

# THE ECONOMIC IMPACT OF HIV/AIDS ON THE PRIVATE SECTOR

BY

ESME ROSE

MINI- DISSERTATION

for the purposes of completing the requirements for the degree

MAGISTER COMMERCII

in



FACULTY OF ECONOMIC AND MANAGEMENT SCIENCE

at the

RAND AFRIKAANS UNIVERSITY

STUDY LEADER: DOCTOR S CHETTY

MAY 2001

## PRESIE

Die doel van hierdie studie was om informasie te verskaf aangaande die areas in die privaat sektor waarbinne VIGS 'n impak sal hê en om hierdie impak te kwantifiseer.

Hoofstuk Twee verskaf die jongste VIGS statistiek. Hoofstuk Drie illustreer die verskillende maniere hoe VIGS impakteer op verskillende maatskappye in Suid Afrika. Die studie toon dat die impak op besighede substansieel sal wees in terme van verminderde produksie, verhoogde werknemerskoste en verminderde winste. Hoofstuk Vier kwantifiseer die verliese wat maatskappye sal lei indien hulle nie voorkomende programme implementeer nie asook die besparings wat hulle kan maak indien hulle voorkomende programme implementeer.

Hoofstuk Vyf verwys na die hoë risiko sektore in terme van hulle vertroue op 'n hoë risiko werkersmag in terme van hulle demografie (ouderdom, geslag en inkomste) en hulle vertroue op 'n geskoolde werkersmag. Maatskappye, in besonder dié met 'n groot hoeveelheid werknemers binne die hoë risiko groep, sal die invloed van die siekte beter moet bestuur en hanteer.

Hoofstuk Ses toon dat ons nie sonder hoop is nie en dat VIGS programme geïmplementeer is wat sukses behaal het.

In die lig van die jongste VIGS statistiek vir Suid Afrika is die tyd om passiel op te tree en te hoop dat die probleem sal weg gaan verby. Ander lande het bewys dat daar 'n

positiewe impak op die uitwerking van die epidemie gemaak kan word – 'n voorbeeld  
wat ons gerus kan volg.



## **SYNOPSIS**

The objective of this study was to provide the necessary information regarding the areas in which HIV/AIDS will impact on the private sector and also to quantify the impact of HIV/AIDS on the private sector.

Chapter One introduces HIV/AIDS. Chapter Two provides the latest statistics regarding the epidemic. Chapter three illustrates the various ways in which HIV can and will impact on various companies within the South African economy. The chapter shows that the impact on business in South Africa will be substantial not only in terms of the loss of productive labour but also in terms of the potential cost implications as AIDS affects the workforce. Chapter four quantifies the losses that will be incurred if prevention programmes are not implemented as well as the savings that can be made if prevention programmes are implemented. Chapter five draws attention to the sectors that are most at risk with respect to loss of labour and reliance on a skilled labour force. Corporations, especially those with large numbers of employees in the high risk age group, will have to manage and cope more with the impact and burden of this disease.

Chapter Six illustrates that we are not helpless against the epidemic. Intervention programmes have been implemented in South African companies which have been shown to be successful.

In the light of the latest HIV figures for South Africa we cannot afford to sit back and hope that the problem will pass us by. Other countries have managed to impact positively on the epidemic and so can we.



