AIDS is endemic in Central Africa.

However, our preliminary data show that although individuals with antibodies directed against HIV are to be found in South Africa, these positive individuals only come from a high-risk group comprising male homosexuals. Individuals who did not belong to any of the known high risks groups did not have HIV antibodies. Our data, says the article, therefore suggests that the agent implicated in the causation is not endemic in Southern Africa.

That was in 1985. And of course all of the other documentation that I've seen suggests that what was reported here in 1985 to be the risk group in this part of the world, remained the risk group in the United States and Western Europe with a preponderance of these infections being among homosexuals and therefore by homosexual transmission, as it is said, of the virus.

But according to these reports, clearly something changed here. In a period of maybe five, six, seven years after 1985, when it was said that such transmission in this region was not endemic in Southern Africa, there were high rates of heterosexual transmission. Now as I was saying, being a fool I couldn't answer this question about what happened between 1985 and the early 1990s. The situation has not changed in the United States up to today, nor in Western Europe with regard to homosexual transmission. But here it changed very radically in a short period of time and increased very radically in a short period of time. Why?

This is obviously not an idle question for us because it bears very directly on this question: How should we respond? There has been this change, for reasons I can't explain but you, as scientists, surely would be able to explain. Why this change? What therefore is our most appropriate response? And so we started communicating with some of the people in this room, to ask what the cause is?

There is a whole variety of issues that the Minister of Health has just said she will not comment upon, which also I will not comment upon because they are very much part of the subject of your discussions. We were looking for answers because all of the information that has been communicated points to the reality that we are faced with a catastrophe, and you can't respond to a catastrophe merely by saying I will do what is routine. You have to respond to a catastrophe in a way that recognises that you are facing a catastrophe. And here we are talking about people - it is not death of animal stock or something like that, but people. Millions and millions of people.

Somewhat of a storm broke out around this question, which in truth took me by surprise. There is an approach which asks why this President of South Africa is trying to give legitimacy to discredited scientists, because after all, all the questions of science concerning this matter had been resolved by the year 1984. I don't know of any science that gets resolved in that manner with a cut-off year beyond which science does not develop any further. It sounds like a biblical absolute truth and I do not imagine that science consists of biblical absolute truths.

There was this very strong response saying: don't do this. I have seen even in the last few days, a scientist who I'm quite certain is eminent who said that perhaps the best thing to do is that we should lock up some of these dissidents in jail and that would shut them up. It is a very peculiar response but it seemed to me to suggest that it must surely be because people are exceedingly worried by the fact that large numbers of people are dying. In that context any suggestion whatsoever that dealing with this is being postponed because somebody is busy looking at some obscure scientific theory, is seen as a betrayal of people. Perhaps that is why you had that kind of response which sought to say: let us freeze scientific discourse at a particular point; and let those who do not agree with the mainstream be isolated and not spoken to. Indeed it seems to be implied that one of the important measures to judge whether a scientific view is correct is to count numbers: how many scientists are on this side of the issue and how many are on the other - if the majority are on this side, then this must be correct.

In the end, what I'm saying is that as Africans we want to respond to HIV/AIDS in a manner that is effective, a manner that does indeed address the fact of these millions of lives that are threatened.

As I noted, the WHO says that in Sub-Saharan Africa, 2 million people died in 1999 alone.

It is truly our hope that this process will help us to get to some of the answers, so that as public representatives we are able to elaborate and help implement policies that are properly focused, and that actually have an effect. I'm quite certain that given the people who are participating in this panel, we will get to these answers.

And so you see why I've been thinking over this matter over the last few months that perhaps I should have allowed the wise men to speak. Indeed when eminent scientists said: "You have spoken out of turn," it was difficult not to think that one was indeed a fool. But I am no longer so sure about that, given that so many eminent people responded to the invitation of a fool to come to this important meeting.

4.4 Conclusion

None of the questions raised by President Thabo Mbeki in his letter to world leaders of April 2000 and his address at the opening of the Presidential Aids Advisory Panel in May 2000 which have yet been answered.:

- By what mechanism can it be explained that in western developed nations, HIV/AIDS is transmitted homosexually, but in Africa it is reported to be transmitted heterosexually?
- What happened sometime between 1985 and the early 1990s to change South Africa's HIV/AIDS incidence from being limited to a few homosexuals to epidemic proportions among heterosexuals?
- What are the specific and targeted responses to the specifically African incidence of HIV/Aids?
- Given the nature of science, and the nature of the predicted calamity is it wise to exclude maverick thinkers simply because they do not conform to majority views?
- How does one justify closing the book of HIV/AIDS science at a specific point the discourse had reached in 1984?
- Is science still science when the only criteria are how many people support a particular theory?

This study therefore proposes that though it is widely accepted that HIV/AIDS is the great folly of his tenure, it is possible and even probable that it is his grace. Some unanswered questions

CHAPTER 5

EMPIRICAL STUDY AND REVIEW OF LITERATURE

5.1 Introduction

This chapter discusses the relevant literature on HIV and AIDS, the historical analysis of HIV and AIDS from a global perspective, filtering through how South Africa has defined the epidemic. This chapter gives an illustration of the strides South Africa has taken post 2000 and the strategies adopted.

It begins with a global analysis of HIV and AIDS versus the African and South African analysis. The discussion is broken down into two sub sections, one being the 1980s to 2000 and post 2000 after President Thabo Mbeki's letter to the World Leaders on HIV and AIDS and the challenges that Africa and South Africa face.

The next section of the literature review looks at the proposed Impact of HIV/AIDS on the South African economy. This section includes national, provincial prevalence statistics of the Ante-natal Clinic Survey clinics; analysis of the projections as illustrated by the ASSA model 2000; and predictions and projections of economic doomsday; anomalies of global statistics; and economic impact on the South African scene.

5.2. Global Versus South African Outlook on HIV and AIDS

5.2.1 South African outlook (1980 – 2000)

Since the first cases of HIV/AIDS were reported more than 25 years ago. UNAIDS/WHO have reported that more than 58 million people may have been infected and 22 million may have died. The consensus in the global community is that HIV/AIDS has a devastating impact to the economies of the world especially that of Africa, Asia and South America. It is predicted that this will have a significant impact on development, security and overall economic growth. The call internationally is for African countries like South Africa to earmark massive increased funding for antiretroviral treatment for those who are already infected and additional funds for the prevention of HIV and AIDS.

This has had and will have a significant impact for South Africa in dealing with the HIV and AIDS pandemic. The global consensus is HIV causes AIDS and hundreds of thousands South Africans have succumbed to AIDS. Up until 2000, the government of South Africa had a policy in line with international assumptions on HIV/AIDS. Whilst the rest of the world was tackling this threat, South Africa started to work on nits own only policies in mid to late

1990s thus the rest of the world could have been seen to be more advanced and in a position to dictate policy directions and implementation.

As 2000 dawned, South African President Thabo Mbeki sent a letter to the world leaders expressing his views on HIV/AIDS. It is at this time that South Africa began to take an individual view of HIV/AIDS. Its policies prior to 2000 subsumed the international notion that HIV causes AIDS and it had not questioned the cause from the effect. Post 2000, the trend began where it was emphasised that policies were based on the "assumption of the internationally accepted premise that HIV causes AIDS" a subtle but significant change.

Current policies, however, do not say that HIV does not cause AIDS as promoted by many in South Africa and the rest of the world. The point of departure was that the South African government separated the believed to be cause and the manifestation of its premised disease. In the year 2000, the South African President Thabo Mbeki made history by inviting a cross section of parties in HIV/AIDS research representing mainstream and alternate scientific views to synthesise views. This was the first time in the world that alternate views were given a public platform to present their ideas. Up until this time the world stage of mainstream HIV/AIDS dogma had not given alternative AIDS thinkers a platform to present their views. Instead of scientific and vigorous debate given the enormity of the pending catastrophe, alternate thinkers were subjected to every personal vilification imaginable, including the pejorative terms "dissidents", "denialists", "charlatans", "snake-oil peddlers", who committed "genocide".

As discussed in the previous chapters, AIDS was first discovered in the early 1980s among homosexual men in the United States. They had a severe form of Kaposi's sarcoma and relatively rare forms of highly virulent, drug-resistant fungal infections. Doctors did not understand the cause; however, what was common among these young males was that they were men who preferred sex with men (MSM), so a sexually transmitted pathogen was immediately investigated. The fact that many of them were often on prescription drug treatments such as antibiotics and some were recreational drug users was by and large ignored, hence at first; the disease was named GRID (Gay Related Immune Deficiency). Whilst that was observed in the USA, South Africa was still struggling to free itself from the Apartheid regime and thus South Africa was fighting a different pandemic that of an infamous legacy and 300 years of colonisation in which black Africans were regarded as less than human. As regards HIV/AIDS little information was available from the 1980s to mid 1990s, except sometime in this period its pandemic changed from being mainly sustained by homosexual sex to being sustained by heterosexual sex.

The first census was held in 1996 which revealed that there were approximately 40, 8 million South Africans. No decline in population growth was noted in the 2001 census in which estimated the population to be 43 million. In fact, the population continued to grow and in 2006, Statistics South Africa estimated the population to be closer to 48 million - a more than 10% growth rate during the same years when millions were estimated to have died of HIV and AIDS.

5.2.2 South African National AIDS Council

The South African National AIDS Council (SANAC) was established in 2000, under then Deputy President Jacob Zuma. It seldom met and was subjected to a barrage of criticism for non-performance. Following the International Aids Society conference in Toronto in May 2006, at which the South African Government stand displayed elements of its programme including lemons, garlic and beetroot and the furore that ensued, 81 scientists, supporting i Dr. Robert Gallos views and science, signed an Open Letter to President Mbeki issued by TAC calling for the Health Minister's immediate dismissal. In the wake of this, Cabinet in September 2006 moved to revamp SANAC, chaired by Deputy President Phumzile Mlambo-Ngcuka, and communications on HIV and AIDS were streamlined under a single Presidency and Cabinet spokesperson, initially Themba Maseko, CEO of Government Communications and Information Services. Mlambo-Ngcuka was also appointed to chair a revitalised Inter ministerial Committee on HIV and AIDS. SANAC is comprised of 16 government representatives and 16 representatives of sectors in civil society. The team encompasses people living with HIV and AIDS, human rights, sports traditional leaders, women and youth, religious, traditional healers, academics, business, men and women sectors, children sector, community, and non-government organisations.

South Africa has taken strides since the history-making event in 2000 when the president of the country invited mainstream and alternative thinkers on HIV and AIDS to assist in meeting the crisis.

- The Promotion of Equality and Prevention of Unfair Discrimination Act No. 4 of 2000 prohibits unfair discrimination. People Living with HIV/AIDS are not specifically included as a group upon which unfair discrimination is prohibited, however it is found as a directive principle at the end of the Act.
- The Code of Good Practice on Key Aspects of HIV and AIDS and Employment No.21815, December 2000 sets out guidelines for employers; public, private and trade unions to implement to ensure that employees with HIV and AIDS are not unfairly discriminated

against in the workplace. The code provides for the following: Creation of a non discriminatory environment:

- ii) Creation of a non discriminatory environment.
- iii) Dealing with HIV testing, confidentiality and disclosure.
- iv) Providing equitable employee benefits.
- v) Dealing with dismissals.
- vi) Managing grievances procedures.

5.2.3 HIV and AIDS Risk Groups

Whilst the rest of the world especially the First World countries or continents (United States of America, Canada, Europe and Australia) are within the original risk group (homosexual men), Africa, Asia and South America have a different risk group where the virus is said to be transmitted via heterosexual sex. This poses a different challenge for these continents compared to their counterparts in First World countries. What the Third World countries have in common is high levels of poverty and malnutrition; illiteracy; unsanitary and polluted, over-crowded urban environments; and sub-tropical and tropical climates as opposed to temperate regions with an abundance of biodiversity including disease-causing micro-organisms and parasites. All of which fuels diseases such as tuberculosis, malaria, cholera, and diarrhoea.

In President Thabo Mbeki's letter to the world leaders, he highlighted that the challenges faced by Western Countries is indeed different from the challenges Africa faces.

5.3 South Africa's Changed Outlook on HIV and AIDS 2001-2006

The PAAP Interim Report (PAAPIR) was made public in March 2001. It was a summary of scientific arguments and theories on HIV and AIDS at the time, as well as an assessment of uncertainties and short comings. In releasing the report, the Minister of Health made it clear that uncertainties and differences did not warrant a change of current HIV/AIDS policy. Definite recommendations on the way forward were contained in the report, which with hindsight have been and are being followed.

South Africa was the first country in the world to release a detailed comprehensive plan on how the country would deal with HIV and AIDS. In this plan of November 2003 it was

evident that the government saw HIV and AIDS as two separate entities. The South African Comprehensive Plan on HIV and AIDS is said to be the best in the world at least on paper. South Africa was the first country to include Nutrition and highlight the equal status of Traditional Medicine in its comprehensive plan on HIV and AIDS, thus making a significant contribution to the directions the rest of the world should follow. Following this lead, WHO later officially adopted nutrition as part of a holistic treatment plan on HIV and AIDS?

Yet, the fact remains, that since Thabo Mbeki's letter to world leaders in 2000, South Africa has been subjected to tremendous opposition and criticism in the way it deals with HIV and AIDS.

- Post 2000, the Public Service regulations were first published in January 2001 and subsequently amended in 2002 to include minimum standards for departmental HIV and AIDS programmes.
- In the same ante-natal clinic surveys which showed a rise in HIV infection from 24% in 1999 to nearly 30% in 2004, syphilis which rides piggy-back on the same approximately 20,000 blood samples from pregnant women declined to a low of 1,6% in 2004 from 11,2% in 1999. Elsewhere, notably the US and UK, while new HIV infections were falling, sexually transmitted disease prevalence was rising.
- In 2004, free antiretroviral (ARV) treatment in the public health systems was rolled out; 90% being funded by the South African government and 10% by external and private sector funders. The availability of ARVs in accredited public health facilities commenced on 1 April 2004 as part of the Plan for Comprehensive HIV and Aids Care, Management and Treatment for South Africa.
- The National Antiretroviral Treatments Guidelines, published in 2004, standardised and detailed for the first time the assessment, enrolment and management of persons who were eligible for ARV.
- In 2005 the National Antiretroviral Treatment Guidelines for children were published.

5.3.1 National Strategic Plan (NSP) on HIV and AIDS & STIs 2007-2011

Work towards a new strategic plan on HIV and AIDS started in July 2006. There was an immediate outcry from civil society organisations notably Treatment Action Campaign (TAC) that they were being sidelined in the process. The focus of their media campaign was to make a scapegoat of the Minister of Health Manto Tshabalala-Msimang as the impediment to

progress with demands that she be fired. The South African Cabinet moved to settle what was an extremely unpleasant situation. In a statement 7 September 2006 it announced a revamped South African National AIDS Council under the chairmanship of Deputy President Phumzile Mlambo-Ngcuka, as well as re-constituting the Inter-ministerial Committee under her chairmanship and comprised of the ministers of Health, Education, Social Development, Presidency and Provincial and Local Government. The Cabinet statement said: "the Inter-Ministerial Committee (IMC) will be constituted to strengthen the implementation of the comprehensive HIV/AIDS programme, improve co-ordination and communication, and to monitor the implementation."

After September 2006, the NSP went through various drafts with acknowledgment from all sides that the process was inclusive. The duties of the Minister of Health who underwent a liver transplant operation were taken over by Minister of Transport Jeff Radebe.

The Parliamentary Portfolio Committee on Health was briefed on 27 February 2007 on progress, content and finalisation of the NSP by the Health Department's Director of HIV and AIDS and STIs Dr. Nomonde Xundu. On 9 March 2007 the National Health Council (NHC) was briefed on the NSP. The NHC comprises the Minister (Jeff Radebe now standing in for Dr. Manto Tshabalala-Msimang), Deputy Minister and MECs for Health from all provinces.

A final draft NSP was presented at the National Consultative Conference held at Birchwood Hotel in Boksburg 14 to 15 March comprising about 500 representatives of various stakeholders in the area of HIV and AIDS. It was formally adopted at the SANAC meeting on 30 April 2007.

5.3.1.1 BRIEF REVIEW OF THE NSP 2007-2011

Primary Goal

- To reduce the rate of new HIV infections; and
- Mitigate the impact of AIDS on individuals, families and communities.

Key priority areas:

- Prevention
- Treatment, care and support
- Monitoring, evaluation and research
- Human and legal rights.

Prevention

To achieve a 50% reduction rate of new infections by 2011 by intensify the implementation of prevention interventions aimed at changing behavior and reducing sexual transmission. In this regard, the focus is on:

- Expanding services for prevention of mother to child transmission of HIV. As of March 2007, 80% of primary healthcare facilities (3,382 out of 3,663) were providing the services and the target is 100% by the end of 2007.
- Doubling the number of mother/baby pairs receiving ARVs.
- Providing an appropriate package of treatment, care and support services to at least 80% of people living with HIV and their families by 2011. This package includes:
 - i. Expanding counseling and testing services;
 - ii. Healthy lifestyle interventions including nutritional support
 - iii. Treatment of opportunistic infections with a special focus on TB; and
 - iv. Antiretroviral treatment.

Scientific Research

The focus is on: vaccines, microbicides and male circumcision.

Evaluation

The NSP includes a framework for monitoring and evaluation aimed at measuring collective progress in the implementation.

Cost

According to a Treasury costing presented at the National Consultative Conference 14 March the cost implementation could be R45bn over the next five years. So far, the government has committed R14bn and is asking the private sector to match this.

5.3.1.2 BRIEF ANALYSIS OF THE NEW NSP (2007 – 2011)

- **No major breakthrough:** The most important fact about the new NSP, as stated by Dr. Nomonde Xundu in her presentation to Parliament is that the new NSP offers "no new major breakthrough since the previous NSP 2000-2005. It is agreed that the NSP 2000-2005 is largely still relevant". In this connection, the HSRC study released 14 March

2007 in the South African Medical Journal concludes that interventions to date have not worked.(Rehle;2007)

- **Goals** As far as halving infections by 2011, the problem that presents is establishing a baseline from which to measure progress. Since there is presently only estimated prevalence and incidence of HIV in small sample populations which are then extrapolated to the entire population no such baseline exists. As it stands, if research teams were to revise their statistics downwards through additional mathematical modeling manipulations that would constitute a drop in new infections.
- **Expanding Mother to Child Transmission (MTCT) Programmes.** Basically this aims at doubling the number of pregnant women on antiretrovirals. One could expect that before doubling the number, the efficacy of ARVs in preventing MTCT had been well established as effective and safe. No such studies exist. According to a press release from the Health Department 12 March 2007 "at least 580,880 pregnant women accessed the PMTCT services during the calendar year 2006. Of these, 74,052 antenatal clients received Nevirapine prophylaxis. A total of 19,758 babies born to mothers living with HIV were tested for HIV infection. 16,288 babies tested HIV-negative while 3 470 babies tested HIV-positive." (Note the use of the word "CLIENTS" instead of patients).

The inference is that of 19,758 babies born, 3,470 (18%) were positive; that this is acceptable because without ARV intervention 100% of the babies would be positive. This is an untested hypothesis. The only way one could determine this is to have two control groups: a) HIV positive women who do not go the ARV route and determine how many of their babies were positive at birth and b) an HIV negative group of women and how many of their babies test positive. This kind of study has **NEVER** been done. (Papadopoulos-Eleopolus.E. Monograph (2001).

Long term studies of the effects of Nevirapine given to mother/babies show that over the lifetime of the child there is increased ill health and even mitochondria damage compared to mother/baby pairs not going the ARV route. (Brink 2007)

Nevirapine as a MTCT intervention has a provisional licence, pending further studies, in South Africa. The same for the US. A provisional licence allows its use and the manufacturer never has to present further evidence. In South Africa, the previous Registrar of the Medicines Control Council Dr. Precious Matotso created a furore at the Bangkok AIDS Conference in 2004 when she stated that Nevirapine would not be licensed for use on South Africa. Next thing, she resigned and Nevirapine was rolled out as the preferred intervention in MTCT programmes, with WHO recommendation.

Also note the discrepancy in the DoH press release quoted above – 74,052 mothers-to-be received ARVS but only 19,758 babies are accounted for in the subsequent figures. What happened in the case of the remaining 54,294 babies? Where is the follow-up of the babies health status following ARVS compared to a group that does not go this route?

It is also proposed that in the MTCT programme a two regimen intervention be adopted: ARVS and co - trimoxazole (Bactrim). No research has been done into the safety and efficacy of this practice in the long term, in the face of evidence that both drug classes can be harmful to the developing child.

- **TB as a complicating factor:** It is proposed that patients who test HIV positive and TB positive get ARVS and TB regimens. No research has been done into this practice.
- **Research:** Note no basic research is being done to test and establish the validity of HIV antibody tests for diagnosis of HIV infection in Africa. Without exception Food and Drug Administration approved HIV antibody test are not approved for the diagnosis of HIV infection.

5.3.1.3 CONCLUSION

It is worth repeating that to date, no one has been cured of HIV or AIDS. ARVS are not a cure for either. The latest study on 22,000 people on ARVS in the past decade (Lancet, Vol 368. August 2006) concludes that ARV treatment does not translate into decreased illness and death.

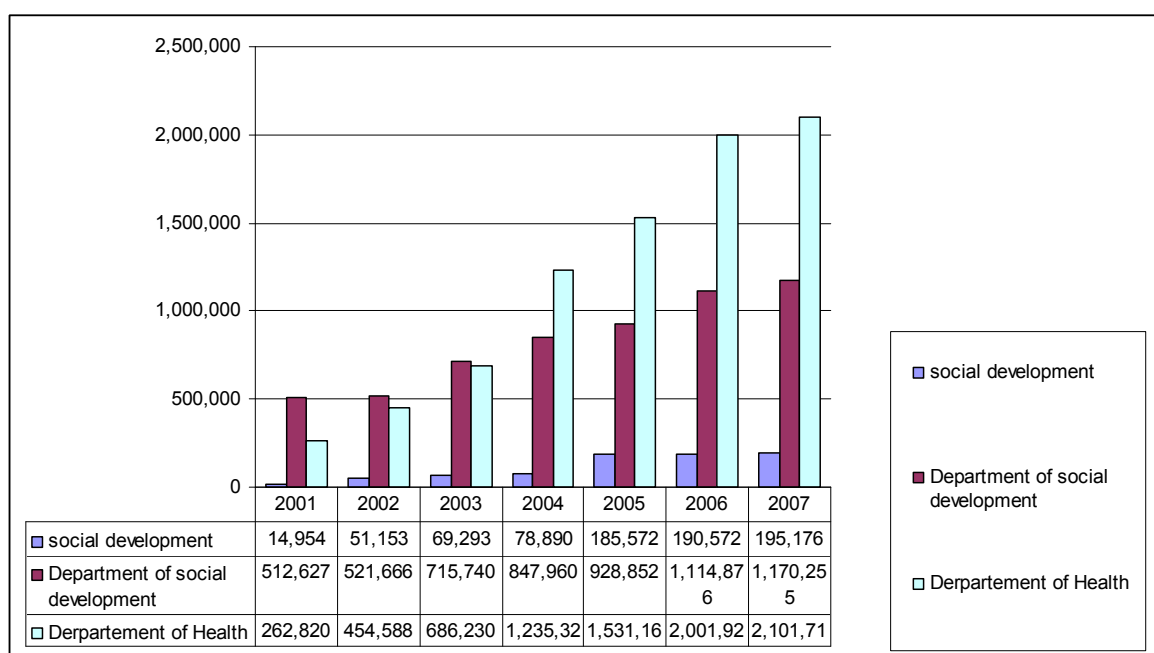
It is business as usual for the AIDS Industry which can now look forward to five years of funding which might exceed that being spent on the Soccer World Cup in the same period. The AIDS Industry will be going a long way to solving South Africa's job creation problem, as will continued AIDS deaths in circumstances where no post mortems are conducted on people who die after testing HIV positive and go on ARV treatments. Unless and until, proper scientific studies are conducted into basic uncertainties underpinning the hypothesis that HIV causes AIDS, there will be no progress. In 2011, South Africa will draw up yet another NSP which does not differ significantly from its predecessors and has as little effect as the NSP 2000 - 2005

5.3.2 Government Budgets on HIV and AIDS Related Programmes

The total government spending on HIV and AIDS was estimated to be R15 billion during the budget period to 2007. Figure 5.1 shows the increasing budgetary allocation especially to the Department of Health. Budgets have increased by 55,55%. Within the Public Administration, including Health, Education and Social Development, large programmes are aimed at HIV and AIDS. This shows that the government is serious about dealing with the challenge presented by HIV and AIDS. This is contrary to what vociferous critics, local and overseas, who enjoy access to the media, would have the man-in-the-street believe, but it does highlight the government's fundamental commitment to curb the pandemic.

This is underlined by the further allocation of R14bn for the period 2007 - 2011 not reflected in the Figure 5.1 for the implementation of the NSP 2007 - 2011.

Figure 5.1 Budget Expenditure Estimates



Source: National Estimates of Expenditure, National Treasury

Table 5.1 Number of Health districts and Public Health Facilities per Province

Province	Number of Health Districts	Operational Health Facilities End December 2005
Eastern Cape	7	20
Free State	5	5
Gauteng	6	29
Kwa- Zulu Natal	11	54
Limpopo	6	23
Mpumalanga	3	12
Northern Cape	5	11
North West	4	8
Western Cape	6	42
TOTAL	53	204

Source; Department of Health

5.3.3 Private Sector HIV and AIDS Programmes

It is difficult to collate information on private sector involvement in HIV and AIDS programmes. Several companies have independent programmes which provide ARV treatment and have established partnerships with government. This includes Anglo American, Daimler Chrysler, BMW South Africa, Nedcor, Anglo Gold, De Beers, Gold Fields and Eskom. These are not the only private sector companies involved in HIV and AIDS programmes in South Africa since government initiated its Partnerships in AIDS programme in 1999, which includes discussions with both non-profit and for-profit private sector companies to share information and harmonise data collection and flow.

5.3.4 Global Statistics versus African Statistics of HIV Prevalence from 1998 - 2000

This section looks at the global statistics of HIV and AIDS, building to the current situation. It looks at the infection rate of western countries versus Sub-Saharan countries which are severely impacted, with South Africa being the worst impacted in this region. The pandemic is said to have killed millions and while UNAIDS has said the rate of new infections in South Africa shows no signs of slowing down, the Minister of Health has stated that the slow rise in HIV prevalence according to ante-natal clinic surveys in recent years, may indicate a plateau in new infections. WHO has cautiously supported this?

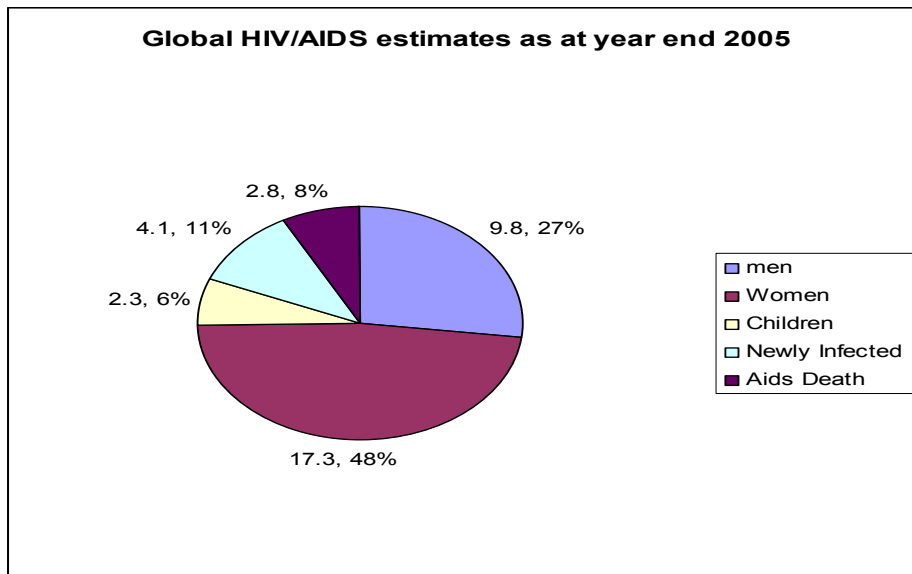
To assess the impact of the pandemic and the challenges faced by Africa, focusing on South Africa in particular, the statistics draw the trend.

Table 5.2 Estimates of new Infection of HIV in 1998

Country	Estimated new HIV infections 1998
North America	44,000
Caribbean	45,000
Latin America	160,000
Western Europe	30,000
North America/Middle East	19,000
Sub-Saharan Africa	4 million
Eastern Europe/Central Asia	80,000
East Asia/Pacific	200,000
South Asia/South-East Asia	1,2 million
Australia & New Zealand	600
Global total	5,8 million

Source: UNAIDS/WHO

Figure 5.2: Global HIV/AIDS estimates



Source: Figures published by UNAIDS/WHO

The statistics on the world epidemic of HIV and AIDS were published by UNAIDS and WHO in May 2006. As at year end of 2005, it was estimated that there were 38,6 million people living with HIV/AIDS. The number of people living with HIV increased from an estimated 8 million in 1990 to 38, 6 million in 2005 and is said to be still increasing. About 63% of that figure is individuals living in Sub-Saharan Africa. South Africa accounts for 14,25% of the global figure and 22,62% of the Sub-Saharan Africa. Thus making South Africa the country with the highest HIV prevalence rate in the world.

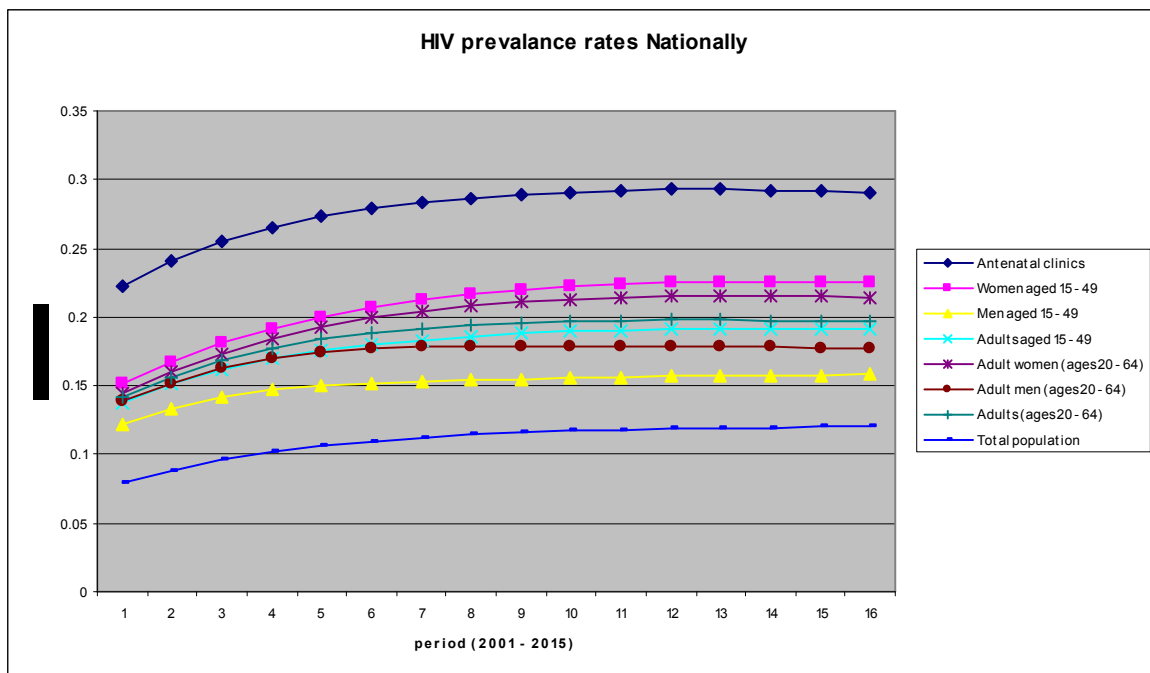
There has been a 20,72% increase in people living with HIV worldwide between 1990 and 2005. The global statistics versus African statistics, indicate the pandemic is not slowing down in Africa with the possible exception of Malawi, Uganda and Zimbabwe, according to UNAIDS, where there have been some indicators of a drop in new infections. For South Africa, with its groundbreaking Comprehensive Plan, the question remains will this plan work in bringing down AIDS deaths and preventing new HIV infections? There remains the added poignancy of the possibility that mainstream scientists have reached a premature consensus in the absence of a clear picture about the cause of AIDS, as has happened before in history. Are South Africans victims of virus chasers who identified a SMON virus as the cause of death of thousands of people in Japan, only to have it later emerge that the underlying cause was clloquinol - a drug given to adults to stop diarrhoea.

5.4: Statistical Basis of Economic Planning

5.4.1 Introduction

This section discusses relevant literature on the impact of statistics to the South African economy. It commences with the relationship between syphilis, also a sexually transmitted disease and HIV and AIDS prevalence. It discusses the mathematical models utilised to estimate statistics and deals with the ASSA model and the impact of such predictions and projections on the economy. It highlights the anomalies between statistics from different agents. South Africa has been said to have the highest prevalence of HIV and AIDS in the world. As a result, ASSA models predicted a decline in population growth to 1, 9% in 2000 and 0% by 2010. The first population survey in a democratic South Africa was conducted in 1996 and it was found that there were 40, 8 million South Africans. The second census in 2001 put the total at 43 million, which was subsequently estimated to be an under-estimate and led to a revised population estimate of nearly 48 million in 2006. This is a more than 10% increase over precisely the period in which deaths due to HIV and AIDS were predicted to decimate the population. Figure 5.3 highlights the HIV prevalence rates nationally by gender and age and what is evident illustrated by the graph is the highest prevalence resides among ages 15 – 49 years.

Figure 5.3 National HIV Prevalence rates



5.5 Challenges Facing Statistics in South Africa

5.5.1 Anomalies in HIV and AIDS Statistics

HIV/AIDS statistics have been characterised by a rising tide of media coverage of some or other press release on some or other report quoting horrendous statistics of "HIV infection" and "AIDS deaths" in the region. South Africa and Sub-Saharan Africa numbers quoted are sometimes incomprehensible, not least because what constitutes the sub-region is ill defined, and sources of information are often missing.

A brief survey of statistics quoted in the press and various reports illustrates problems. Examples abound, like the HIV/AIDS Barometer in the Mail & Guardian of 8 June 2001, which estimated worldwide infections as at 3.30pm 7 June at 42,748,800, however a few lines away in the same column, an article on a UNAIDS Report commemorating the 20th anniversary of the first reports of AIDS cases in the US, stated that 60 million people worldwide had been infected with HIV. But an article on the same UNAIDS Report from SAPA-AP stated that there were 36 million HIV infected people in the world.

Estimating the number of "HIV infections" and "AIDS deaths" in South Africa – or anywhere for that matter – is bedevilled by conflicting statistics by different agencies and individuals.

It has remained a confounding paradox that no one would have had to rely on estimates if HIV infection were a notifiable condition. But militant resistance to this comes from precisely the people who use the statistics such as they are to drum up the spectre of a runaway plague. Contributing to the sensational nature of HIV/AIDS statistics is the lack of clarity on definitions, which confounds analysis and comparisons. The most obvious is: what is meant by "AIDS"? It is not always clear whether this is "all 34-odd diseases classified under the syndrome" as defined in the Bangui definition of AIDS which applies only in Africa. Or whether the definition of "AIDS" is "HIV infection". And this is further confounded when HIV and AIDS are linked into HIV/AIDS. For example, a study or report using the Bangui definition may lump together statistics relating to TB, malaria, herpes, STDs and any or all of the other 29 diseases defined under the syndrome as AIDS. In the process all the big killer diseases are either wiped out to be replaced by the construct "AIDS" or they are counted twice. Sometimes whole categories of diseases have been shifted around in the statistical circles. WHO, for example, advocates a standard whereby if a person has TB and tests HIV antibody positive, then that is counted as an HIV/AIDS case, not TB.

In this context the much repeated "22 million have died in AIDS epidemic in 20 years" is an alarming figure. Anything from 1,7 to 3 million people are estimated to die annually of malaria. Malaria is listed as an "opportunistic infection" of AIDS. One out of the 34 diseases under the AIDS umbrella would have killed between 34 and 60 million in the past 20 years.

Since the advent of the AIDS era, a large percentage of Africans are said to die of nothing else except AIDS, since it is difficult for Africans not to die from a syndrome that has 34 diseases under its umbrella - and some of these diseases have a high prevalence in Africa even with the absence of HIV i.e. diarrhoea, malaria, TB etc. Under these conditions it is paradoxical how populations continue to increase. South Africa, for example went from an estimated 41 million in 1996 to nearly 48 million in 2006.

All of which must be weighed up against available statistics for South Africa. For example Census 96, estimated childhood mortality by age 15 at 0.122. In September 2005, StatsSA estimated an infant mortality rate of 43 per 100 000. Yet the UN's Human Development Index ignored this in favour of a figure drawn from undefined sources of 53 per 100,000. At the time StatsSA's maternal mortality ratio was estimated at 55 per 100,000 in 1997, rising to 78 in 2001, and declining to 73 in 2002. Yet the UN HDI report asserted that South Africa's maternal mortality ratio was 230 per 100,000 people.

Misleading and misinforming, statistics are so erratic that they patently can not be trusted as accurate. Nothing is more unreliable than the fact that often there is no reference to the source or an outline of the method (mathematical algorithms) by which statistics are calculated. So it becomes difficult to interrogate the statements. Take the AIDS orphan definition. The UK's Save the Children in its report "Children Living with HIV/AIDS in South Africa" defines an AIDS orphan as any child under the age of 15 who has lost its mother but it does not specify whether "lost" need necessarily mean death or, for example, abandonment. The WHO definition is any child who before the age of 15 has lost a mother due to AIDS-related death that is deaths from any of the 34 diseases under the "s" in AIDS. But the UNAIDS definition, as was explained by Dr. Ava Coll-Seck at a press conference on 12 July 2000 at the International AIDS Conference in Durban, is any child who has lost one or both parents from any cause, including being abandoned by one or both its parents or even if they were killed in a car accident or violence. This is the same definition used by US Agency for International Development and the Henry J Kaiser Foundation's LoveLife in its "Impending Catastrophe" reports, first issue published June 2000. Even a cursory analysis of statistics reveals the contradictions and implausible differences.

5.5.2 Changes in the Ante-natal Clinic Surveys

The foundation of South Africa's HIV prevalence statistics is ante-natal clinic surveys of pregnant women which have been conducted annually since 1990.

- 1990 –1993 Surveys: Prior to 1994, the surveys were based on former provincial boundaries in South Africa and mostly did not include data from former self-governing states.
- 1994-1996 Surveys: The surveys from 1994 to 1996 consisted of anonymous and unlinked testing of residual blood specimens collected by laboratories for routine syphilis and rhesus testing - the methodology recommended by WHO and the US CDC and used in many countries throughout the world. The aim was to collect approximately 20,000 blood specimens each year from laboratories that conducted routine blood typing tests. Efforts were made to ensure that all regions (i.e. provinces) were covered by 2000 samples each. However, one weakness of the ante-natal surveys in South Africa up to 1997 was the lack of a consistent sampling frame. Because blood was collected from laboratories there was no control over which clinics submitted samples or over how individual patients were sampled, nor whether the sampling was in fact random. In addition, provinces used different sampling methodologies. Also, up to 1996 all blood samples that tested positive were subjected to confirmatory tests based on a different assay principle. The practice was discontinued in 1997, so a rise in the number of “positive” tests would be a given consequence. This in fact happened.
- 1997-1998 Surveys: The problem of the lack of consistent sampling was addressed in 1997 by a new protocol which introduced a system where the same selected clinics in every region would contribute samples each year. Up to 1998, each region contributed about 2000 samples. However, in 1998 sample sizes were made proportional to population size in each province. One implication of this, for example, was that from having 2000 samples taken from the so-called epicentre of the HIV/AIDS epidemic in KwaZulu-Natal, 3,500 samples were used in 1998. Likewise with Gauteng, which was regularly in second place for high numbers of HIV positive samples? Not surprisingly with this new “weighting” there was a startling jump in HIV positive prevalence in 1998 as compared with 1997. Yet another change introduced in 1997 was the method of collecting and testing samples. Instead of riding piggy-back on routine syphilis and rhesus testing, blood samples were collected at clinics and then forwarded to selected laboratories to enable tests to be conducted for HIV and syphilis. This meant sample

selection, preparation and storing at individual clinics, with unknown refrigeration facilities and for undisclosed periods.