<b>LIST OF TABLES AND FIGURES .....</b>	<b>3</b>
<b>ACKNOWLEDGEMENTS .....</b>	<b>4</b>
<b>CHAPTER 1 GOAL AND OBJECTIVE OF THE STUDY .....</b>	<b>5</b>
1.1 INTRODUCTION .....	5
1.2 RATIONALE OF THE STUDY .....	6
1.3 RESEARCH OBJECTIVES .....	6
1.4 ORGANISATION AND METHODOLOGY .....	7
<b>CHAPTER 2 HIV &amp; AIDS .....</b>	<b>10</b>
2.1 INTRODUCTION .....	10
2.2 DEFINING HIV AND AIDS .....	12
2.2.1 The name "AIDS" .....	12
2.2.2 The genotypes of HIV .....	12
2.2.3 The link between HIV & AIDS .....	13
2.2.4 HIV transmission .....	16
2.3 THE HIV/AIDS EPIDEMIC .....	16
2.4 PREDICTIONS OF THE FUTURE OF THE AIDS EPIDEMIC .....	19
2.5 IMPACT OF HIV/AIDS ON THE SOUTH AFRICAN ECONOMY .....	21
2.6 SUMMARY .....	22
<b>CHAPTER 3 THE IMPACT OF HIV/AIDS ON THE PRIVATE SECTOR .....</b>	<b>24</b>
3.1 INTRODUCTION .....	24
3.2 AN OVERVIEW OF THE ECONOMIC IMPACT OF HIV/AIDS ON THE PRIVATE SECTOR .....	25
3.3 EMPLOYEE BENEFIT COSTS .....	26
3.3.1 Medical benefits and sick leave .....	27
3.3.2 Risk benefits .....	28
3.3.3 Retirement benefits .....	29
3.3.4 Spouses' & children's pensions .....	30
3.4 ABSENTEEISM & PRODUCTIVITY .....	30
3.5 RECRUITMENT & TRAINING .....	32
3.6 LOSS OF MARKET .....	33
3.7 PROFIT .....	34
3.8 IMPACT OF HIV/AIDS ON THE COMPOSITION OF THE LABOUR FORCE .....	37
3.9 SUMMARY .....	38
<b>CHAPTER 4 QUANTIFYING THE HIV/AIDS RISK .....</b>	<b>40</b>
4.1 INTRODUCTION .....	40
4.2 THE FUNDAMENTALS OF THE AIDS IMPACT CALCULATOR .....	41
4.3 QUANTIFYING THE AIDS IMPACT ON A COMPANY .....	44

4.3.1	A worst case scenario .....	46
4.3.2	A best case scenario.....	47
4.4	SUMMARY .....	48
<b>CHAPTER 5 SECTORAL VULNERABILITY TO HIV/AIDS .....</b>		<b>50</b>
5.1	INTRODUCTION.....	50
5.2	SECTORS HIV/AIDS RISK .....	50
5.3	SUMMARY .....	53
<b>CHAPTER 6 HIV/AIDS INTERVENTION PROGRAMMES .....</b>		<b>54</b>
6.1	INTRODUCTION.....	54
6.2	CAN HIV BE CURED? .....	54
6.3	HIV/AIDS PROGRAMMES AND THE PRIVATE SECTOR .....	55
6.3.1	Why Companies? .....	56
6.3.2	Which programmes should be implemented? .....	59
6.3.2.1	HIV/AIDS Education Programs .....	60
6.3.2.2	Sexually Transmitted Diseases Programs.....	61
6.3.2.3	Turberculosis Programs .....	62
6.3.2.4	Condom promotion.....	63
6.3.2.5	How should programmes be implemented?.....	63
6.4	CURRENT HIV/AIDS PROGRAMMES IN THE SOUTH AFRICAN PRIVATE SECTOR.....	64
6.5	WHAT GOVERNMENTS CAN DO .....	67
6.6	SUMMARY .....	69
<b>CHAPTER 7 CONCLUSION AND RECOMMENDATIONS .....</b>		<b>71</b>
7.1	INTRODUCTION .....	71
7.2	FINDINGS OF THE RESEARCH.....	71
7.3	RECOMMENDATIONS.....	72
7.4	FINAL THOUGHT .....	73
<b>REFERENCES .....</b>		<b>74</b>

## **LIST OF TABLES AND FIGURES**

- Table 2.1 Global summary of the HIV/AIDS epidemic
- Table 2.2 Impact of the HIV/AIDS epidemic on the South African population
- Table 3.1 Total cost of Aids to different companies
- Figure 3.1 The impact of HIV/AIDS on companies
- Table 4.1 Worst case scenario of the financial impact of HIV/AIDS on a high risk company
- Table 4.2 Best case scenario of the financial impact of HIV/AIDS on a low risk company
- Table 5.1 Impact of HIV/AIDS on different sectors

## **ACKNOWLEDGEMENTS**

Thank you to all my colleagues at African Life Assurance as well as the Reassurers and Wayne Myslik of Lifeworks for the information and support that they have given me during my HIV/AIDS research. Thank you also to my friends and family for giving me the motivation to continue with my studies. Also to my supervisor Dr. Chetty, this dissertation would not have been possible without your support and valuable contributions.