- 2000 Survey: The identical protocol, methodology and interpretation as 1998 and 1999 were used. This is the first time that an identical protocol was followed in three successive years. It showed a statistically insignificant increase of HIV prevalence to 24,5%, that is it is just outside the margin of error of the previous year. With a more or less stable estimated prevalence of HIV over three years, the DoH concluded that the epidemic was stabilising and that an estimated cumulative total of 4,7 million people in South Africa were now infected by HIV.
- 2001 Survey: For the fourth consecutive year the identical protocol, methodology and interpretation were used. Once again it showed a statistically insignificant increase of HIV prevalence to 24,8%. The DoH's summary comment in the report National HIV and Syphilis Sero-Prevalence Survey Of Women Attending Public Antenatal Clinics in South Africa – 2001, released in June 2002 was ignored: "The antenatal survey findings over the last several years along with data obtained on STI prevalence further support trends and patterns observed in recent years: that the pace at which the HIV epidemic was growing between 1990 - 1998 has slowed down and has begun to level off. Intervention programmes seem to be effectively taking ground amongst teenagers where we have seen an encouraging decrease in HIV prevalence between 2000-2001."
- 2002 Survey: 26,% HIV antibody positive prevalence rate
- 2003 Survey: 27,9%
- 2004 Survey: Achieved a first - it went so far over the top that everyone including study organisers the DoH said the annuals surveys as a basis for extrapolating estimated HIV infection of the entire population were unreliable and definitely an overestimate. The 2004 survey found a 1,5% overall increase in HIV prevalence to 29,4% among ante-natal clinic attendees. The report also for the first time based its interpretation on mathematical modelling used by Statistics South Africa, which in turn used an ASSA model, in so doing there was a 2 million hike in estimated HIV infections in the country to between 6,29 - 6,57 million in the entire population. The model used by Statistics South Africa, and adopted by the DoH for the first time in 2004 was none other than the model developed by the University of Cape Town's Centre for Actuarial Research based on the Doyle model that sexually transmitted diseases ran in parallel with HIV infection. Unfortunately for this theory, the 2004 ante-natal clinic survey provided what should have been the final nail in the coffin of this model because for the 7th year in succession

syphilis prevalence dropped in 2004 to an all time low of 1,6%. This destroyed the entire theoretical basis for the actuarial model, but the significance seemed to escape not just science and health reporters, but editors and commentators in general.

- 2005 Survey: 30, 2%. The report concluded that "HIV prevalence estimates show that HIV prevalence rates for 2004 and 2005 are very similar. The prevalence profile continues to confirm the expectation and projections of numerous groups whose models suggest that South Africa will begin to see a decline in the prevalence profile." In a change from 2004, data was manipulated in accordance with WHO/UNAIDS models and the estimated HIV infections in the entire country dropped to a total of 5,5 million.

Table 5.4 Syphilis and HIV Antenatal Surveys 1997 – 2000

The surveys suggest that while HIV has been exponentially increasing Syphilis prevalence has been on the decline.

Year	Total number of women with Syphilis test		
	Positive	Negative	Total
1997	1 493	10 944	12 437
1998	1 602	13 495	15 097
1999	1 169	15 571	16 740
2000	502	16 073	16 575
Total	4 766	56 083	60 849
Total number of women with HIV test			
1997	2 004	10 431	12 435
1998	3 170	11 919	15 089
1999	3 698	13 152	16 850
2000	4 001	12 547	16 548
Total	12 873	48 049	69 922

Source: Department of Health Volume 2 (March 2000)

5.5.3 Estimated HIV and AIDS Prevalence

The Actuarial Society of South Africa (ASSA) provides regular reports on HIV and AIDS statistics. ASSA statistics are based mainly on the ante-natal clinic data extrapolated to the entire population. The ASSA 2000 report illustrates that HIV has a disproportional effect depending on province. In Table 5.5 HIV and AIDS prevalence is provided for three provinces - Gauteng, KwaZulu-Natal (KZN) and Western Cape (WC). KZN being the highest in HIV and Aids prevalence, followed by Gauteng and WC being the lowest in all nine provinces.



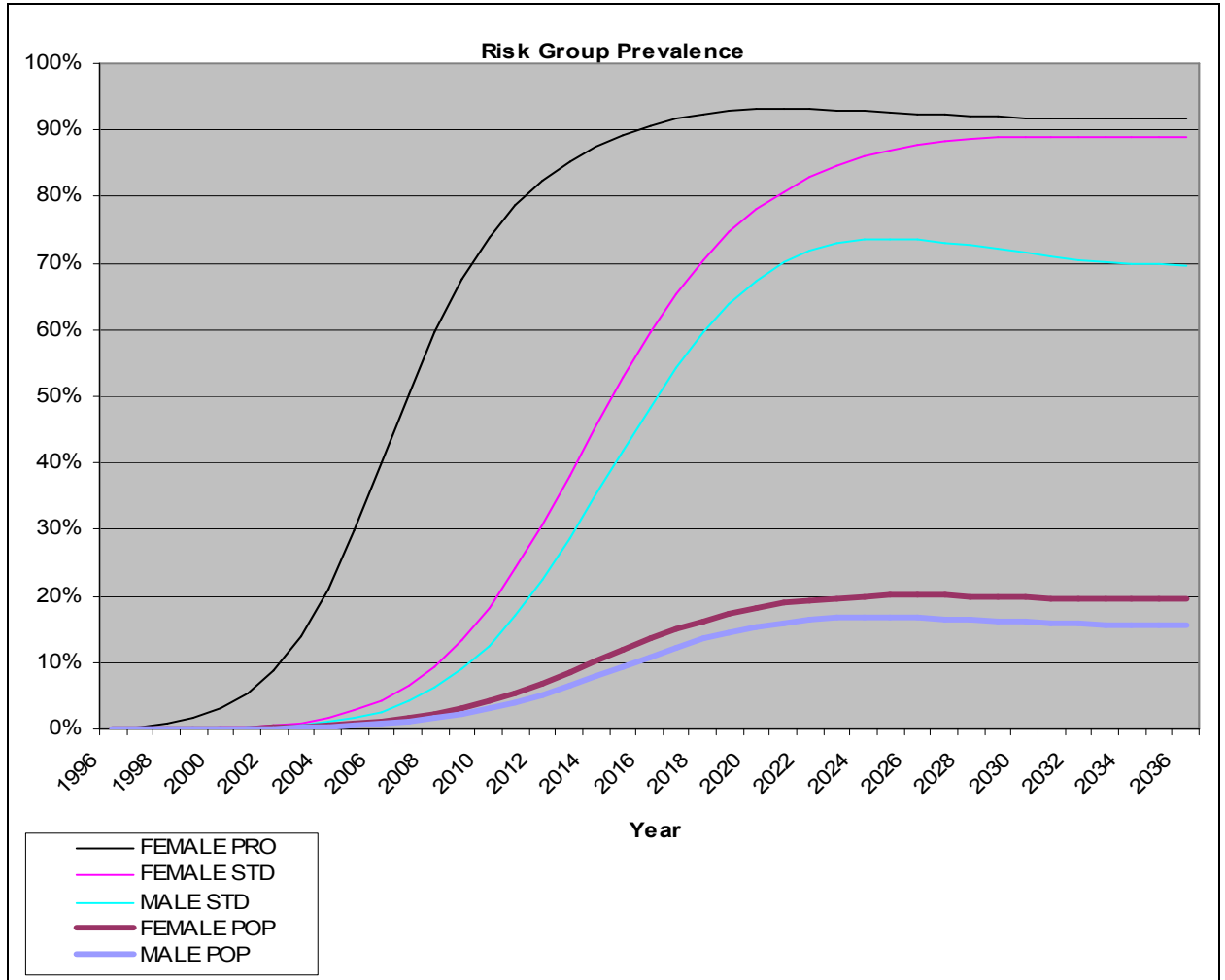
Table 5.4 Projected HIV Prevalence for Three Provinces

Source: ASSA Model 2000

	GAUTENG		KWAZULU NATAL		WESTERN CAPE	
	2003	2010	2003	2010	2003	2010
Total Population	9,142,158	8,856,913	9,556, 833	9,589,177	4,615,965	4,893,421
Total HIV infections	1,538, 208	1,372,255	1,813, 217	1,599, 512	218,468	275,687
total births	182,555	156,071	256,894	235,968	92,200	85,378
Aids sick (total Aids Sick mid- year)	128,870	299,723	181,582	345,945	13,620	45,259
Deaths :						
Non- Aids Death	74109	77,844	77,481	76,535	39,602	43,261
Aids Deaths	74,134	167,079	103,823	192,955	7,894	25,384
Accumulated Aids Deaths	203,984	1,141,060	323,962	1,487,357	20,975	139,596
Prevalence Rates						
Antenatal Clinics	30.92%	31.65%	39.13%	36.66%	12.42%	12,58%
Women (ages 15 - 49)	26.71%	26.98%	36.20%	32.47%	9.67%	11.96%
Adult women (ages 20 - 65)	23.17%	22.26%	31.68%	27.30%	8.79%	10.69%
Adult Men (ages 20 - 65)	28.43%	26.34%	35.94%	31.15%	6.84%	7.87%
Adults (ages 20 - 65)	25.90%	24.31%	33.67%	29.14%	7.83%	9.39%
Incidence Rates						
Total population	1.89%	1.28%	2.14%	1.72%	0.69%	0.52%
Total new Infections	143,829	97,281	165,478	137,099	30,289	23,905
Mortality Statistics						
Life expectancy at birth						
Male	50.2	41.7	43.6	36.8	58.9	56.2
Female	54.8	42.5	46.2	36.3	65.3	58.8
Maternal Orphan						
Total Orphans	113,727	289,727	186,196	487,920	35,437	69,843
Total Aids Orphans	57,013	245,470	116,537	437,651	7,325	44,435

5.5.4 Risk Group Prevalence

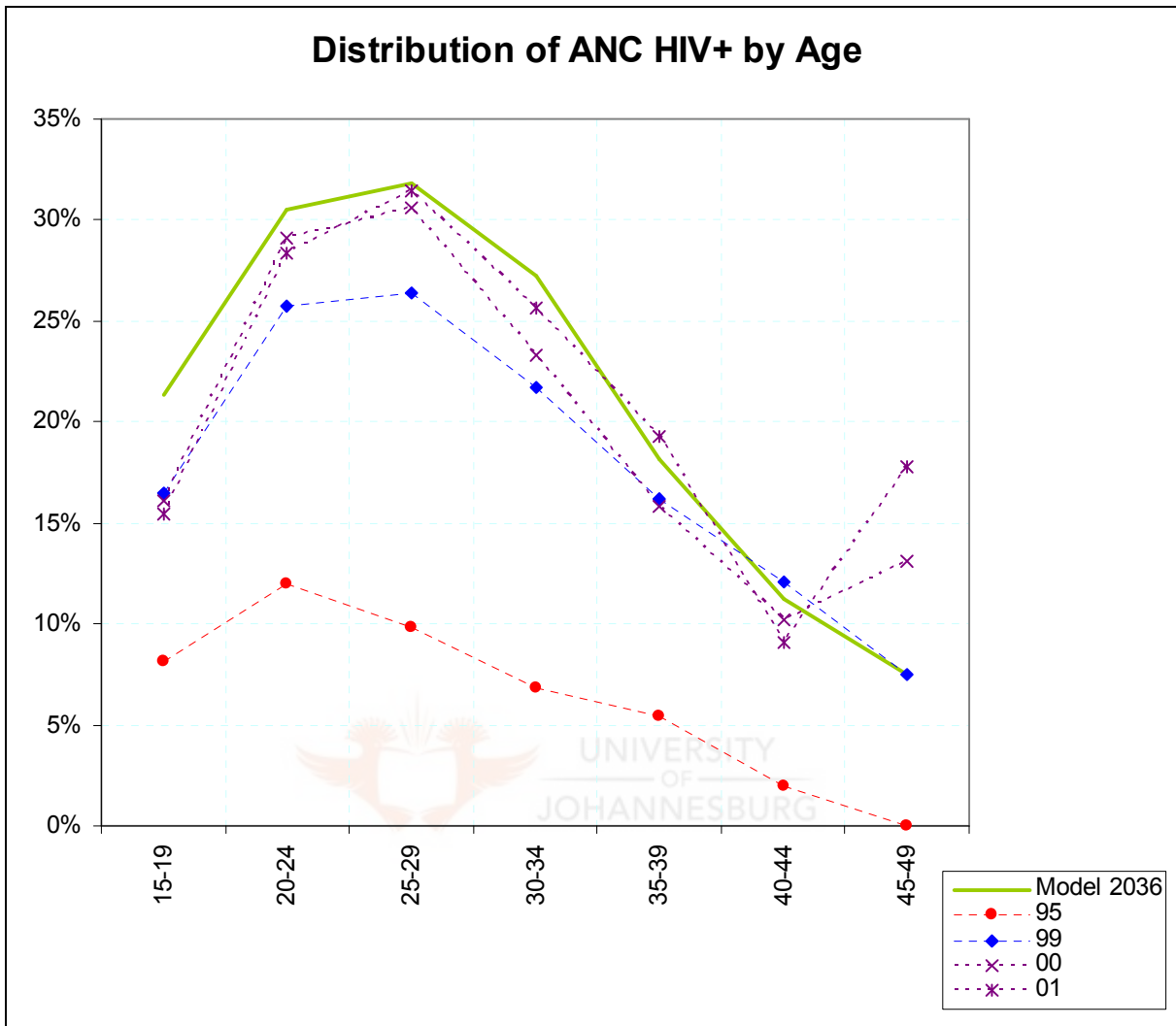
Figure 5.4 Risk Group Prevalence



Source: ASSA model 2000

The more accurate the data on HIV and AIDS in South Africa, the better the position the government would be in to assess and manage the claimed HIV/AIDS epidemic. The annual ante-natal clinic surveys have formed the cornerstone of South Africa's surveillance system for estimating "HIV infection" among the population. Unfortunately, the annual surveys are beset with problems which confound accurate analysis. Since this annual ante-natal clinic survey is the largest and most reliable study using actual blood sampling, it is the basis for most reported HIV/AIDS estimates, including those from UNAIDS/WHO. So it is important to fully understand the nature of the surveys.

Figure 5.5 Antenatal clinic survey participants 1997-2000



Source: ASSA Model 2000 Distribution of ANC HIV by Age

5.5.6 Method of testing in the Ante-natal Clinic Surveys

Prior to 1997, all blood specimens were tested with one ELISA or rapid simple assay, and all positives were retested with a second ELISA/rapid simple assay based on a different antigen. From 1997, all blood specimens were tested with one ELISA (Abbott AxSYM System for HIV-1/HIV-2) and reactive serum was considered positive. The only exception was the Western Cape where due to the low HIV prevalence rate found in previous years, two ELISA tests were used based on a different antigen preparation or test principle. One conundrum of the Western Cape was that while there was general consensus that high rates of TB correlate with high rates of HIV antibody positive reactions, in the Western Cape this was not so. It

had one of highest rates of any province of TB, but the lowest estimated HIV prevalence rate.

Because of this anomaly, reactive samples were re-tested to supposedly eliminate false positives. Discordant results were discarded. All things being equal regarding methodology, why should the Western Cape statistics be so low? The answer of course is that all things are not equal. For example, the Western Cape and the Northern Cape Province, respectively No 1 and 2 lowest "HIV+" prevalence have in common that in October and November when serum is drawn from women attending clinics, are respectively a Mediterranean and semi-desert/desert regions, they are dry while the rainy season is in full flood in the rest of the country. Two of these provinces are malaria hotspots and figure in the first three highest "HIV+" hotspots.

In 2004, confirmatory testing was dropped in the Western Cape, and the HIV+ rate soared.

Ceteris paribus – all other things being equal, is a sound principle. In its absence, correlation is not causation. Nor can absence of evidence be construed as evidence of absence. In the case of the annual surveys there are many variables not under control so it really is not possible to assign causation to any one variable. This includes cross reactions (false positives) HIV antibody screening assays where the list of conditions leading to false positives includes pregnancy, TB and malaria, as well as alcoholic liver and flu vaccines.

(Constantine;2005)

5.5.7 Interpreting HIV Antibody Screening Assay Results

Just how confounding South Africa's ante-natal statistics can be is illustrated by the Henry J. Kaiser Foundation/LoveLife report "Impending Catastrophe" 2001 opening paragraph. This is a prime example of the mystifying gobbledegook that is sprouted and then recycled when it comes to HIV/AIDS:

"The data obtained from the anonymous annual survey of pregnant women attending public sector antenatal clinics is not perfect. There are arguments to suggest both an under and over estimation of the true size of the epidemic from these data."

The argument offered by the LoveLife report for an under estimation is that:

"The fertility among HIV positive women is substantially lower than among uninfected women, so antenatal clinic surveys may underestimate HIV prevalence in women of reproductive age".

Hedging its bets, the LoveLife report's argument for an over estimate is that:

“Children and the elderly are not at substantially lower risk of HIV, nor do antenatal clinic surveys reflect the lower overall risk of men, people who are less sexually active and communities using the private sector”.

The inescapable conclusion from the LoveLife report is that whatever the eventual outcome LoveLife (and the Henry J Kaiser Foundation) will have correctly predicted the actual outcome.

Another indication of the scale of possible inaccurate estimates of “HIV infection” comes from a study by the South African Medical Research Council (MRC) released in June 2000. The study used blood samples obtained from 5,364 individuals working for a South African company employing over 35,000 people in all nine provinces. Groups of workers were randomly selected at 34 sites countrywide. The aim was to determine the prevalence of HIV and associated risk factors among a nationally-based working population comprising all race groups and both sexes. It reported an HIV prevalence rate for white South Africans of 2,1%, coloureds 2,3%, Indians 3,6% and blacks 13,9%. The overall standardised HIV prevalence was 8,6% - compared to 10 - 11% in both the ante-natal surveys and various studies issued by the Human Sciences Research Council (HSRC).

At the time, the MRC study was particularly significant because it was the only survey of estimated prevalence of “HIV infection” in South Africa using actual test sampling outside the annual survey of pregnant women attending public-sector ante-natal clinics. It was also the first published national level data on race groups other than blacks. What was notable about the study was that HIV positive prevalence among whites was found to be about double what was reported from blood blank data and, at a level of over 2% it was among the highest published levels for a general white population in the world.

Nevertheless the results are in stark contrast to ante-natal clinic survey estimates, UNAIDS/WHO and the Henry J. Kaiser Foundation’s LoveLife. In fact the MRC’s June 2000 results were in stark contrast to its October 2001 report. The latter however, did not use actual test sampling. It was a re-manipulation of old data in its case – re-interpreting death certificates to “infer” HIV positivity and AIDS.

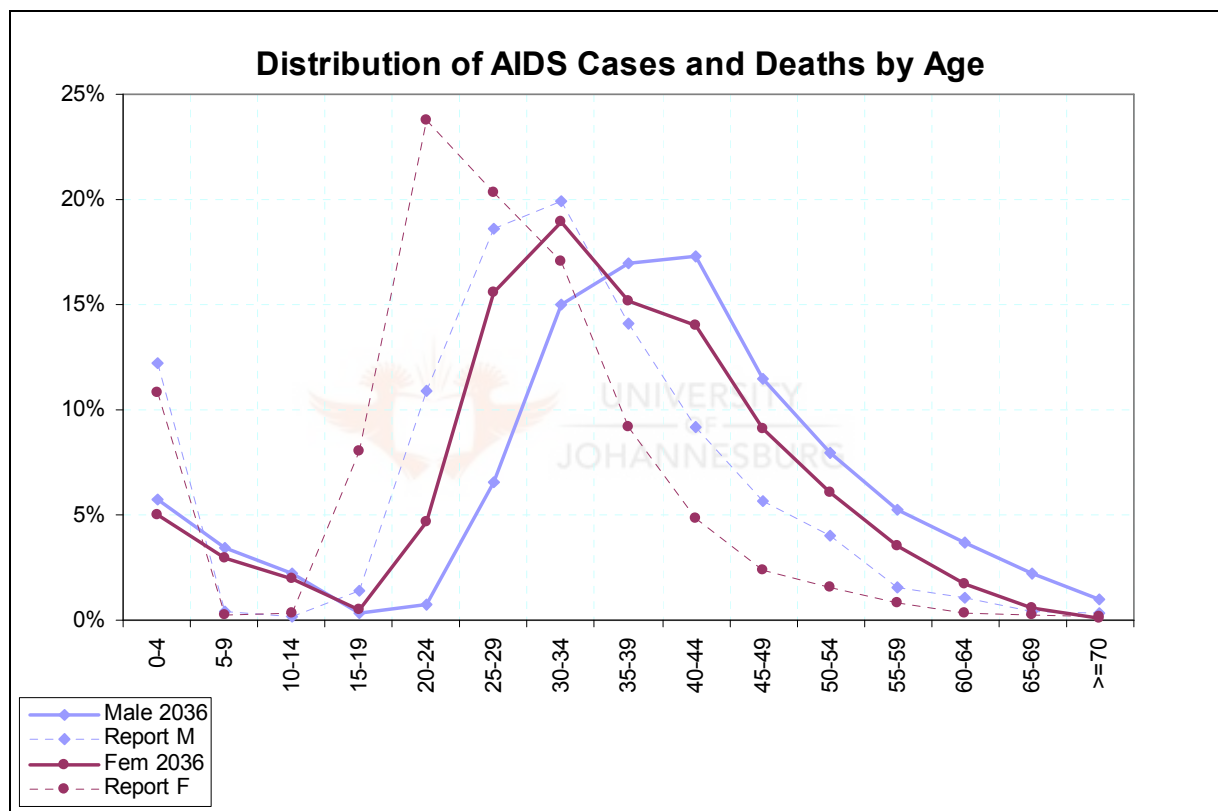
The MRC's 2001 study found an increase in deaths among young adults, especially females, of between 10,000 to 20,000 compared to the year 2000. It may indicate that this age-group generally are reluctant to attend clinics and volunteer to be tested. Equally to may indicate that this was the age-group being targeted by antiretroviral donor efforts - South Africa circa 2000 was now widely known to be awash in antiretrovirals even though they had yet to be rolled out in the public health system. It is possible the increase in deaths may

have been mortalities from toxic drug treatments. The correlation is that pregnant women are targeted due to their regular check-ups at ante-natal clinics. We may never know the answer because proper monitoring, record keeping and reporting of patient history while on antiretrovirals remains a haphazard affair across the globe.

5.6 Deaths and Mortalities

5.6.1 The relationship between HIV and Aids in South Africa

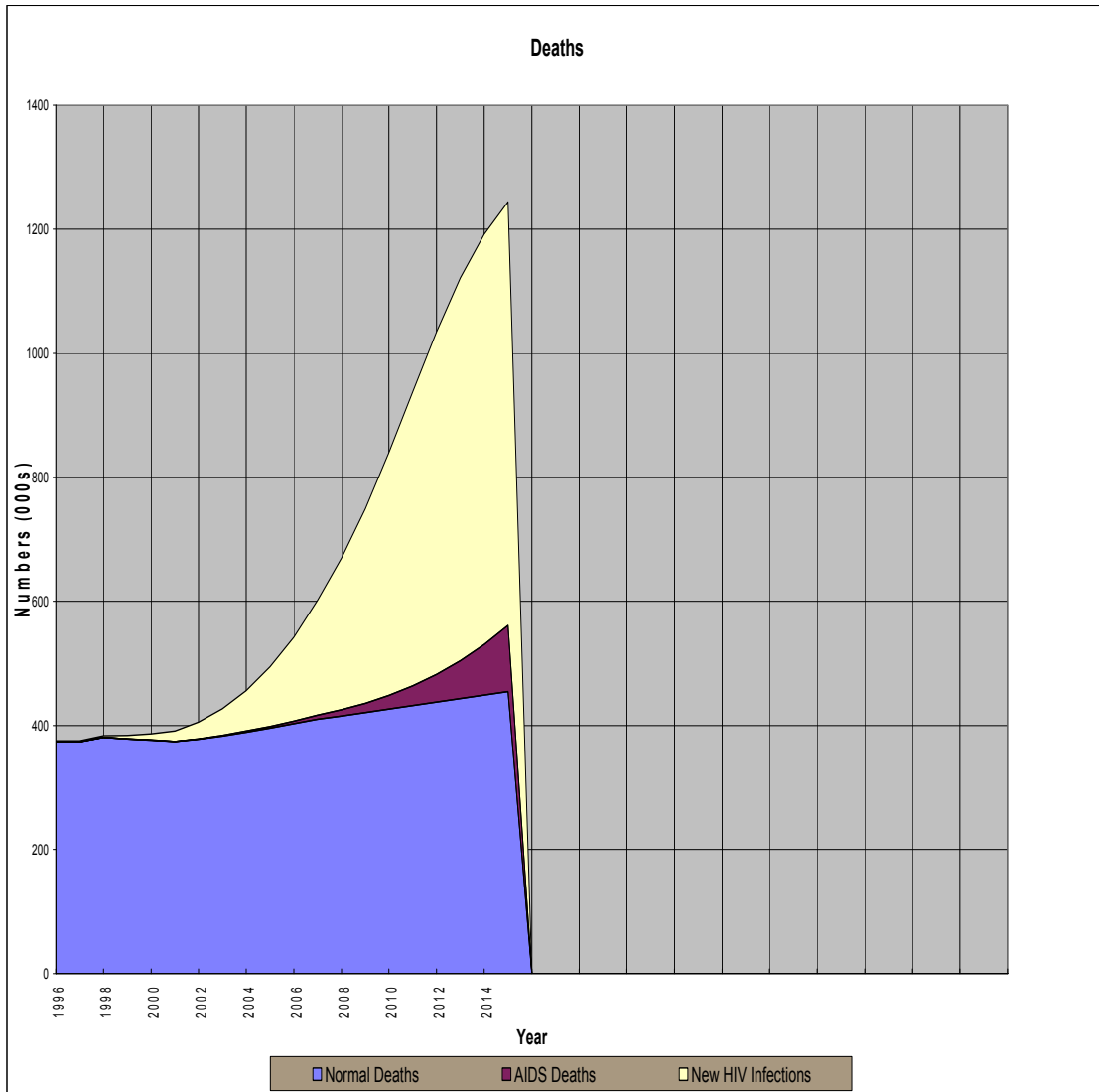
Figure 5.6 Distributions of AIDS Cases and Deaths by Age



Source: ASSA model 2000.

The above graph shows the distribution of AIDS cases and deaths by age. The ASSA model 2000 predicts the distribution of AIDS cases and deaths by Age, and the highest distribution is among 20 - 40 year olds, according to the report from the University of Cape Town AIDS Research Unit based on models of the ASSA.

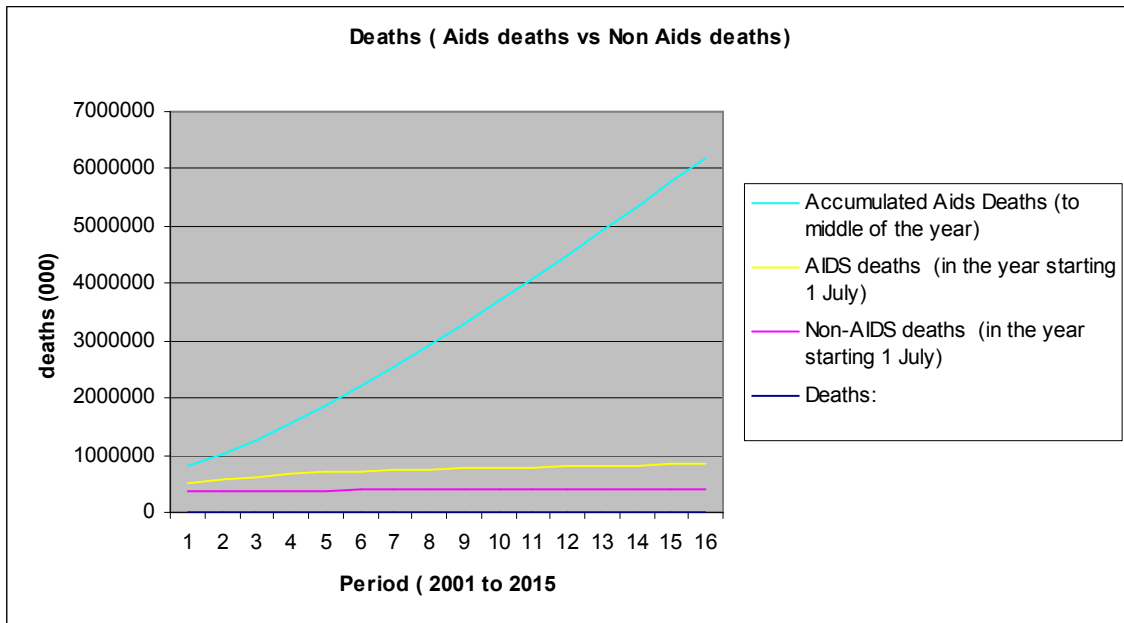
Figure 5.7 Estimated Deaths 1996 – 2014



Source: ASSA model 2000.

According to the ASSA model 2000 deaths are estimated to reach the 1,2 million mark by 2014 a rise of more than 100% compared to the death statistics realised by StatsSA. Note this is a cumulative total of all the diseases under the umbrella of Aids which encompass 34 diseases since inception of reporting Aids mortality and deaths. Thus it is also important to note that all macro economic models have limitations, with the definition of Aids very broad it is difficult to be accurate when classifying AIDS as a direct result of HIV as AIDS may occur without HIV infection.

Figure 5.8 Deaths (Aids versus non Aids Deaths)



Source: ASSA 2000

5.7 Conclusion

The HIV causes AIDS hypothesis rests on the assertion that all AIDS cases are associated with HIV. However, there are no national AIDS statistics based on empirical data of the correlation between AIDS diseases and HIV. One reason for this is that HIV causes AIDS activists have persistently resisted any attempts to make HIV positive tests (interpreted as HIV infection) notifiable. It's one of the most confusing facts related to HIV/AIDS that despite it being promoted as "always fatal" and a "plague/epidemic/pandemic unprecedented in world medical history", it remains on the non-notifiable list. Also, testing is voluntary, compared to syphilis testing which is mandatory at public health clinics.

A critical analysis of data from the DoH annual surveys of HIV prevalence in women attending clinics of the public health system shows that the data is inaccurate due to inherent flaws, untested assumptions and changes to the methodology in successive surveys. Even if one were to subsume that HIV antibody tests can measure HIV infection and such a thing as HIV proteins exist, it is possible and indeed probable that South Africa's actual "HIV prevalence" rates are lower than reported estimates by the annual ante-natal surveys, the HSRC, the UCT AIDS Research Unit and UNAIDS/WHO.

The annual surveys of 15,000 – 18,000 ACTUAL samples at 400 specific clinics each contributing about 40 samples are used to produce provincial point ESTIMATES of what is interpreted as “the prevalence of HIV infection” among pregnant women as well as “age-specific HIV infection” levels. In fact, to be accurate, what is deemed “HIV infection” is merely a positive reaction to antibodies listed in gene banks as HIV proteins, but which have not been established as HIV specific. (The use of surrogate markers in testing for diseases and infections is part of general medical practice. But they remain laboratory markers and interpretation is not standardised.) In the ante-natal clinic surveys, the ACTUAL sample of pregnant women is used to calculate ESTIMATES of provincial and then national “HIV prevalence” for the entire population based on census figures, estimated fertility among women and other algorithms.

The ante-natal clinic survey also estimates the TOTAL number of newborn babies who may be HIV antibody positive and is the basis for the much quoted figure of 1,600 new HIV infections per day.

This means that while the actual sample is 15,000 – 18,000 pregnant women using state health services, the data is interpreted via complex formulae to extrapolate presumed “HIV infection” levels among all women, men, children and the general population. This has consistently been estimated at 10 to 11%, an estimate which concurs with various studies by the HSRC.

The extrapolation from the actual sample to provincial and national estimates involves making a number of assumptions about the relationship between HIV and fertility, the relative proportion of men infected and vertical transmission rates. In short, South Africa faces huge challenges in utilising statistics for economical planning due to the limitation which have been highlighted in this chapter.

The NSP 2007 - 2011 is based on the University of Cape Town's AIDS Research Unit statistics, using ASSA models.

5.7.1 Statistics South Africa

It is important to highlight that ASSA models do not match with Statistics South Africa's "Mortality and Causes of Deaths in South Africa 1997 - 2002" released on the 18 February 2005 which is based on actual death certificate registration with the Department of Home Affairs. AIDS activists dismiss this StatsSA report on the basis that they are incomplete and therefore an under-estimation; and because causes of death have not been properly recorded.

Nevertheless, key findings of the report based on information from 2,88 million death certificates classified according to the World Health Organisation's International Classification of Diseases, revision 10 (ICD-10) were:

The number of reported deaths from all causes (natural and unnatural) increased 57% from 318,287 in 1997 to 499,268 in 2002, which was partly attributed to population growth of 10% and improved death notification from an estimated 70% in 1997 to 90% in 2002.

Tuberculosis, influenza and pneumonia, and cerebrovascular diseases emerged as the leading causes of death.

The proportion of deaths in the age group 20-49 increased, with the proportion of female deaths in this category rising relative to male deaths. Much of the increase is attributable to the rise in reported deaths due to tuberculosis and influenza/pneumonia (the latter combined in one category in ICD-10). In the period TB deaths rose 58% from 22,021 in 1997 to 59,951 in 2002, and influenza/pneumonia 44% from 11,503 to 37,637. Expressed as a proportion of all causes of death TB rose from 6.9% in 1997 to 12% in 2002 and influenza/pneumonia rose from 3,6% to 7.5%. The remaining leading cause of death cerebrovascular diseases decreased slightly from 5.3% in 1997 and 5% in 2002. The number of deaths attributed to HIV and AIDS as reported by doctors, who remain the only people legally entitled to sign death certificates was 6234 (1997), 7266 (1998), 9925 (1999), 10420 (2000), 9212 (2001) and 10425 (2002). Given the publicity and scope of the estimated AIDS pandemic a total of 53,482 for the period is an anomaly. It is further underlined by the fact that expressed as a proportion of all natural deaths, HIV/AIDS remained static at about 2% for the period.

According to a study by the Medical Research Council (MRC) in 2004, the numbers of deaths attributable to HIV/AIDS over the period 1997 to 2002 was estimated to be 847,079 (Dorrington. 2004). The estimated HIV infection in the South African population according to the two biggest surveys (ANC 1990 -2005 and Nelson Mandela Foundation/HSRC 2002) is an agreed 10 - 11%. This translates to about 4 million people being infected in 1997. Given an average five years from infection to death about 50% (2 million) of these should have died by 2002. Even if one takes an average 10 years from infection to death then 25% (1 million) should have died in the period 1997 -2002.

One of the most quoted statistics of the HIV/AIDS epidemic is that 600 - 1000 people die every day or 218400 - 364000 a year. Total deaths due to **ALL** natural causes were reported by Statssa only for 1997, 1999 and 2001, namely 264,285, 328,671 and 401,812, which could indicate a vast over estimate by the HIV/AIDS industry.

A MRC study published in December 2003 estimated that deaths in the 0-4 year old age group due to HIV/AIDS in 2000 as 106,070 (MRC/Unicef 2003). Whereas the only comparable figure in the StatsSA report is deaths from all causes (natural and unnatural) for the 0-4 year old age group in 2000 to be 40768.

Another sign that all may not add up is that one would expect deaths in the provinces with the highest number of people estimated to be HIV infected, namely KwaZulu-Natal and Gauteng, to have risen disproportionately in terms of deaths from AIDS compared to other provinces. This is not the case. Both provinces have remained static in terms of the percentage of HIV/AIDS deaths reported and in the years 1997, 1999 and 2001 HIV/AIDS figured in the top ten causes of death only in 1999. There are three possible explanations for the low numbers of reported HIV and AIDS deaths in the StatsSA report:

Doctors could be extremely reluctant to record HIV as a cause of death, even when they know it is a cause. Misclassification has been the view of the majority of HIV-causes-AIDS promoters, as expressed in a major report in the Journal of the International AIDS Society (Groenewald: 2005). Their view is that due to stigma doctors are saving families from public embarrassment by purposeful misclassification without reference to HIV. However, death certificates are confidential documents. A copy is given to the family and the only other parties which see a certificate are undertakers and the officials of the Department of Home Affairs. The question is: Would doctors open themselves to being struck off the SA Health Professional Council roll by wrongly and illegally, filling out death certificates?

Given the debate over HIV and AIDS in South Africa since the high-profile stance taken by the president of the country, Thabo Mbeki, doctors are being honest about the uncertainty surrounding HIV as a sole and sufficient cause of a disease by definition. In other words, doctors on a large scale may be sceptics.

A third explanation is that due again to the publicity surrounding President Mbeki's stance on HIV and AIDS and his refusal to be drawn in anyway since April 2002 into commenting on, apologising for or retracting his views, people are refusing to take HIV tests. Therefore the doctors would have no option but to enter the cause of death as other than HIV-related. This would also account for the less than enthusiastic take-up of antiretrovirals in the public health system (PHS) since their roll-out in April 2004 - an experience which has been echoed at Anglo American where comparatively few of the estimated infected work force have taken up the option of VCT and ARV treatment.

In interpreting the StatsSA results, most commentators combined all diseases listed under the Bangui definition of AIDS as HIV-related. Coverage was limited to dire warnings of catastrophe if antiretrovirals are not more widely distributed.

One explanation for the disproportionate rise in deaths among young adults, especially females in the 20-49 year old age group, is that part of the increase could be because this group has the most children registered for government child support grants. This means the group would have the most complete records of any other group. Also, the disproportionate rise in female deaths could be as a result of their attendance at ante-natal clinics, which would again imply a more complete record. This interpretation is supported by the fact that an estimated 98% of black pregnant women attend ante-natal clinics and deaths among all population groups with the exception of those classified as in the Apartheid era as "blacks" remains virtually unchanged.

Most of the increase in deaths in the 20 to 49 year old group is attributable to the rise in TB and influenza/pneumonia. Expressed as a proportion of all deaths across all age groups, deaths from TB rose from 11.9% in 1997 to 19% in 2002 and influenza/pneumonia from 4.1% in 1997 to 9.3%. A possible explanation for this overall rise could be that word is out on the African grapevine that these diseases equate to a diagnosis of HIV/AIDS and people with these symptoms are simply not checking in to clinics. If this is the case then linking especially TB with HIV would be the single most tragic consequence of the HIV/AIDS era.

Since antiretrovirals were rolled out in the PHS only in April 2004, there are as yet no statistics on the prognosis of these patients or the number of deaths. An article in the British Medical Journal (BMJ) reported that in one hospital in KwaZulu-Natal of the 300 people on ARV treatment since May 2004, 20 had died in the seven months to end January 2005. (Sutherland 2005) DoH Media Liaison Officer Maupi Monyemangene on 6 October 2005 in answer to a query (Allen 2005) could only report that in the Western Cape:

- Out of a total of 4251 patients enrolled in 3 months, a total of 207 (4.8%) patients died.
- Out of the total of 2715 patients enrolled in 6 months, a total of 196 (7.2%) patients died.
- Out of the 914 patients enrolled in 12 months, a total of 114 patients (12.2%) patients died.

If ARVS were being rolled out according to the procedures for monitoring and reporting laid out by the Department of Health, the facts would be forth coming. Unfortunately, this is not yet being realised, as the Minister of Health Dr. Manto Tshabalala-Msimang was forced to admit during parliamentary media briefings in February 2005 when she was unable to give

any figures on ARVs because "patient information is not up to scratch". She said: "We are working in the dark and you just give the medicine and hope God will be on your side". (Health-e News 2005) since 2005 no information beyond the total number of people initiated on ARVs is known. By may 2006 according to the DoH this was 240,000.



CHAPTER 6

THE IMPACT OF HIV AND AIDS ON THE SOUTH AFRICAN ECONOMY.

6.1 Introduction

South Africa is said to be the epicenter of the HIV/AIDS epidemic with the highest HIV prevalence rates in the world.

Statistics from the National Strategic Plan (NSP) 2007 - 2011 estimates 5,4 million people were living with HIV in South Africa in 2005, with 18,8% of the adult population (15 - 49) infected. Women are disproportionately affected accounting for about 55% of HIV positive people. According the HSRC Household Survey (2005), people in rural and urban informal settlements are most at risk. According to the ASSA, 350,000 deaths from AIDS occurred in 2005, amounting to about 1000 deaths a day. A massive 65% of the 40 million people estimated to be HIV infected in the world, live in Sub-Saharan Africa where the severity of the epidemic is linked to the region's poverty, low status of women and other socio-economic factors. Unlike western developed nations where the epidemic is largely contained to specific risk groups (MSM and IDUs), in South Africa the epidemic is generalised and sexual networking in the population sustains the epidemic. An estimated 500,000 new infections occurred in 2006, according to the 2005 HSRC Household Survey. Black South Africans have an HIV prevalence rate ten times higher than people of other skin colours. Race, is therefore, a significant risk factor for HIV/AIDS, though the NSP does not mention the word.

This section aims to review the current literature and evidence of the impact of HIV and AIDS on the South African economy. Claims will be measured against benchmarks in an attempt to interrogate the reliability of the statistics which form the basis of policy formulation, budget allocations for treatment, care and prevention strategies.

Before HIV and AIDS overtook everything else, the biggest threat to the economy, survival of all species and the planet was exponential human population growth. In the recent past if a country managed to slow its rate of population growth down it made headlines as a positive step. However with the advent of the HIV and AIDS pandemic the opposite holds true. Population development and all the programmes under it's umbrella as was established at the World Conference in Beijing in 1994 such as education and empowerment of women, are virtually off the news. Nowadays, World Population Day has been overtaken by World

AIDS Day. In the HIV and AIDS era declining population growth rates due to rising levels of education and empowerment – especially among women – and efficient parenting programmes have become declining fertility and rising deaths due to HIV and AIDS. There is no reference to improved economic and education levels which globally lead to smaller families and in some countries negative population growth.

Current approaches, assumptions and results vary greatly in the macroeconomic models employed in estimating the impact of HIV and AIDS on the South African economy. Nevertheless most of these models convey the same message: The cost of HIV and AIDS to South Africa will be significant; the country faces a doomsday scenario; the impact on population and labour supply will have a huge negative effect the economy. The accuracy of the models and the results thereof can be faulted for a number of reasons; namely, demographic projections do not match empirical evidence on the micro economic impact of the epidemic; shortcomings that can be argued to translate into both under and overestimation, especially due to the sampling utilised by models. This varies from manipulating data obtained from ante-natal clinic (ANC) surveys which use a sample of about 18,000 pregnant women attending clinics in their current pregnancy; to small empirical samples varying from 1000 to at most 12000; and relying purely on questionnaires.