# CHAPTER 1

## GOAL AND OBJECTIVE OF THE STUDY

### 1.1 INTRODUCTION

“Only 15 years ago, if one had called business, labour, government and non-government representatives together to discuss how to deal with the AIDS epidemic, most would not have even more than a fleeting idea of what it was, let alone why they should discuss it. Today, companies have lost top managers, workers have lost colleagues and huge amounts of time, energy and emotion have been spent pre-occupied with issues of illness and loss. Whole families have collapsed, while companies struggling against a background of chronic poverty have taken on deeper burdens of dependency” (Smart, 1999).

Disease prevention and health promotion have not commonly been thought of as a business concern. However, the Human Immunodeficiency virus / Acquired Immunodeficiency Syndrome (HIV/AIDS) epidemic has forced a reconsideration of this position. AIDS causes illness, disability and death to workers and this in turn significantly increases the cost of doing business. South Africa faces a large epidemic and as a result AIDS is an issue on which business must take urgent and incisive action.

## **1.2 RATIONALE OF THE STUDY**

The rationale of the study is that South African companies seem to be complacent about the epidemic possibly because they are ignorant about its impact. This complacency is illustrated by a corporate survey on companies' response to AIDS in 1998 (Whiteside & Sunter, 2000:103 & 104). Questionnaires were sent out to 16 companies and only 4 responded. A further example is the 1998 survey by the Health Economics & HIV/AIDS Research Division (HEARD) where HEARD approached sixty companies to participate in HIV/AIDS research with the aim of documenting the "best practices" in the management of HIV and AIDS at the workplace. This research was destined for a manual entitled "Best Practices: Company Activities on HIV/AIDS in Southern Africa". Only fourteen case studies were finally published (Michael, 2000). The lack of participation highlights the complacency of business towards the HIV/AIDS epidemic. Clearly business is not yet sufficiently aware and therefore not sufficiently concerned about what may happen to their companies.

## **1.3 RESEARCH OBJECTIVES**

Policymakers and programme developers are often not aware of the severe impact of HIV/AIDS. (International Labour Office 3, 2000:38) This could be because they do not have the necessary information at hand and as a result they do not see the urgency for early intervention to prevent the spread of HIV.

The objective of this study is to provide the necessary information regarding the areas in which HIV/AIDS will impact on the private sector and also to quantify the impact of HIV/AIDS on the private sector. Although much research has been done on the

mortality and morbidity implications of HIV/AIDS as well as the areas of impact this may have on a company, for example employee benefits, no written research has brought all of these together and translated it into quantifying the impact of HIV/AIDS on the workplace. Instead all these areas have been considered in isolation. This thesis will therefore congregate this information into a digestible whole.

It is important to clarify that the motivation or rationale of the study is to bring about awareness of the impact of HIV/AIDS on the private sector. However, the focus of the thesis is to gather all the available information regarding the impact of HIV/AIDS on the private sector. It is hoped that this information will convince companies to take action because averting an HIV infection through prevention has been noted to yield a cost-benefit ratio to companies of 1:2 to 1:400 (Smart, 1999). Whether or not the companies will in fact react is not the focus of the thesis but is purely a motivation for gathering and formulating the information.

#### **1.4 ORGANISATION AND METHODOLOGY**

As discussed above, the aim of the study is to provide information about the impact of HIV/AIDS on the private sector. In order to do this one first needs to have a clear understanding of what HIV/AIDS is. Chapter 2 will therefore introduce HIV/AIDS and the modes of transmission.

Chapter three uses existing research to outline the areas in which HIV/AIDS will financially impact on a company. The chapter will also use published data to provide some statistical evidence of the impact of HIV/AIDS on companies. This statistical

evidence is drawn from other countries' experience as well as the experiences of some South African companies.

Chapter four focuses on the AIDS Impact Calculator developed by Lifeworks. The AIDS Impact Calculator is intended to enable companies to quantify the financial impact of HIV/AIDS on their own company. This chapter therefore moves away from research of other companies and other countries and provides information on how the calculator will calculate the impact of HIV/AIDS on a particular company. The chapter first explains the fundamentals of the calculator and then moves on to give some financial illustration of the best financial case scenario and the worst financial case scenario. The chapter highlights the fact that there are tools available to companies which will enable companies to consider their own circumstances more closely.



Chapter five takes the impact of HIV/AIDS on the private sector a step further by analysing which sectors are most at risk. A survey of existing research provides evidence of the population groups most at risk. The chapter analyses the enterprise's labour force with respect to the demographics, income levels and the geographic area of the labour force. It then takes this information and considers whether a particular labour force's demographics match those of the population group that is most at risk to HIV/AIDS. If there is a close match then the industry is considered to be a high risk industry.

Chapter six contains the conclusions and recommendations regarding the intervention programs. The impact on the private sector will depend on whether or not intervention programmes are introduced and it is for this reason that the thesis also mentions

possible HIV intervention programs. The chapter discusses (with the aid of existing research) which programmes should be implemented and whether this is the private sector's responsibility, the public sector's responsibility or the responsibility of both the private sector and the public sector.



## CHAPTER 2

### HIV & AIDS

#### 2. 1 INTRODUCTION

The signs and symptoms of the Human Immunodeficiency Virus / Acquired Immunodeficiency Syndrome (HIV/AIDS) were first observed in the United States during 1979 and 1980 (Whiteside & Sunter, 2000:1). The virus that caused AIDS was however only identified as the Human Immunodeficiency Virus 1 (HIV-1) in 1983. Initially most cases were seen in homosexual men but there was soon evidence of cases among hemophiliacs and recipients of blood transfusion. The disease was given the name Acquired Immunodeficiency Syndrome, shortened to the acronym of AIDS (Whiteside & Sunter, 2000:1).

In 1985, a second Human Immunodeficiency Virus labelled HIV – 2 was identified in humans (Whiteside & Sunter, 2000:2). HIV- 2 is a slower acting virus, which is found mostly in West Africa. In Southern Africa the dominant strain is HIV –1. This is the strain that will be discussed in this dissertation and will henceforth be referred to as HIV.

HIV/AIDS was observed in South Africa about a decade after the epidemic began to spread in the countries of East and Central Africa and in particular Uganda. Migrant labour is blamed for the rapid geographical spread of the disease. The virus is thought to have entered South Africa from these northern countries through the trucking routes that end in Durban. The virus then spread from Durban to the rest of South

Africa. This was reflected in the provincial rates at the end of 1997, with the worst affected provinces being KwaZulu-Natal and Mpumalanga, where the HIV positive rates at antenatal clinics were 27 and 22 percent respectively. Second in line were Gauteng, the Free State, the Eastern Cape and the North West Province with HIV positive rates of 12-19 percent, they were followed by the Northern Cape and the Northern Province at 8 percent and the Western Cape at 6 percent (CSIR, 2000). This provincial “line up” has remained the same over time with 2000 figures reported to be the highest in KwaZulu Natal at 32.5% and the lowest in the Western Cape at 7.1% (Deutsche Securities, 2000: 6).

Throughout Africa HIV infection doubles in about one year. This means that, on average, each person infected with HIV infects one other person a year (CSIR,2000). United Nations AIDS figures reported in June 2000, estimated that globally there were 34.3 million people living with HIV, 5.4 million of which became infected in 1999 alone (Daly, 2000:8).

This chapter explains HIV/AIDS, looks at the current HIV/AIDS status and also looks at which groups will be most affected by the epidemic. The chapter then moves on to consider the predictions for the future of the epidemic.

It is important to illustrate the current HIV/AIDS status in South Africa because this raises awareness of the extent of the epidemic. It is also important to know the impact that HIV/AIDS will have on the demographics of the South African population. This information will draw attention to the fact that the most productive portion of the population group, the labour force and consumers in the age group of 20 to 50 will be affected. This could serve as a warning to companies whose target market is the 20 to

50 year age group. If this is the company's target market then the company may find it necessary to reassess/change their target market.