This chapter aims to critically analyse the models employed thus far especially the BER (2001), ING Barings (2000) and the ASSA (2000). All these models are primarily based on the ANC surveys of samples from 18,000 pregnant women and the data is then extrapolated to the entire population to forecast the impact to the economy. The study does not purport that the HIV and AIDS epidemic will not have an impact on the economy, however it aims to highlight the anomalies presented and the limitations of the macroeconomic models have, especially the fact that there is little empirical available to support the projections made by the current models.

6.2 Macroeconomic modelling of the impact of HIV and AIDS

The primary focus in HIV and AIDS modelling is demographic, behavioural and epidemiological rather than empirical in a nature. Most macroeconomic models of the economic impact of HIV and AIDS all require demographic inputs, i.e. actuarial-based estimates of the impact of the HIV and AIDS epidemic on the size and structure of the population. To date, most of these models have employed either the first demographic projection of the Metropolitan-Doyle model as later adopted and revised by various Actuarial

Society of South Africa (ASSA) models. The extraordinary impact to the economy due to HIV infection and the development of AIDS and ultimately full blown AIDS, is based on the assumption that HIV infection = AIDS = DEATH. Empirical research is scarce and economic forecasts are largely based on mathematical models. The most common model, the ASSA model, predicts prevalence and estimated deaths by age and race. It looks at an AIDS scenario and a Non-Aids Scenario. The two other studies often quoted on the macro economic impact of HIV and AIDS are the ING Barring 2000 model and the BER 2001 Model. All of these predict that HIV and AIDS will have a severe impact on the following:

6.2.1 Physical Capital

The accumulation of physical capital is a function of the savings rate of the economy. AIDS epidemic tends to reduce household savings both in absolute terms and also as a percentage of household income. Budgets are affected by increases in costs associated with AIDS-related illnesses. Other areas that may be impacted are Pension Funds, insurance pay outs, as a result of early retirement and premature death as a result of AIDS-related illnesses. However this is flawed as the major risk group in HIV and AIDS is semi- and unskilled labour. The majority of these groups is mostly not formally employed thus does not contribute significantly to the economy to have a dire impact on the national savings.

6.2.2 Human Capital

The impact of HIV and AIDS on human capital is a widely debated issue. As noted above the highest HIV and AIDS prevalence is on poverty stricken communities comprising the semi- and unskilled labour force who are not in formal employment. The biggest impact may be on specific sectors, such as the mining industry, which has a high HIV prevalence, In general, businesses may face higher direct costs as a result of HIV and AIDS, but the impact would be highest where the labour force is comprised of large numbers of unskilled or semi-skilled employees. The direct cost is HIV and AIDS intervention programmes especially where a company provides ARV treatments for employees. Again, the impact would be significant where the labour force is not covered by Medical Aid Schemes nor have the resources to look after their own health needs. This includes the mining industry. Construction and agriculture which is characterised by seasonal and part time labour. Other direct costs, such as training and recruiting of new staff, would also have an impact.

The deployment of ARVs is said to increase life expectancy which should cut down on premature deaths. However, indirect costs such as loss of turnover and profits due to increased absenteeism and additional sick leaves may be a threat. According to predictions

the HIV/AIDS epidemic will affect human resources supply and demand in all sectors of the economy, with severe impacts in some sectors. On the supply side, infected individuals will eventually become chronically ill, with increased absenteeism, lower morale and productivity. However the impact will be most severe among the poor where the death of the bread winner could have a disruptive impact on traditional family especially minor children who are ultimately forced to leave school. This would have a long term effect on the education standards of South African youth - the future labour force. If more and more parents die, in an already poverty stricken community this would significantly impact on government budgets, especially in the health, social and education clusters. Social Grants would have to increase. Education budgets would have to increase as more and more learners are unable to pay school fees. Ultimately this would impact on income taxes, which would increase to cope with rising dependency on the state.

6.2.3 Social Capital

HIV and AIDS impacts on business by increasing expenditure and reducing revenues (World Bank 1996;6) this includes HIV and AIDS intervention programmes and cost of replacing and training employees. In South Africa this would happen in large numbers in specific sectors - those employing semi- and unskilled labour. Poverty is likely to worsen as the epidemic takes its course, because expenditure on basic essentials like food comes under strain with an increasing allocation to medicines, and the rate of recovery is lower than in affluent households. In the affluent and skilled labour segment AIDS may be delayed by employing different strategies because resources are available. However it must be stressed that empirical evidence is not available.

6.2.4 Demographic Impact

Gauteng being the business hub is now home to 20% of South Africans. A great number of people have made and continue to make Gauteng their permanent home. Thousands more have set up temporary and secondary homes due to work opportunities. So the province would be disproportionately affected by the HIV/AIDS epidemic.

Mobility and migration not only increases risk of HIV infection of mobile individuals, but also sending and receiving communities which are often informal settlements. People who engage in work seeking, mobile forms of work or migrant labour are at increased risk of HIV infection as a product of the higher likelihood of having multiple sexual partners, higher exposure to sex in exchange for money (International Organisation for Migration 2006). Mobile workers include informal traders; sex workers; domestic workers; seasonal

agricultural workers; migrant workers - mining, construction, military/security and agricultural workers; long distance truck, bus and taxi drivers.

The demographic impact of HIV/AIDS is apparent in statistics. According to the NSP, mortality rates in 1990 suggested that a 15 year old had a 29% chance of dying before the age of 60. But mortality rates in 2006 suggest that a 15 year old had a 56% chance of dying before reaching 60.

Other statistics quoted in the NSP and supplied by ASSA include:

- 1,8 million AIDS deaths in South Africa since the start of the epidemic
- Around 740,000 deaths occurred in South Africa in 2006 of which 350,000 were due to AIDS, approximately 950 AIDS-related deaths per day.
- Approximately 230,000 individuals were receiving ARV treatment with a further 540,000 sick with AIDS and not receiving treatment.
- 1,5 million children under the age of 18 were maternal or double orphans and 66% of these children were orphaned due to HIV and AIDS.

6.3 Analysis of Available Models and Predictions

According to the ASSA model 2000, HIV and AIDS affects the most economically active age groups, thus reducing both the quality and quantity of the available labour force. The impact of HIV and AIDS on workers - skilled versus semi- or unskilled workforce is largely not differentiated. Shorter life expectancies are said to be raising costs of schooling and training, thereby reducing the short-term returns (Bonnel: 2003). Business is said to be losing skills due to HIV and AIDS. This should have a negative impact to business where the shift is to more spending on developing HIV and AIDS policies in the work environment and earmarking more funds for this end instead of paying dividends to shareholders or bonuses to healthy employees.

In terms of the economy, the NSP devotes one solitary paragraph to the issue. It quotes the International Labour Organisation 2006 that 3,7 million labour force participants aged 15 - 64 years were living with HIV/AIDS in South Africa, then states: "There is currently no clear evidence on the actual economic impact of HIV and AIDS in South Africa."

The reality is that sero-positive HIV prevalence differs between skilled, semi-skilled and unskilled, as well as in racial groups as per ASSA models. As such, the mining industry which is comprised of a large majority of black male workers who have a much higher sero-positive HIV prevalence as a race group than any other would be much more seriously

impacted than for example the stock broking industry. Individuals that utilise the public health clinics, including ante-natal clinics, tend to come from lower income or poverty stricken communities which cannot afford private clinics. As most statistics come from public health clinic surveys conducted yearly on approximately 16,000 - 18,000 exclusively to pregnant women, their applicability to other sectors is questionable.

It has been predicted that HIV and AIDS will impact on the national savings, thus reducing the household income. The government's budget increases yearly due to the demands of increased subsidisation of education, increased allocations to health services and social grants that are needed by individuals that are infected and affected by HIV and AIDS.

Other expenditures, such as pension and provident payments to individuals who are forced to take early retirement and premature deaths due to HIV and AIDS would erode pension and provident funds.

The fiscal deficits would tend to worsen; few countries will be able to offset the fiscal cost of HIV and AIDS epidemic by cutting other expenditures or raising taxes. (Bonnel: 2000) But in South Africa the Minister of Finance Mr. Trevor Manuel has released a report on the national fiscus projected to 2009. South Africa does not seem to be fulfilling dire predictions - the national GDP has been on the rise and taxes have not been increasing instead the opposite holds true for this country with tax receipts at an all time high, even exceeding the treasury's own projections. Part of this may be attributable to increased efficiency at South African Revenue Services, but equally it reflects a boom not bust economy growing at a satisfactory rate.

The social capital is also being affected by HIV and AIDS. Being infected with HIV and dying of AIDS still holds a stigma in the world and the South African community, thus for individuals to come out and take HIV tests is a struggle. The most affected by the pandemic are children who continue to loose their parents to the different diseases under the umbrella of AIDS. It is noted that businesses are facing increased levels of absenteeism and having to recruit replacement skill as their staff fall ill and subsequently die from the different diseases under the umbrella of AIDS. Companies in specific sectors are facing increased training, healthcare, medical insurance, sickness, burial payments and increased life insurance payments. If the ASSA assumptions are to be taken into consideration there are specific sectors in the economy that are impacted significantly by HIV and AIDS i.e. there have been studies that show that the prevalence is the highest in the mining sector, and industrial sector. The major correlation is that in those sectors, the majority of employees are black Africans living close to or below the poverty line.

This paper does not aim to evaluate the demographic projections employed in these macroeconomic models. Yet, it is important to point out that these projections are key to the results of the modelling and that the demographic projections in turn rely very much on the available HIV prevalence data. As mentioned above, most of these models employ the demographic projections. According to the 1996 census, for example, 62.3% of the South African labour force was semi- or unskilled, whereas 27.5 and 10.2% respectively were classified as skilled and highly skilled (BER, 2001: 11). Also it has been predicted that the population would be declining steadily from 2000 due to AIDS, however according to Statistics South Africa the population has increased 10% between 1996 and 2006.

The Doyle-Metropolitan and ASSA (2000) actuarial models, are calibrated with the aid of the HIV prevalence data from the antenatal clinic data reporting on HIV prevalence amongst pregnant women attending public antenatal clinics. This data are then fitted to national population data. Outside of the obvious limitations of deriving national HIV prevalence from such limited empirical base, which is the result of the lack in South Africa of large-scale, high quality, Van den Heever (2003) is also critical of the focus in the early actuarial modelling on individual firms (the current suite of models include various sub-modules for modelling the impact on workforce populations, including the Momentum model, Lifeworks model, Actuarial Solutions model, the KNOWAIDS model) and pension funds.

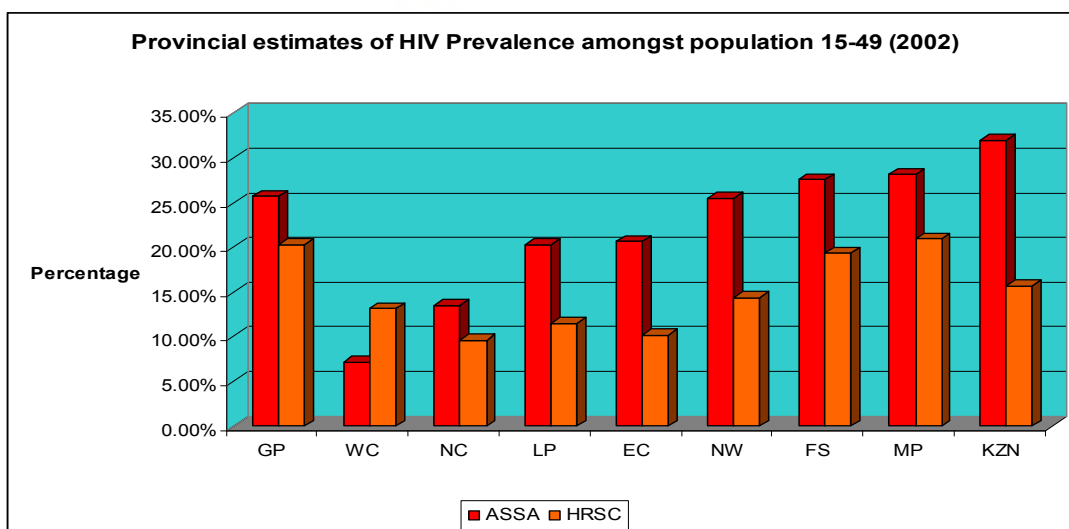
Many researchers lists a significant number of assumptions in current demographic models with no or weak empirical basis, including various assumptions about certain epidemiological aspects, migration patterns, patterns in sexual behaviour, and health. However the lack of behavioural and prevalence data by socio-economic status indicators other than crude job categories preclude meaningful economic analysis. In short, demographic impacts are not modelled by employment status, education or sectorial basis, thus it is done by job category, which represents a crude indication of skill level. It is furthermore unclear how changes in employment by age, gender and race is likely to affect HIV prevalence in the workplace, which means that we simply do not know how exactly the epidemic will affect labour supply and therefore employment (Ford; 2002) Socioeconomic status is a key determinant of the risk of infection and is manifested in characteristics such as job category, income, education, occupation, place of residence, or employment status. In the absence of good HIV prevalence data by these strata, it remains difficult to accurately model the macroeconomic impacts of HIV/AIDS (Ford;2002) puts it, the "literature shows us that we have reasonably good information about the rate at which the epidemic is developing, but insufficient information on the rate at which the epidemic is destroying the economic and

development potential of the economy, leading to substantial uncertainty about the macroeconomic impact of the epidemic".

The existing macroeconomic models, furthermore, seem to model the impact of the epidemic based mainly on ASSA or HSRC reports without acknowledging that data from these units differ considerably.(See Figure 6.1)

It is true that the HSRC 2002 study for the first time reported HIV prevalence by place of residence, education and socio-economic status. However, one may argue that the modellers were simply doing the best with the available data and that the emphasis should be on doing the type of empirical work necessary to fill the gaps in our understanding of the dynamics of the HIV/AIDS epidemic. However debate on the reliability and validity of the HSRC (2002) findings in particular, but not limited to it, are legitimate, even imperative. The fact of the matter is that different (and in this case much lower) HIV prevalence estimates reported in the HSRC study compared to alternate prevalence studies based on data from ANC surveys, implies that the estimated macroeconomic impact (and reduction in total labour supply and labour productivity in particular) of the HIV/AIDS epidemic is likely to be exaggerated.

Figure 6.1 Provincial Estimates of HIV Prevalence amongst Population aged 15 to 49 (2002)



Source: Van den Heever (2003: 39).

6.3.1 Macroeconomic Forecasts (Model Generated)

The ASSA models which are widely used in South Africa present comparisons between AIDS and Non-AIDS scenarios. This becomes the foundation for projecting the impact on the economy. In terms of macroeconomic impacts of HIV and AIDS the baseline is assumed on economic growth, poverty and inequality, direct and indirect costs, labour markets and savings and investments. (BER 2001 and ING Barings 2000). Both present projections of impacts on household income and expenditure, government spending and budgets deficits, trade and balance of payments, GDP.

Table 6.1 Percentage Point difference between the AIDS and Non-AIDS scenarios in the ING Barings (2000) and BER (2001) models

Macroeconomic Parameter	ING Barings (2000)	BER (2001)
	2002 - 2015	2002 - 2015
A. Economic growth		
Annual real growth in GDP	-0.6	-0.5
Average annual grow in real per capita GDP#	0.9	0.9
B. Investment		
Interest rates(% point difference in the level)	0.6	2.9
Annual real growth in Gross Domestic Fixed Interest	0,0	-1.2
C. Employment		
Average annual total population growth**	-1.5	-1.3
Average annual growth in the total labour force***	-1.2	-1.6
Average annual growth in employment****	-0.6	-0.6
growth in unemployment rate(i.e. %of labour force without formal jobs)		

Source; Intrassa (2002)

The above table summarises the main macroeconomic impacts of HIV and AIDS epidemic as projected with the aid of ING Barings (2000) and BER (2001). This shows that in the AIDS scenario the annual real GDP will drop by -0, 6 % between 2002 – 2015.

In contrast to this information, the following graph shows that the real GDP has been on the rise between the periods 2002 – 2005.

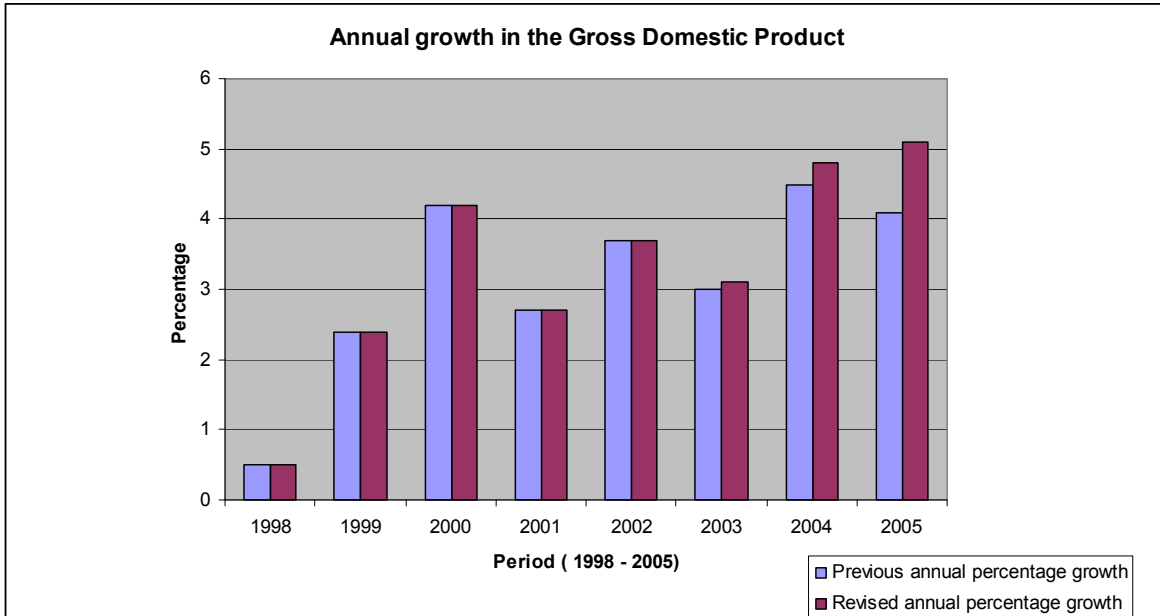
Figure 6.2 shows the annual percentage growth of the Real Gross Domestic Products. The figures are contradictory for the period 2002 – 2005. Real Domestic Product has been on the rise and the South African economy as expected grew 4,5% in 2006.

6.3.2 The Impact of HIV/AIDS on Gross Domestic Product (GDP)

The aggregate level of real GDP (for reasons explained elsewhere in this paper) is projected to be lower in the AIDS scenario than in the no-AIDS scenario by all the macroeconomic models. Ford *et al.* (2002) reports estimates from other, earlier studies as putting this figure at between 0.3% and 1.0% per annum. Burger (2001) projects that, by 2015, the level of real GDP will be 16, 6% lower than in 2002, while Arndt and Lewis (2000) put this figure at 17% by 2010. Arndt and Lewis (2000), for example, attributes 45 and 34% respectively of the difference between real GDP in the AIDS and no-AIDS scenarios by 2010 to deficit spending by government to finance AIDS-related expenditures and to lower total factor productivity. The reduction in labour supply accounts for 8% and 13% of the differential is attributed to lower factor productivity.

Both the ING Barings (2000) and BER (2001) models estimate that per capita incomes might rise as a result of HIV/AIDS. This can be attributed to the fact that both models assume that the decline in income will be less than the decline in the population. According to BER (2001), per capita GDP is projected to be 4,2%; 9,7% and 14,8% higher in 2005, 2010 and 2015, respectively, while ING Barings (2000) also projected that per capita GDP will increase. Arndt and Lewis (2000) on the other hand predict a decline in per capita income. They forecast per capita GDP to be between 4% and 13% lower over the period 2005-2010 (Arndt and Lewis, 2000)

Figure 6.2 Annual growth in the Real Gross Domestic Product



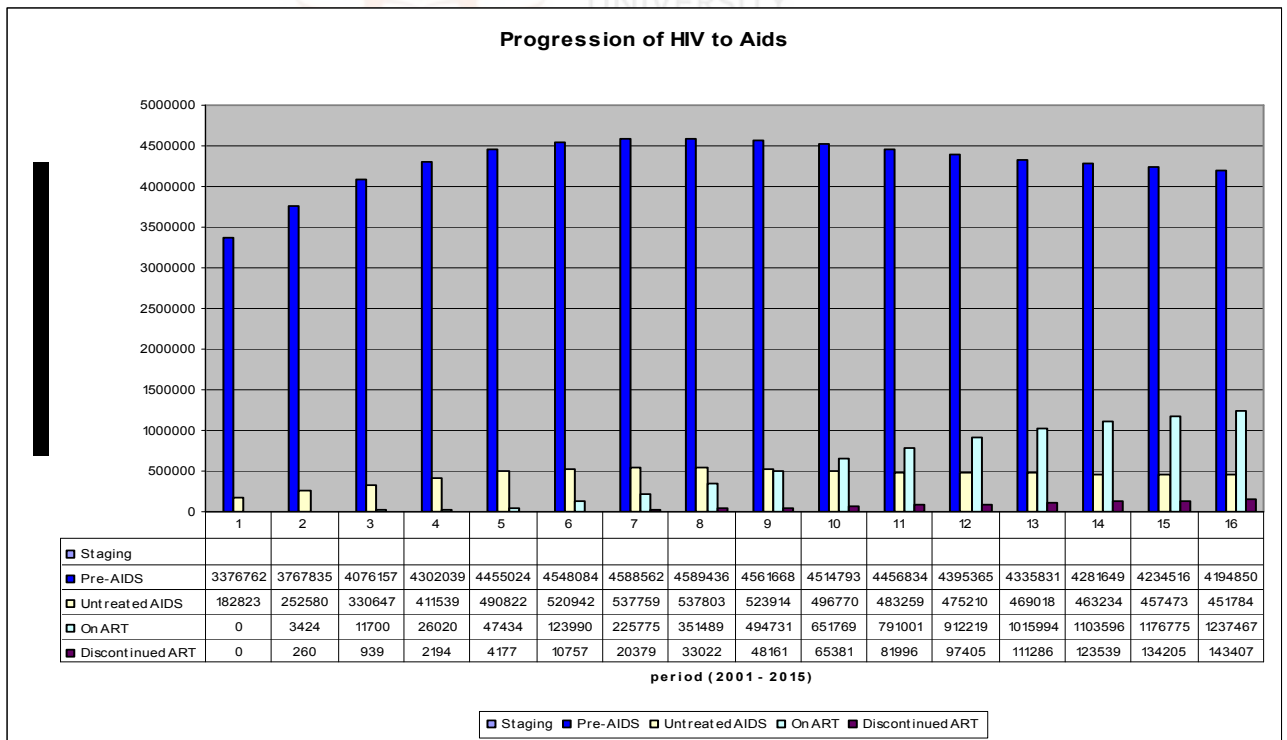
Source: Stats SA

The growth rate for the period 1998 – 2002 remain unchanged, thus for 2003 it is 3,1% revised from 3, and 0% and for 2004 it is 4,8%. This graphical illustration shows a different picture to that being projected by macroeconomical models as bases for the HIV and AIDS impact. Growth in real domestic expenditure outpaced that in real domestic production over the period to the present, continuing the trend which began in 2001. All the components of domestic final demand recorded vigorous increases over the past year-and-a-half to 2006. Real disposable income of the household sector maintained a robust rate of increase, buoyed by rising employment and wage levels, higher transfers from government to households in support of the poor, and some tax relief to individuals. Together with the lower levels of interest rates and attractive prices brought about by a relatively strong exchange value of the rand, this contributed to briskly rising real final consumption expenditure by households, especially on durable and semi-durable goods. Real final consumption expenditure by general government also rose as the delivery of various services was stepped up, with the procurement of high-value military items occasionally adding a fillip to government spending. (Reserve Bank; Annual Economic Report)

6.3.3 Labour and Total Factor Productivity

According to mainstream HIV causes Aids dogma it takes approximately 8 – 10 years for individuals who are HIV positive to develop AIDS. The majority researchers have subsumed the median lifespan of sero – positive workers to be eight to ten years, though this remains an untested statistic in terms of empirical research, and is based on demographic and epidemiological data. (See Figure 6.3) Full blown AIDS especially affects the last 2 years of a sero-positive individual's output. Arndt and Lewis 2000 cite that Aids afflicted workers are half as productive as their colleagues that do not have AIDS. While other researchers like the BER (2001) model cite that productivity of AIDS afflicted (skilled and unskilled workers) is reduced by 40%. The ING Barings (2000) model suggests that the labour productivity of a sero-positive worker is reduced by a third. The Arndt and Lewis (2000) and BER (2001) models assume that the total factor productivity will be reduced severely by the HIV and AIDS epidemic. Limitations of current research is that while the HIV and AIDS will impact on the economy the situation is not nearly as dire as has been predicted for labour and total factor to productivity.

Figure 6.3 Progression of HIV to AIDS



Source: ASSA model 2000; Figures are a mathematical extrapolations.

While AIDS is a serious condition, the introduction of proper care, promotion of general healthy lifestyles, nutrition and ARVs could delay the period from infection to full blown AIDS longer than current assumptions. Another fact of the HIV epidemic is that not all cases of HIV end up in AIDS. These predictions do not factor in the margin of false positives among population being assessed and comparisons between the productivity of sero-positive workers and sero-negative colleagues have not been done.

The other point of departure is that the models are not specific as to which category the estimated HIV infected individuals fall into. South Africa comprises an estimated 12 million individuals who are not employed. How many of those individuals are HIV infected and what percentage they contribute to the labour force in the country on an informal or part time basis is also not factored in.

Thus the impact as originally envisaged circa 2000 may not be as bleak. The following summarises the impact of HIV and AIDS:

- Resources currently directed towards the epidemic by government, businesses, NGO's involve a high opportunity cost.
- Staff turnover is higher in an AIDS scenario compared to a Non-AIDS scenario.
- The impact of HIV/AIDS on higher skills groups is likely to be overestimated (Van den Heever, 2003), implying smaller labour supply reduction at this level of skill than is suggested in current models and a subsequent overestimation of the economic impact of the epidemic via upward pressure on costs resulting from skills shortages.
- It is possible that reductions in domestic labour supply may be met by immigration, particularly in lower skill bands thus implying smaller reductions in labour supply at this level of skill. High unemployment rates mean that the effect of HIV/AIDS on labour supply in South Africa may not be pronounced (Ford; 2002).
- HIV prevalence rates differ substantially across skill groups and the epidemic will therefore have a differential impact on labour force growth by skill category (Arndt and Lewis, 2000, BER, 2001, ING Barings, 2000). In South Africa there is an inverse relationship between HIV prevalence and skill class, with unskilled and semi-skilled workers having much higher prevalence rates than their skilled or highly skilled counterparts. Due to this fact and the current composition of the labour force, projected losses in the labour force at lower skill levels far exceed losses at higher skill levels (Russell, 2002). However, the epidemic is also likely to exacerbate the skills shortage in the country (Ford. 2002). In aggregate terms, the macroeconomic models (based on

assumptions about prevalence and morbidity and mortality effects by skill level) all assume that the total labour force or supply will decline and that labour productivity will decline due to the HIV/AIDS epidemic.

- As a result of the relatively high capital intensity of the economy, the possibility for idling capital is great. The high capital intensity of the local economy also implies that training needs in South Africa are much higher than in the rest of the Sub-Saharan Africa;
- Transaction costs involved in the enforcement of contracts are also likely to increase;
- The receptivity of the labour force in implementing process improvements may also be severely curtailed.

The main criticism of these models in this regard is that the impact of AIDS on productivity is poorly understood. As these assumptions are not based on any empirical evidence given that no South African studies have attempted to directly estimate the impact of HIV/AIDS on labour productivity.

6.3.4 Direct and Indirect costs for private sector

South African businesses face increased direct and indirect costs as a result of HIV and AIDS. The higher increased costs include increased payouts of pension benefits such as life cover to deceased families, payment of disabilities and severe illness benefits to sero-positive workers; the cost of replacing specialist skills even though the prevalence in this group is said to be lower companies will feel impact, whereas in the unskilled and semi skilled the cost per individual may be lower; other indirect costs are earmarking more shareholders funds in HIV and AIDS, rather than increasing the marketing budget to increase company's market share, thus affecting earnings per share.

The nature of the impact largely depends on companies' HIV/AIDS intervention programmes - how well are employees encouraged to know their status and to look after their health; whether nutrition and ARVS programmes are in place. For example, companies like Alexander Forbes pay for alternative treatment of HIV and AIDS like sponsoring vitamins and ARV's. Also, whether employees enjoy medical aids benefits. The impact of business on direct and indirect costs also depends on the sector. According to the ASSA models unskilled and semiskilled workers are largely affected by the epidemic - that group being largely black African who works for such sectors as the mines, farms, and manufacturing and construction companies. These companies may have to adopt new strategies and invest in expert systems to replace the large dependencies on human capital.

6.3.6 Direct and Indirect Costs for Government spending

Government expenditure is - and will be higher - as a result of the HIV and AIDS epidemic. This is due to increasing demand for public sector health care services and increasing social development spending due to increase in the number of orphans in South Africa. Thus social grants would be dispersed on an increasing scale.

The NSP details low cost and high cost scenarios ranging from R28bn to R45bn for the period 2007 - 2001. Of this government has allocated R14bn and is looking to the private sector to match this. The key driver of costs in the NSP is adult ARV treatment, at approximately 40% of the total cost. The second most expensive programme (7% of total) relates to the support of orphans and vulnerable children. The cost implications of the NSP are large, in some options exceeding 20% of the health budget without considering the costs arising from the effect of the epidemic on hospital and primary care services.

The impact to the government is quite substantial, and more so due to the individuals with the highest HIV positive prevalence already falling within the poverty bracket thus impacting on government's provision of grants to individuals who are infected, orphans and care givers and budget allocations to HIV and AIDS-related programmes. In future government expenditure may be financed through higher budget deficits, expenditure switching within the health department, by sacrificing other expenditure or by forfeiting public sector capital expenditure (ING Barings; 2000). This has not yet happened in the "low cost" option of the NSP, but the 'high cost option" amounts to R45bn.

According to projections contained in the ING Barings (2000) and the BER (2001) models. The budget deficit will deteriorate as a result of increased demand for health services and increased welfare grants. As a result of a lower level of economic activity, this will lead to lower income tax retrieval and corporate income tax receipts, which will also impact negatively on the budget deficits. (BER 2001: ING Barings 2000)

Once again the ASSA models which are the statistical bases of most model predictions on the HIV/AIDS impact on economy assume the highest prevalence is amongst unskilled to semi skilled individuals. That being the case this sector earns below the taxable threshold of R60,000.00, thus not much tax is collected from this group and the income generated by the sectors that have high numbers of unskilled to semiskilled should be taken into account versus those sectors which have low HIV/AIDS prevalence. What percentage of the total of these sector populations constitutes sero-positive workers relies on demographic and epidemiological data, not on actual sampling of individuals who have tested positive, so it's an open-ended question.

It has to be emphasised that increased government spending is due mainly to an increasing demand for antiretrovirals. If for whatever reason the demand does not materialise, then the pressure on the fiscus would be considerably reduced.

The ING Barings (2000) model assumes higher budget deficits. It assumes a flexible budget deficit, meaning that government expenditure does not decline in line with government revenue (and that tax rates are not increased). The pro-cyclical effects of fiscal discipline, which would lead to a further reduction of the GDP growth rate, are therefore avoided – this would come at the expense of a higher public sector borrowing requirement and lower government savings. BER (2001), given current budget constraints and the conservative fiscal stance of government, assumes (more realistically it might be said) that government would finance half of the increased health expenditure by cutting back on other forms of expenditure and that marginally higher tax rates will generate extra revenue to fund HIV/AIDS-related expenditures and will reduce the upward pressure on the budget deficit.

The main budget deficit has declined from 3.8% of GDP in 1997/98 to 1.5% in 2001/02 (National Treasury, 2003: 54). Projected future budget deficits remain low, although set to increase marginally to between 2 and 2.5% to the financial year ending 2006/2007 (National Treasury, 2003: 53). According to the projections contained in the ING Barings (2000) and BER (2001) models, the budget deficit should deteriorated as a result of increased government expenditure, due to higher direct and indirect employee costs, increased demand for health services and increased welfare grants.

Lower tax revenues, as a result of a lower level of economic activity, as well as lower personal and corporate income tax receipts, will also projected to impact negatively on the budget deficit (BER, 2001; ING Barings, 2000). This has not happened.

According to Van Rensburg (2002), social expenditure by government has continued to increase in the recent past, reflecting a continued concern with improved social delivery. Trends in social expenditure indicate that government is reprioritising expenditure to cope with the HIV/AIDS epidemic, with increasing allocations going towards the Departments of Health and Social Development, which have to cope most directly with the impact of the epidemic.

However, poverty alleviation remains the priority with major allocations going to housing, sanitation, potable water services, as well as education. This impacts directly on the groups most affected by HIV/AIDS, but the impact is missing from projections.

In terms of HIV/AIDS-specific budgetary allocations, though, allocations have increased substantially over past financial years, both in nominal and real terms and both in aggregate

and per capita terms (Van Rensburg 2002). Projected allocations for future years indicate substantial increases (Hickey, 2002), amounting to an additional R14 billion over the 2007 - 2011 period.

As Skordis and Natrass (2002) have shown, any analysis of the budgetary implications of HIV/AIDS-related public expenditure needs to weigh up the cost of doing nothing against the benefits of spending more public resources in certain areas, which has shown may results in net savings to the budget. On aggregate, the increases in public health care expenditure assumed in these models are therefore overoptimistic in light of the current government's stance on fiscal discipline and has as yet not materialised. As emphasised by Van den Heever (2003), these models employ a relatively wide range of estimates of the cost of AIDS care, ranging from R3500 to R16 900 per patient, which is likely to translate into substantial variability in projections of future increases in public health care expenditure and therefore in the projections of the impact in different macroeconomic models.

In addition, predictions about increase in public health care expenditure are also based on assumptions regarding patterns of health care seeking behaviour. For example, it is assumed that people will take up the availability of VCT in large numbers and that most people testing positive will move on to ARV treatment. A DoH statement on 28 November 2006 indicated more than 1,7 million people utilised VCT services between April 2005 and March 2006, 80% (1,374,638) of them tested for HIV. About 35% (479,086) of those who tested were found to be HIV positive.

These uptake levels may not be maintained if public confidence in the validity of HIV tests waned, as illustrated by the protest in Durban in April 2007 led by traditional healers against the use of rapid assays for the diagnosis of HIV infection. It was claimed that these tests led to "large scale false positive results".

It is also assumed that most people living with HIV will enthusiastically embrace ARV treatment. Again there have been indications that all may not be as claimed for ARVS in terms of prolonging life and giving better quality of life.

- The most significant indicator was the results of a study reported in The Lancet (August 2006) of 22,000 patients on ARVs in the past decade which indicated that ARV treatments did not translate into decreased ill-health and deaths. In what can only be interpreted as a serious warning, the study emphasized "There were no significant improvement in early immunological repose as measured by CD4-lymphocyte count, no reduction in all-cause mortality and a significant increase in combined AIDS/AIDS related death risk".

- A WHO study (Williams; 2006) found that HIV negative populations can have T cell counts below 350 per microlitre, a number that would, according to WHO guidelines, qualify for an AIDS diagnosis in HIV positive populations. Another surprising conclusion from the same study: HIV positives that started AIDS drug treatment with low T cell counts had the same survival outcomes as HIV positives that began treatment with high T cell counts.
- A study in the Journal of the American Medical Association (JAMA), (Rodriguez 2006) of 2,800 HIV positives reported viral load measures failed in more than 90% of cases to predict or explain immune status. The study concluded that viral load is only able to predict progression to disease in 4% to 6% of HIV-positives studied, challenging current ARV treatment policy.

The question is: Are people signing up for VCT getting this latest information so that they can make informed choices?

6.3.7 Impact of HIV And Aids On Poverty And Inequality

Provided statistics are a true reflection of reality, then the socio economic impact of HIV and AIDS creates a vicious trap for poverty stricken communities. This is due to the following;

- Bread winners leaving their jobs due to ill-health.
- Household income will disappear.
- The number of child headed households and orphans will increase.
- Education of future generations will be negatively impacted.
- The neediest areas, informal settlements in urban and rural areas will be disproportionately affected by shortages of human resources and health care services.

In South Africa people living below the breadline are the ones most affected by HIV and AIDS. The expenditure on food is already precariously low - HIV and AIDS may worsen the situation. Malnutrition arises as a result of poverty and has the same profile in terms of health indicators as does HIV/AIDS. It is difficult to treat an impaired immune system if the individual already suffers from malnutrition. Thus the vicious cycle of poverty and disease is perpetuated.

The NSP notes that "poverty does not operate on its own as a risk factor for HIV infection. Its effects need 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 inadequate public health system. Poverty related stressors arising from aspects of poverty in townships such as poor and dense housing and inadequate transportation, sanitations and food, unemployment, poor education, violence and crime have been shown to be associated with increased risk of HIV transmission."

The only thing that sustains the HIV epidemic is sexual networking, as the NSP calls it, so the inescapable conclusion is that (for whatever reasons) poor black South Africans must be the most uninhibited, indiscriminate and promiscuous sexual athletes in the world.

There is no doubt that poverty poses the major challenge for developing nations, including South Africa, where poverty alleviation remains the top priority of government. It is assumed that a successful strategy of economic growth and development, the creation of healthy environments in which to play, live and learn would alleviate poverty and its worst consequences. In which case, the HIV and AIDS prevalence may be contained based on an assumption that sexual networking is inversely proportional to rising economic class.

6.3.7.1 Sexual Networking as the Main Driver of the HIV Epidemic

An in depth analysis of the scientific evidence for the sexual transmission of HIV is beyond the scope of this study. Suffice to note that not all scientists agree with this hypothesis. (PAAPIR, Chapter 2. 2001)

The most comprehensive study yet of sexual transmission (Padian 1997) showed that in a 10 year follow-up prospective study of heterosexual couples of whom only one partner of either sex was HIV positive "no sero conversion occurred among exposed partners", suggesting no sexual transmission of HIV, or as the defence team's expert witness in the Jacob Zuma trial put it - a remote "1000 to 1" chance - and his contention went unchallenged by the state.

Someone who agrees is Dr David Gisselquist who concludes from his own collaborative research that "Though heterosexual intercourse has been virtually the sole explanation offered for the AIDS epidemic in sub-Saharan Africa, to our knowledge in no other part of the world has penile-vaginal exposure (as opposed to "heterosexual sex") been demonstrated to initiate or sustain rapid HIV propagation." (Brenner 2003)

In a review titled "HIV infections in sub-Saharan Africa not explained by sexual or vertical transmission" Gisselquist et al summarise their findings based on 106 studies conducted in Africa: "An expanding body of evidence challenges the conventional hypothesis that sexual transmission is responsible for more than 90% of adult HIV infections in Africa. Differences

in epidemic trajectories across Africa do not correspond to differences in sexual behaviour. Studies among African couples find low rates of heterosexual transmission, as in developed countries. Many studies report HIV infections in African adults with no sexual exposure to HIV and in children with HIV-negative mothers. Unexplained high rates of HIV incidence have been observed in African women during antenatal and postpartum periods. Many studies show 20% - 40% of HIV infections in African adults associated with injections(though direction of causation is unknown). These and other findings that challenge the conventional hypothesis point to the possibility that HIV transmission through unsafe medical care may be an important factor in Africa's HIV epidemic. More research is warranted to clarify risks for HIV transmission through health care."

In a subsequent review with 85 references titled "Let it be sexual: how health care transmission of AIDS in Africa was ignored" (Gisselquist 2003), they conclude that at most 29% of HIV infection in African women and 35% in African men could be attributed to sexual transmission. The rest was iatrogenic (originating from health professional's care and practice). Based on their findings they called "for a re- conceptualisation of research to more accurately assess routes of HIV infection".

It must be noted that Gisselquist was appointed to the Board of the HSRCs South African HIV/AIDS Research Unit, though his now considerable body of published research receives no public exposure in this country. He also testified to the US Senate Committee on Health, Education, Labour and Pensions, on the Oversight Bill on 27 March 2003, so his views are known in influential circles.

6.3.7.2 Alternate Analysis and Views on HIV/AIDS Impact on the Economy

Columnist Elvis Jack, a doctor employed in the public health system, cited in Business Day 12 December 2000 that on current estimates of AIDS-related deaths unemployment would be cut from 35% to 10% in a post-AIDS era. He continued: "GDP per capita will rise simply on an arithmetical basis, there being fewer heads to count. But there is also a strong case to be made that GDP itself will raise post-AIDS. A smaller population will mean a smaller public service. In addition, higher employment rates will enable the public service to shrink still further, taxes will drop and hence capital will be freed internally to reinvest. Macro economically, SA will look much more attractive to foreign investors and one might well see a post-AIDS boom, ghoulish though it is to contemplate."

Roy Cokwane in The Star's Business Report (13 April 2006) reported a study by Hilary Southall, the director of the Joint Economic Aids and Poverty Programme (JEAPP), prior to it being published in a special edition of the South African Journal of Economics. According to

Southall's research HIV/AIDS was not having a major impact on South Africa's overall economy. The finding of the study was that of the many things that influenced the country's overall economy, "AIDS is certainly not a major one".

South all was quoted as saying: "AIDS is certainly not driving the economy. However, no one can deny the terrible suffering and the impact of AIDS in this country. Don't give up and underestimate it. [But] we can beat it economically. Look at us now. The economy is flourishing. The economic impacts of HIV/AIDS are not obvious until you study them and get good data.

Cokyane cited comments were at odds with a SA Business Coalition against HIV/AIDS survey for July to September 2005, which revealed 40% of the manufacturing and transport companies and 60% of the mining companies surveyed reported a tangible loss of experience and vital skills. Thus reported that according to a another Jeapp-commissioned study by Patrick Connelly and Sydney Rosen, HIV/AIDS was ranked ninth among a list of 10 concerns affecting small and medium enterprises (SMEs). Productivity of workers, demand for product, cost of labour, cost of materials, regulations, crime, taxes and a shortage of skilled labour were all ranked as more important concerns than HIV/AIDS. Based on data collected through a survey of managers of 80 randomly selected SMEs in KwaZulu-Natal and Gauteng, 62% of the companies surveyed confirmed that they had never even discussed HIV/AIDS as a business issue; 29% expected the epidemic to have a large impact, 25% a moderate impact and 43% little or no impact, with 4% not responding.

Another report by Cokyane published on 24 April 2006 dealt with a study commissioned by government and completed in February 2006 - The Macroeconomic Impact of HIV/AIDS under Alternative Intervention Scenarios (With Specific Reference to Antiretroviral Treatment) on the South African Economy, funded by USAID and UKAID and conducted by the Bureau for Economic Research at the University of Stellenbosch.

It found that though HIV/AIDS would undoubtedly hurt economic growth, South Africa was not facing a doomsday scenario. The study said the provision of antiretroviral treatment would lessen the economic impact of HIV/AIDS and the epidemic would manifest gradually.

"The brunt of the impact of the epidemic will most likely only be felt during the period 2010 to 2020 and even then, GDP [gross domestic product] growth will remain positive. The level of GDP will be significantly higher than it is now while the size of the population could be similar to the current level. This implies that real per capita income will not only be higher in 10 to 15 years' time than it is now, but will also be higher compared with a No-AIDS scenario," it said.

The results from the different scenarios indicate the epidemic would have a negative impact on overall economic growth and, in the absence of antiretroviral treatment, the rate of GDP growth could fall from a projected average of 4.4% over 2002 to 2015 to 4% a year due to the epidemic. It also suggested the provision of antiretroviral treatment with a 50% uptake could reduce the impact of HIV/AIDS on economic growth by on average 17% between 2000 and 2020. The report concluded the results showed that on a macroeconomic level, the benefits of providing antiretroviral treatment in terms of economic growth "saved" far outweighed the costs.

Its analysis also suggested the economy would be 8.8% smaller by 2020 than it would have been without HIV/AIDS. However, the level of per capita GDP was projected to be about 8 percent higher in real terms by 2020 because the adverse impact of the epidemic on the size of the population would outweigh the negative impact on real GDP.

The report stressed that while the magnitude of the impact on overall economic growth did not appear to be alarming, the macroeconomic projections may conceal more negative impacts on certain sectors of the economy. In general the analysis showed the general government, water and electricity, mining, metals and machinery, and electrical machinery sectors were relatively seriously exposed to the supply-side risk and demand-side risk. The supply-side risk was due to high HIV prevalence and relatively high skills intensity, while the demand-side risk stemmed from the impact of HIV/AIDS on intermediate and final demand and exports. Sectors with low overall risk included community, social and personal services, clothing and textiles, agriculture and construction.

6.4 Conclusion

There is no doubt that problems have been created for statisticians who have to overlay possible estimated HIV prevalence and AIDS deaths on their population data.

The Sunday Independent's supplement Reconstruct of 3 November 2000 quoted South African employee health service company Lifeworks, a Metropolitan-Linked affiliate which also uses the Doyle model, as indicating that by 2005, absenteeism due to HIV/AIDS would cost companies up to 17, 5% of wage bills, disability as much as 10% and HIV as much as 15% per year, without including the costs of recruitment, training and productivity. South Africa's GDP would be 17% lower than it would have been without AIDS by 2010, translating into R165 billion. Another report from Deutsche Securities released in Johannesburg and quoted in The Star 29 November 2000 said by 2015, South Africa's economy would have shrunk by 23% because of AIDS.

The Bureau of Market Research at the University of South Africa reported on 6 February 2001 that South Africa's population would shrink by 16 million in three decades or 1,8m a year. It set population growth at an annual 1, 35% between 1996 and 2006. (In fact South Africa's population grew 10% in this period). From 2016 onwards the country would experience negative population growth as AIDS related deaths exceeded births.

However, not all studies and commentators agree with a doomsday scenario in assessing the impacts of the HIV/AIDS epidemic. The study has established that all predictions given in the past that South Africa will experience a decline in population, deaths would rise exponentially has not come to pass. It is time to re-assess the models as they have been the basis for policy formulation both from government and private sectors going forward more accurate statistics and predictions need to be employed. This is due to the limitations in employing existing methodologies and projection models, assessing the impact of HIV/AIDS to the economy is not an exact science, but this does not mean it has had no impact. Despite all the limitations in employing existing methodologies and projection models, HIV and AIDS has had, does have and will have an impact on the economy. Notwithstanding the limitations, worldwide organisations and think-tanks (including the World Bank), have issued negative predictions on the economy. However, there is insufficient evidence to suggest that South Africa faces a doomsday or that the effects of the epidemic will be devastating.

CHAPTER 7

CONCLUSIONS, RECOMMENDATIONS AND REMARKS

7.1 AIM of This Study

The aim of this study was to more clearly determine the threat that the HIV/AIDS epidemic poses by collating information and applying it to the South African situation. The theme that runs through this study is the proposal that current approaches to meeting the challenges posed by HIV and AIDS have not worked to protect the population at large. Rather than recognising and reporting on the failure to cure, prevent, or successfully treat HIV and AIDS, there's conspiracy of silence that continues to deny that billions of taxpayer's contributions and decades of medical research has yielded little or no progress in understanding the chronic syndrome defined as AIDS.

This study proposes that there many indications that the single-germ HIV theory as the sole and sufficient cause of the chronic disease process called AIDS, cannot be sustained. It argues that there are many examples in medical and scientific history of tragic results from premature consensus on causes of disease, and HIV/AIDS from all indications is another such tragedy.

This study proposes that as a consequence of the high profile and influential support by President Thabo Mbeki for scientists who challenge HIV as the sole and sufficient cause of AIDS, consequences have been and are still evident in the South African government's approach to the prevention, care and treatment of HIV and AIDS.

The conclusion of this study is that South Africa is uniquely positioned to play a decisive, and defining role in the battle against HIV and AIDS.

7.2. Defining HIV and AIDS

Chapter 2 aimed at establishing through a historical analysis from the date of the claimed discovery of HIV to give a reasonably detailed version of the alternative views of scientists in the world who dispute the single germ theory that HIV causes AIDS. The purpose of this was to highlight the central proposition of that the theory of HIV being the sole and sufficient cause (risk factor) of AIDS was a premature consensus, in the absence of a clear picture of the molecular mechanisms underlying disease processes.

This study highlighted the fact that in terms of defining HIV, there is still dispute. However, it is the view of this study that the expertise and research of Dr Howard Urnovitz (see Chapter 2) poses a highly significant and unanswered challenge to the view that a single germ causes AIDS. In his 2002 testimony to the US House of Representatives Committee on Government Reform and Oversight expressed "outage" at the HHS support for the Durban Declaration (DD), published in the journal Nature in the week the PAAP was meeting and in the run-up to the International AIDS Society's conference in Durban in July 2000. His point of departure was the citing of the National Institutes of Allergic and Infectious Disease fact sheet titled "The Evidence that HIV causes AIDS" as a reference to the DD statement that "the evidence that AIDS is caused by HIV-1 or HIV-2 is clear-cut, exhaustive and unambiguous, meeting the highest standards of science". Urnovitz had read all the research papers referenced in the DD and in the fact sheet, and concluded that the alleged "evidence" was profoundly inconclusive, based on poorly designed research where claims was not supported by the data. (Urnovitz 2000) The South African connection is that the DD was instigated by an organising committee of 45 scientists, administrators and health professionals, most of them on the President Mbeki's AIDS Advisory Panel. Urnovitz made the point that the intention of the DD was to declare that "HIV is the sole cause of AIDS", in response to controversial comments to the contrary made by President Mbeki and several scientists on his panel. In so doing the goal was to end open scientific debate.

7.2.1 Recommendation

- A climate of open discussion needs to be promoted, nurtured and supported. The HIV/AIDS battle can only be won with unfettered discourse: if you want to know something, it can only be understood in the context of opposite views. Then in the clash between dissenting opinion, error of thinking is revealed and acknowledged. Not censorship of any idea not accepted by a consensus, crude majority. If science and government wish to continue any kind of responsible partnership, a new paradigm must be developed. It must allow scientific and public discourse on fresh research ideas, even if they contradict long-held doctrines.
- An end to de facto government sanctions that exist as a result of an inherent bias against alternate research - defined as any study that contradicts the conventional wisdom that germs cause all infectious diseases and ignores an avalanche of findings about genetic factors

- An end to more than two decades of "denying clues" that has deprived AIDS victims of possible pathways out of illness, and has established the refusal to consider almost any new ideas on any medical subject as a virtue.

7.3 The South African Experience

Chapter 3 highlighted that in Africa the syndrome (the "s" in AIDS) encompasses at least 34 diseases, none of them new. A syndrome cannot be a bundle of diseases without connections to each other. If a disease or many of them are called a syndrome, this syndrome can not be mono-causal. If there is any mono-causality it could only be concentrated on one or a few of the disease-symptoms because of the specific reactions. It is proposed that AIDS is a pattern of diseases resulting from reduced immune capacity due to a sole agent HIV. It seems to be an open-ended cluster of diseases with very different details. All syndromes have categories, etiological or homogeneous initial symptoms, pathogenic cascading sequences and at last break-downs of all varieties of tissues. Within all categories any pathologic input is different. There is no common denominator among the AIDS-defining diseases, except a positive test on HIV antibody assays.

There is no common clinical definition of AIDS. South Africa's Comprehensive Plan on the Treat Care and Prevention of AIDS released November 2003 does not supply such a definition. Nor does the Operational Plan completed in August 2003. Nor does the National Strategic Plan (April 2007).

This poses problems in defining the epidemic where "incidence" and "prevalence" (which are statistical and demographic modelling terms) are not distinguished from actual "infection". The result is that it is difficult to separate "new infections" and statistical modelling is based on cumulative totals from the start of the epidemic.

7.3.1 Recommendations

- The PAAPIR concludes Chapter 3: Surveillance, with a General Recommendation underlying one commonality among all panellists: "There was general consensus on the need for a case definition of AIDS to be standardised for clinical practice." This recommendation has not yet been achieved. According to the current definition it is not even necessary to have a HIV-positive reaction on antibody tests because provided CD4 counts are low enough full blown AIDS is diagnosed and a marker of <200 T4 cells per microlitre is sufficient to commence antiretroviral treatment.
- The inherent problems in the diagnosis of "HIV infection" and "AIDS" needs wider recognition.

- Exact testing procedures to diagnose HIV infection are not spelled out in the Comprehensive Plan on the Treatment, Care and Prevention of HIV and AIDS (November 2003). The procedure needs to be standardised and the information needs wide public dissemination compared to the current situation where people can be diagnosed on a single rapid assay. The WHO recommended rapid assays in resource-constrained regions in 2005. On the second page of its "Rapid HIV Tests: Guidelines for use in HIV testing and Counselling Services in Resource-constrained settings" it states: "The World Health Organization does not warrant that the information contained in this publication is complete and correct and shall not be liable for any damages incurred as a result of its use."
- Liability for the diagnosis of "HIV infection" needs to be clearly defined and not shifted to people who volunteer because they trust health professionals.
- CD4 counts need to be re-assessed as a measure of commencing ARVS in the light of recent WHO research (Williams 2006) which supports previous research. (Grivel (1999; Wang (1998).
- Viral load testing needs to be re-assessed as a measure of determining efficacy of ARVs in the light of recent research results published in the JAMA. (Rodriguez 2006)

7.3.2 Special Comment: Mandatory HIV testing and DOTS

In South Africa, syphilis is a great success story - infections at ante-natal clinics are down from 11% to less than 2% since 1994. It is based on mandatory testing at clinics, contact tracing and immediate treatment. Syphilis is also a notifiable disease. No one has raised this as a human rights violation, as has been raised with any suggestion that HIV testing become mandatory and notifiable. The Treatment Action Campaign has been particularly adamant on the issue, as it has been on a Directly Observed Treatment System (DOTS) - the Number 1 success story in curing TB - being a violation of privacy and dignity rights if applied to antiretroviral treatment.

The failure to pursue the question of mandatory HIV testing remains puzzling in the face of the convincing success of the syphilis programme. This study concludes that it would be a betrayal of trust and dishonest to support mandatory or any HIV testing when there is knowledge of inherent problems, but consensus opinion has no doubts as to their specificity so an application of the lesson of syphilis should be supported. The fact that it isn't, seems paradoxical. If HIV tests were mandatory and infection notifiable, as with other infectious

diseases in the interests of public health and safety, then no one would have to rely on estimates and models.

7.4 Unanswered questions raised by President Thabo Mbeki

Chapter 4 was aimed at emphasising some of the questions raised by President Thabo Mbeki in his letter to world leaders of April 2000 and his address at the opening of the Presidential Aids Advisory Panel in May 2000 which have yet to be answered. The purpose in doing this was to raise the proposition that though it is widely accepted that HIV/AIDS is the great folly of his tenure, it is possible and even probable that it is his grace. Some unanswered questions:

- By what mechanism can it be explained that in western developed nations, HIV/AIDS is transmitted homosexually, but in Africa it is reported to be transmitted heterosexually?
- What happened sometime between 1985 and the early 1990s to change South Africa's HIV/AIDS incidence from being limited to a few homosexuals to epidemic proportions among heterosexuals?
- What are the specific and targeted responses to the specifically African incidence of HIV/AIDs?
- Given the nature of science, and the nature of the predicted calamity is it wise to exclude maverick thinkers simply because they do not conform to majority views?
- How does one justify closing the book of HIV/AIDS science at a specific point the discourse had reached in 1984?
- Is science still science when the only criteria is how many people support a particular theory?

7.4.1 Recommendations

- The book of science can not close and be scientific. Leaders and captains of industry must take on scientific literacy and come up to speed with the edge of the scientific envelope on major challenges the world faces:
 1. What physics dictates and how it constrains other disciplines.
 2. What chemistry dictates in terms of cellular chemistry of healthy versus unhealthy.

3. What biology dictates as the minimum requirements to fulfil constitutional rights to an "environment not detrimental to health".

7.5 Local response and impact of HIV/AIDS

Chapter 5 traced the development of HIV/AIDS policies in South Africa leading to the National Strategic Plan 2007-2011 compared to policies around the world. It highlighted that the NSP contains no major breakthroughs not contained in the previous plan 2000-2005. No one has been cured of HIV or AIDS. Antiretrovirals are not a cure for either HIV or AIDS. Basic scientific research, as opposed to epidemiological research is moribund. Yet, massive increased funding is being thrown into policies which have so far failed to stem the tide of rising HIV infections and deaths from AIDS.

Funding for prevention campaigns are not the critical factor, according to the UNAIDS advocacy, communication and leadership director Achmat Dangor. His organisation found in what it described as a confirmatory study that Zimbabwe was managing to decrease the rate of new infections with its education and prevention campaigns while spending only \$4 per HIV-positive person compared to \$187 in neighbouring Zambia which had failed to halt the rate of HIV infections. (Fleshman 2006) Dangor was quoted as saying that the lesson from Zimbabwe is that "you do not have to wait for a massive amount of external funding to contain the spread of HIV".

7.5.1 Recommendations

- The NSP has been promoted as an "inclusive process", yet the sector not represented was alternate thinkers and innovators. It is important to include this sector because it is only in the cut and thrust of open interactions that errors are revealed and admitted, and solutions devised. By allowing the NSP to mandate how HIV/AIDS science will be implemented, a clear government sanction has been established. This sanction will prevent the innovative research needed to attack the tough medical issues presented by the HIV/AIDS epidemic, but not limited to it.
- In the wake of the release of the NSP, the push will be to pressurise the private sector into "coming to the party" with the shortfall in funding of at least matching the government's R14bn over the next five years, giving a combined R28bn. That still leaves R17bn shortfall according to SA Treasury estimates if goals of the "high cost" scenario" of the NSP are to be met. The NSP seeks buy in so that what is a "government programme" can move to being a "South African programme". Before the private sector comes to the party it should:

1. Insist on proper accounting of the HIV and AIDS programme to date. Audited figures detailing exactly how government spends its HIV and AIDS allocation must be made public. This includes proper audits of organisations receiving government funding.
2. Insist on detailed information of success or failure of programmes to date, especially as regards antiretrovirals. It is unacceptable that to date there is no information beyond the mere total number of people initiated into ARV treatment in the public health system. This includes a dearth of scientific studies into the efficacy and safety of ARVS. This is particularly urgent in respect of the Mother-to-child Transmission (MTCT) programmes, where no studies have been conducted into the effects of ARVS on the developing foetus and the longevity and health of the growing child in the first five years of life, matched to a cohort which did not go the ARV route.
3. Not rely on media reporting of these issues but instead conduct own basic research.
4. The media and communications business sector needs to vastly improve its reporting on these issues. The need to do this was acknowledged by the South African National Editor's Forum which concluded that "there is a glaring absence of substantial debate around HIV and AIDS".(Barrett 2006)
5. Consider the effects of alternate funding directions, for example R14bn into land acquisition, education and training in establishing house hold food security through small scale agricultural activities. In this connection it is worth noting that the New Partnership for Africa's Development (NEPAD) identifies agriculture as the sector which can best deliver economic development and poverty alleviation.

7.6 Economic Impact of HIV and AIDS in South Africa

Chapter 6 reviewed major economic models assessing the impact of HIV and AIDS on the economy of South Africa, compared to the realities of major benchmarks such as budget expenditure, taxation and tax receipts, GDP, population growth. It concluded that given all the limitations in existing projection models, which are widely and generally acknowledged, assessing the impact of HIV/AIDS on the economy is not an exact science. This does not mean it has had no impact. Despite all the limitations in employing existing methodologies and projection models, HIV and AIDS has had, does have and will have an impact on the economy. International organisations and think-tanks (including the World Bank), have issued negative predictions for the economy. However, there is insufficient evidence to suggest that South Africa faces a doomsday or that the effects of the epidemic will be devastating.

7.6.1 Recommendations

- For economists to predict the impact of HIV and Aids in any economy especially the South African economy, the Actuarial and other economic projection models should be used in conjunction with empirical data. Real data is needed on every economic indicator. It would be beneficial if empirical data would be collected, defined and key indicators developed for purposes of measuring, evaluating and monitoring the impacts programmes and responses of sectors, companies and government organizations. This will not only benefit the above mentioned, however for cost benefits analysis.
- More research is required on Direct and Indirect costs especially to South African Businesses, and sector breakdowns to assess which are most vulnerable. The mining sector has been most successful at defining impacts, but in the agricultural sector which is a significant employer within the SADC region little has been done to assess the impact of HIV and AIDS.
- Detailed empirical surveys involving actual blood sampling rather than demographic and epidemiological estimates, are needed on the middle and upper class income band to determine HIV prevalence in these groups.

7.7 Conclusion

The NSP puts a priority on prevention, halving the number of new infections by 2011. Even if the entire country could be persuaded to halt all sex for the next year, one couldn't turn off the tap of people testing antibody positive if the assays are non-specific and/or whatever makes one person test positive and another negative can't be attributed to sexual transmission only, as has been proposed by Gisselquist et al, or not at all, as suggested by Padian et al's 10-year study of discordant partners.

South Africa is a small country. Little happens that is not nationally known. Any news is national news. No matter the field, few experts exist and they are incessantly quoted. When it comes to science, there is orthodox main establishment science, dictated by a small coterie of like minded academics. Dissenting opinion has been successfully sidelined.

In the AIDS debate, dissenters are a lunatic fringe. Only those who insist HIV causes AIDS are aligned with "science". They have fulfilled the Pharmaceutical Industry's public relations dream of never having to publicly discuss their science nor test their own theories or products. The next frontier is to get perfectly healthy people to take antiretroviral prophylaxis and to that end trials are underway around the world. Pharmaceutical companies have usurped the role of the physician in society. Alternate safe and less invasive solutions - herbal, naturopathic and homeopathic - are promoted as "snake oil" treatments. They receive no funding and opinion is censored.

Blanket censorship is not new in South Africa. The same thing happened under National Party rule and led to a legal system of Apartheid. The difference is Apartheid needed draconian laws to constrain public discourse and the media, but in AIDS the media and scientific journals exercise self censorship with support from its governing bodies.

"Shocking", "inexplicable", "very worrying" were the comments on a survey which found that about 40% of public servants believed AIDS was curable. (Hartley 2006b) Based on 98 interviews with departmental representatives responsible for implementing HIV/AIDS programmes, 20 focus groups across the country and 1680 questionnaires, it was solid research which warranted more serious attention and investigation beyond the one day stir it created. The media, though, cannot afford to go that route because it implies it has been wrong. It's much easier to label public servants as "shockingly ignorant". Since an overwhelming majority of public servants are black the inference of inferior intellect reflects centuries of prejudice.

Whereas, the reality is that this is a country with a history of HIV/AIDs dissent and some extremely high-profile dissenters, like our Health Minister Manto Tshabalala-Msimang MD

and our president Thabo Mbeki. It is also a country where 80% of the people consult traditional healers. Far from reflecting the society in which it operates our health systems, media and information based groups are immersed in allopathic medicine. The lack of analysis reflects a fundamental inability to critically assess health and medical practices where the establishment has become a major threat to health.

People have the right to choose their treatments. Equal rights have to be afforded to traditional medicine - and be claimable on medical aid. There are alternatives to toxic drugs, they work, there is ample evidence they work going down the eons of time.

South Africans really do need to go back to basics and reassess beliefs accepted on faith instead of data based on hard science results. The fact is scientists here and their umbrella institutions have never even indicated that there is the slightest dissent on HIV and AIDS, but not limited to this issue.

Internationally, there are a few pockets of dissenting opinion, but not one government, institute or their more popular medical and science journals gives them any credence. So the single infectious germ theory is a worldwide pandemic.

Yet, according to a WHO report almost a quarter of all disease was caused by environmental exposure, amounting to an estimated 13 million deaths worldwide and more than 33% of disease in children under the age of 5. (WHO 2006) This far exceeds anything attributed to HIV/AIDS.

"The responsiveness of genes and genomes to the environment makes clear that the only way to keep genes and genomes constant and healthy is to have a balanced ecology... On the other hand, it is definitely futile to think that we can go on ruining our ecosystem and stay healthy so long as we have 'good' genes... Genes, unlike diamonds, are not forever.", writes Dr Mae-Wan Ho, director of the Institute of Science in Society (Ho 2003)

CHAPTER 8 BIBLIOGRAPHY

1. Abbott Laboratories. (1996) HIVAB™ HIV-1/HIV-2 (DNA) Enzyme Immunoassay. 68-0158/12
2. Abt Associates. (2000) The Impending Catastrophe: A resource book on the emerging HIV/AIDS epidemic in South Africa. LoveLife, Henry J Kaiser Foundation, South Africa.
3. Ainsworth, M and Over, M. (1994) The economic impact of AIDS in Africa. Editor Essex, M et al. AIDS in Africa. Raven Press.
4. ANC Today. (2005) HIV and AIDS in Africa: Lessons from the WHO consultation on nutrition and HIV and AIDS. Vol 5, No 17. 29 April-5 May 2005.
5. Arndt, C and Lewis, S. (2000) The Macro Implications of HIV/AIDS in South Africa: A Preliminary Assessment. The South African Journal of Economics 68: 5, pp.1-32. December.
6. Barratt, E. (2006) Spreading the News: South African Media in the First Decade of Democracy (1994-2004). Reviewed by Elizabeth Barratt, Deputy Chairperson of SANEF. The Star. 16 January 2006.
7. Barré-Sinoussi, F. Chermann, JC and Rey, F. (1983). Isolation of a T-Lymphotropic retrovirus from a patient at risk for acquired immune deficiency syndrome (AIDS). Science. 220:868-71).
8. Behrman Greg. (2004) The Invisible People; How the US Has Slept Through the Global AIDS Pandemic, the Greatest Humanitarian Catastrophe of Our Time. Free Press. pg 164.
9. BER (2001). "The Macroeconomic Impact of HIV/AIDS in South Africa". Bureau of Economic Research, University of Stellenbosch
10. Booysen F.LeR, Gendenhuys,J.P & Marinkov M, The Impact of HIV/AIDS on the South African economy, A review of current evidence. Department of economica OUVS.
11. Bonnel, R., 2000. Economic Analysis of HIV/AIDS. Paper presented at the African Development Forum, Addis Ababa, 3-7 December

12. Brenner DD, Brody S, Drucker E, Gisselquist D, Minkin S, Potterat JJ, Rothenboerg R Vachon F. (2003) Mounting Anomalies in the Epidemiology of HIV in Africa: cry the beloved paradigm. International Journal of STD and AIDS 14: 144-147
13. Brink, A (2007) The Trouble with Nevirapine. www.tig.org.za
14. Burke, DS. (1997) Recombination in HIV: An Important Viral Evolutionary Strategy. Emerging Infectious Diseases. Vol 3 No 3. July-September 1997.
15. Burger, R 2001. Macroeconomic Impact of HIV/AIDS in South Africa; A supply – side Analysis, Department of Economics; University of Stellenbosch
16. Centres for Disease Control and Prevention (CDC) Morbidity and Mortality Weekly Report: 17. Ibid. (1982) MMWR 31 (37): 507-508. 18. Ibid (1987) MMWR 36 Supplement 1S. 19. Ibid. (1992) MMWR 41RR-17.
20. Chmiel JS, Detels R, Kaslow RA, Van Raden M, Kingsley LA, Brookmeyer R. (1987) Factors associated with prevalent human immunodeficiency virus (HIV) infection in the Multicenter AIDS Cohort Study. Am J Epidemiol 1987; 126:568-77)
21. Cokyane, A (2007) Aid has no major effect on economy Business Day 13 April 2007.
22. Ibid (2007) B South Africa not faced with doomsday scenario says report; Business day 24 April 2007
23. Constantine, N. Saville, R. DAX,E (2005) Retroviral testing and quality assurance, Essentials for Laboratory Diagnosis. Melloy Printers ISBN0- 978 5982- 0-2
24. Comprehensive Plan for the Care, Treatment and Prevention of HIV and AIDS. August 2003. www.info.gov.za/otherdocs/2003/aidsplan.pdf
25. De Harven, E. (2000) Summary Statement on Retroviral "Markers", viremia, and electron microscopy. Submitted to the Presidential AIDS Advisory Panel moderators. April 2000
26. Dorrington, RE et al.(2004). The Demographic Impact of HIV/AIDS in South Africa. www.mrc.ac.za
27. Duesberg PH. (1996) Inventing the AIDS Virus. Regnery. pg 58
28. Ibid. (1989) Human immunodeficiency virus and acquired immunodeficiency syndrome: Correlation but not causation". Proc. Natl. Acad. Sci. USA, Vol. 86, pp. 755-764, February 1989. http://www.duesberg.com/papers/ch3.html)
29. Ibid. (1987) "Retroviruses as carcinogens and pathogens: Expectations and Reality"

Cancer Res. 47:1199-1220.
30. Durban Declaration. (2000) Nature. Vol 406. 6 July 2000.
31. Elwood, BF, and Stricker, RB. (1994). Polio vaccines and the origin of AIDS. Med. Hypotheses 42:347-354.
32. FAO (2001) The Impact of HIV/AIDS on Food Security. Committee on World Food Security.
33. Fleshman, M. (2006) Zimbabwe makes headway in AIDS fight. Business Day 18 January 2006
33. Ford, C., Lewis, G. & Bates, B., 2002. The macroeconomic impact of HIV/AIDS in South Africa.
34. Gallo, RC. (1991) Virus Hunting. Basic Books (Harper Collins). Chap 10, pg 193-194
35. Gallo RC, Sarin PS, Gelmann EP. (1983). Isolation of Human T-Cell Leukaemia Virus in Acquired Immune Deficiency Syndrome (AIDS). Science 220:865-867.
36. Gallo RC, Sarin PS, Kramarsky B, Salahuddin Z, Markham P, Popovic M. (1986). First isolation of HTLV-III. Nature 321:119.
37. Gisselquist, David PhD (2003) AIDS Crisis in Africa: Health Care Transmissions. Testimony to US Senate Committee on Health, Education, Labor and Pensions. 27 March 2003:
38. Gisselquist D and Potterat JJ (2003) Heterosexual Transmission of HIV in Africa: an Empiric Estimate. 14: 162-173
39. Gisselquist D, Potterat JJ, Brody S, and Vachon F 2003. Let it be Sexual: How Health Care Transmission of AIDS in Africa was ignored. International Journal of STD and AIDS 14: 148-161
40. Gisselquist D, Rothenberg R, Potterat JJ, Drucker E (2002) HIV Infections in sub-Saharan Africa not explained by Sexual Transmission 13:657-666
41. Grivel JC and Margolis LB. (1999) CCR5- and CXCR4-tropic HIV-1 are equally Cytopathic for their T-cell targets in human lymphoid tissue. Nat Med. 5(3):344-6.
42. Groenewald P et al. (2005). Identifying deaths from AIDS in South Africa. AIDS. 19(2):193-201. 28 January 2005.
43. Guccione B. jnr. (1993) Interview with Peter Duesberg. Spin September 1993.
44. Hartley, Wyndham. (2006) AIDS shake-up sidelines Tshabalala-Msimang. Business Day. 8 September 2006
45. Ibid. (2006)b Shocking ignorance of AIDS within government - report. Business Day. 20 June 2006.

46. Health and Human Services (HHS) (1997) Simian Virus 40 (SV40) A Possible Human Polyomavirus Workshop. January 1997
47. Health-e News (2005) TB, HIV and AIDS, diabetes, hypertension, cancer remain challenges. Health-e News Service. 21 February 2005. www.health-e.org.za
48. Hickey, A., 2002. HIV/AIDS spending policy and intergovernmental fiscal relations. <i>South African Journal of Economics</i> 70(7): 1262-1283
48. HIV/AIDS/STD (Strategic Plan for South Africa 2000- 2005 February 2000
49. Ho, M-W. (2003) Living with the Fluid Genome, Institute of Science in Society. April 2003. http://www.i-sis.org.uk/fluidGenome.php
50. Hodgkinson N. (1996) AIDS The failure of contemporary science: how a virus that never was deceived the world. London: Fourth Estate.
51. Horwitz, MS, Boyce-Jacino, MT and Faras, AJ (1992) Novel Human Endogenous Sequences related to Human Immunodeficiency Virus Type 1. <i>Journal of Virology</i> . Vol 66, pp 2170 - 2179
52. Hull, RN, Minner, JR and Mascoli, CC. (1958) New viral agents recovered from tissue cultures of monkey kidney cells. <i>Am. J. Hyg.</i> 68:31-44.
53. Human Sciences Research Council (HSRC) (2002) Study of HIV/AIDS: Household Survey 2002 (www.hhs/nvpo/pub.htm)
54. International Crisis Group Report.(2001) HIV/AIDS as a security issue. 19 June 2001
55. ICTVdb (2004) International Committee on Taxonomy of Viruses - The Universal Virus Database, version 3. 15 June 2004. http://www.ncbi.nlm.nih.gov/ICTVdb/ICTVdB/
56. International Organisation for Migration (ICM) (2006) HIV/AIDS Population Mobility and Migration in South Africa: Defining a Research and policy agenda. Pretoria.
57. Kahn, Tamar. (2006) State claims half of those in need are now on AIDS drugs. <i>Business Day</i> . 14 November 2006.
58. Koliadin, Vladimir. (1998) What Causes A Positive Test for HIV-antibodies. <i>Rethinking AIDS Website</i> . April 1998. www.virusmyth.com
59. <i>Lancet</i> , The (2006) The Antiretroviral Therapy Cohort Collaboration. Vol 368. August 2006
60. Mbeki, Thabo. Letter to World Leaders. 3 April 2000. Text Chapter 4
61. Ibid. Address First Meeting of Presidential Aids Advisory Panel. 4 May 2000 Text Chapter 4

62. McCormick, Joseph B and Fisher-Hoch, Susan. (1996) Level 4: Virus Hunters of the CDC. Atlanta: Turner Publishing, pp. 188-90).
63. McPherson, M.F. (2001) "HIV/AIDS Impacts on Capacity Deepening and Economic Growth" Paper presented at The Brookings Institution, Washington D.C.
64. Medical Research Council (MRC) (2003). Policy Brief No 3. The Burden of Disease Research Unit. December 2003.
65. Montagnier, L. (2000) Written testimony to US House of Representatives, Committee on Government Reform, Subcommittee on National Security, Veterans' Affairs and International Relations. February 2, Washington, D.C
66. Monyemangene, M (2005) Email Subject: Enquiry on ARVS. 6 October 2005
67. National Institute of Allergic and Infectious Diseases. (NIAID) The Evidence that HIV causes AIDS Version: February 2003 http://www.niaid.nih.gov/factsheets/evidhiv.htm .
68. Padian, NS, Shiboski, SC, Glass, SO, Vittinghoff, E (1997) Heterosexual Transmission of Human Immunodeficiency Virus (HIV) in Northern California: results from a ten-year study. American Journal of Epidemiology 146: 350 - 357
69. Papadopoulos-Eleopolus.E, E et al (1996) Continuum Vol 4 No3 Sept/Oct 1996.
70. Ibid (2001) Nevirapine and AZT and Mother-to-Child Transmission of HIV. Monograph compiled at request of President Thabo Mbeki. Released October 2001.
71. Popovic M, Sarngadharan MG, Read E, Gallo RC. (1984). Detection, Isolation, and Continuous Production of Cytopathic Retroviruses (HTLV-III) from Patients with AIDS and Pre-AIDS. Science 224:497-500.
72. Presidential Aids Advisory Panel Interim Report (PAAPIR). (2001) "A synthesis report of the deliberations by the panel of experts invited by the President of the Republic of South Africa, the Honourable Mr Thabo Mbeki". March 2001.
73. Ibid. Chapter 4. HIV tests and their accuracy. 4.2 Virus isolation and co-culturing.
74. Press/Macmillan USA 1993, 527 pages, ISBN 0-02-926905-9.
75. Public Protector of South Africa (2004) Report of the Public Protector on an investigation into allegations of impropriety in connection with the approval by Cabinet of an Operational Plan for Comprehensive HIV and AIDS Care, Management and Treatment for South Africa, designed by the National Department of Health. Case No 7/24846/03. 29 October 2004. www.polity.org.za .
76. Rehle T, Shisana O, Pillay V, Zuma K, Puren A and Parker W (2007) The National HIV incidence measures - new insights into the South African epidemic. South

African Medical Journal. Vol 97 No 3. March 2007.
77. Reserve Bank annual economic Report (www.reservebank.co.za)
78. Roche Diagnostics Corporation. (1999) Amplicor HIV-1 Monitor Test. US: 83088.
79. Rodriguez, B and Lederman, M J (2006) "Predictive value of plasma HIV RNA level on rate of CD4 T cell decline in untreated HIV infection" (Rodriguez et al, JAMA 296:1498-1506, 2006), Journal of the American Medical Association (JAMA) 27 September 2006.
80. Root-Bernstein. (1993) 'Rethinking AIDS; The tragic cost of premature consensus' The Free Press/Macmillan USA 1993, 527 pages, ISBN 0-02-926905-9.
81. Ibid (1995) five myths about Aids that have misdirected research and treatment. Genetica 95: 111232.
82. Russel 2002;
83. Sarngadharan M, G., Popovic M, Bruch L. (1984). Antibodies Reactive to Human T-Lymphotropic Retroviruses (HTLV-III) in the Serum of Patients with AIDS. Science 224:506-508.
84. Schupbach J, Popovic M, Gilden RV, Gonda MA, Sarngadharan MG, Gallo RC. (1984).). Serological analysis of a Subgroup of Human T-Lymphotropic Retroviruses (HTLV-III) Associated with AIDS. Science 224:503-505.
85. Shah, K and Nathanson, N (1976) Human Exposure to SV40: Review and Comment. American Journal of Epidemiology Vol 103.
86. Skordis, J. & Nattrass, N., 2002. Paying to waste lives: the affordability of reducing mother-to-child transmission of HIV in South Africa. <i>Journal of Health Economics</i> 21: 405-421
87. Statistics South Africa (Statssa) (2005) Mortality and causes of Death in South Africa, 1997-2003. Findings from death notification. February 2005.
88. Ibid. (2006) Mortality and causes of Death in South Africa, 2003-2004. Findings from death notification. May 2006
89. Sutherland, RK. (2005) A New Dawn for Antiretrovirals. British Medical Journal 330: 371. 12 February 2005.
90. Turner, V and McIntyre, A. The Yin and Yang of HIV: a Great future behind it. Rethinking AIDS. Jan 1999 www.virusmyth.com/AIDS/perthgroup/yinyang
91. Urnovitz, HB. (2000) AIDS: A "Host vs. Genome" Disease With An Associated "Virus": Statement for the Durban AIDS Conference. 7 April 2000.
92. Ibid. (2001) HHS fails to make case that HIV causes AIDS. Correspondence Regarding Signers of Durban Declaration.) Case 2001 - 18. 1 October 2001.

93. Ibid. (1996) Testimony to Committee on Government Reform and Oversight: subcommittee on Human Resource and Intergovernmental Relations. US House of Representatives. 28 March 1996
94. Ibid. (1999) Testimony to Committee on Government Reform and Oversight: subcommittee on Human Resource and Intergovernmental Relations. US House of Representatives. 3 August 1999.
95. Ibid. (2000) Testimony to Committee on Government Reform and Oversight: Subcommittee on Human Resource and Intergovernmental Relations. US House of Representatives. 2 February 2000, Washington, D.C
96. Ibid (2002) Testimony to Committee on Government Reform and Oversight: Subcommittee on National Security, Veterans Affairs and International Relations. US House of Representatives. 24 January 2002.
97. Urnovitz, HB and Murphy, WH. Human endogenous retroviruses: nature, occurrence, and clinical implications in human disease. Clin Microbiol Rev. 9:72-99. 1996.
98. Ibid (1996) Letter to the Editor. Clin Microbiol Rev Oct 1996 Vol 9, No 4, p. 585
99. Vartian JP, Meyerhans A, Henry M, et al. (1992) High-resolution structure of an HIV-1 quasispecies: Identification of novel coding sequences. AIDS.6:1095-1098
100. Van Rensburg, D., Friedman, I., Ngwena, C., Pelsler, A., Steyn, F., Booysen, F. & Adendorff
100. Wain-Hobson S. (1995) Virological mayhem. Nature 373:102.
101. Wang L et al. 1998. Apoptotic killing of CD4+ T lymphocytes in HIV-1-infected PHA-stimulated PBL cultures is mediated by CD8+ LAK cells. Virology. 241(2):169-80.
102. World Health Organisation (WHO). (1986) Epidemiological Record No 10 March 7, 1986, page 71
103. Ibid (2003) HIV and AIDS in Africa: Lessons from the WHO consultation on nutrition and HIV/AIDS.
104. Ibid. (2006) Preventing disease through healthy environments . 16 June 2006. Geneva. http://www.who.int/mediacentre/news/releases/2006/pr32/en/print.html
103. Williams, B et al. (2006) Journal of Infectious Diseases, vol 194, p 1450.

HIV/AIDS Websites

1. www.aidsinfobbs.org - The AIDS Info BBS Database.
2. www.aidstruth.org - Developed in March, 2006, by Bob Funkhouser of Los Alamos National Laboratory, Nathan Geffen of the Treatment Action Campaign, John P. Moore MD of Weill Medical College of Cornell University, Professor Nicoli Nattrass, director of the AIDS and Society Research Unit, University of Cape Town, Richard Jeffrey of the Treatment Action Group, Jeanne Bergman of HealthGAP, Gregg Gonsalves of the AIDS and Rights Alliance for Southern Africa, and Bette Korber PhD of Los Alamos National Laboratory.
3. www.chronicillnet.org - web site of the Chronic Illness Research Foundation, California.
4. www.crisisweb.org - website of the International Crisis Group (ICG) - Washington/Brussels based a private, multinational organisation committed to strengthening the capacity of the international community to anticipate, understand and act to prevent and contain conflict.
5. www.duesberg.com - web site of Dr. Peter Duesberg.
6. <http://home.earthlink.net/~revdocnyc> - Health Education AIDS Liaison (HEAL), New York
7. www.honestdoctor.org - website of Dr. Jonathan Fishbein.
8. www.journaids.com - website of University of Witwatersrand's School of Journalism.
9. www.redflagsdaily.com - Canadian-based independent health news est. Nicholas Regush. Editor Barbara Lewis.
10. www.rethinkingaids.com - official website of the Group for the Reappraisal of AIDS.
11. www.robortogiraldo.com - website of Roberto Giraldo MD, in Spanish and English, as well as references to resources in many other languages.
12. www.tac.org - website of Treatment Action Campaign
13. www.theperthgroup.com - website of The Perth Group, University of Western Australia and Royal Perth Hospital.
14. www.virusmyth.com - a site run by Robert Laarhoven documenting the HIV/AIDS controversy.