## **2. 2    DEFINING HIV AND AIDS**

### **2. 2 .1     The name "AIDS"**

The name AIDS is derived as follows (Whiteside & Sunter, 2000:1)

"A" stands for Acquired. This is because the virus has to be acquired. The virus is not spread through casual or inadvertent contact like flu or chickenpox. In order to be infected, a person has to do something or have something done to them which exposes the virus.

"I" and "D" stand for immunodeficiency because the virus attacks the individual's immune system making them less capable of fighting infections. Therefore, the immune system becomes deficient.

"S" is for Syndrome. AIDS is a syndrome; it is not just one disease because it presents itself in a number of diseases that come about as the immune system fails.

### **2. 2 .2     The genotypes of HIV**

There are at least nine genotypes of HIV – 1, which are not evenly distributed around the world. The global HIV pandemic appears to be comprised of at least five major epidemics (A – E) each caused by a distinct viral genetic variant. B predominates in the Americas, Europe and Australia; A and D in East Africa; C in Southern Africa and E in Southeast Asia. This ongoing evolution of HIV is the result of the mutation and

recombinations, which occur from the 'crossing over' between the RNA genome-strands (Moodley, 1999). These mutations result in the formation of altered forms of these enzymes that are no longer inhibited by anti-viral drugs. This has led to drug resistance and has consequently become an important problem in the treatment of HIV (Moodley, 1999 & Daly, 2000:7).

### **2. 2 .3      The link between HIV & AIDS**

AIDS is an acquired immunodeficiency syndrome. Most people concur that there are other causes of immunodeficiency such as stress, deficient diet, malnutrition, inadequate hygiene, poor healthcare and repeated exposure to disease-causing agents. People living in poverty are much more likely to suffer from immunodeficiency (Metropolitan Life). In addition we have immunodeficiency diseases which directly impair components of the immune system, rendering it less effective. Most of these diseases are regarded as genetic, and relatively few as acquired (Metropolitan Life<sup>1</sup>). AIDS however, is an acquired immunodeficiency, and the fact that it is "acquired" being the one thing that differentiates it from other immunodeficiency diseases.

These other immunodeficiency diseases may result in symptoms similar to those of AIDS. However, for a person to be described as having AIDS he/she (in addition to having the symptoms of an immunodeficiency disease) will have to be infected with the Human Immunodeficiency Virus (HIV). Therefore if the HI Virus is not present in the blood then these other immunodeficiency diseases cannot by definition be classified as AIDS (Metropolitan Life). Furthermore, the presence of the HI Virus is not sufficient for a definite AIDS diagnosis. To clarify, the HIV enters the body and

---

<sup>1</sup> In 1998, Metropolitan Life Assurance bought the Southern African edition of AIDS Analysis Africa and in 1999 they took over the UK African edition. The two African editions then merged to produce a newsletter that has just entered its tenth year of publication. As a result

attaches itself to host cells. HIV then starts to attack specific cells in the immune system called CD4 cells (Whiteside & Sunter, 2000:7). The CD4 cells organise the body's overall response to foreign bodies and infections. The HIV slowly kills off these cells and a person is only diagnosed as having HIV once their CD4 count falls below 200. The average CD4 count is 1000.

According to Doyle (Metropolitan Life) the argument of whether HIV causes AIDS has become "a national obsession which distracts our attention from the real problem of how we in South Africa should be fighting the pandemic"<sup>2</sup> (Metropolitan Life). A person will not have AIDS if they do not have the HI Virus. This clearly demonstrates a link between the two. Scientific studies show that the HI Virus is the most likely cause of the acquired immunodeficiency syndrome. All the existing evidence points to the fact that HIV does lead to AIDS, it is however not understood exactly how this happens (Metropolitan Life). It is believed that AIDS sickness is the most likely outcome of HIV infection but it has not been proven that all HIV infected people will eventually become AIDS sick.

In line with this believe, it is believed that HIV precedes AIDS by about 6 to 8 years (Whiteside & Sunter, 2000:26). reflecting the incubation period between being infected and the onset of the illness. The epidemic is therefore silent. It is only when the HIV pool has risen to a considerable level that the true impact of the epidemic will be felt in terms of AIDS deaths.

---

metropolitan has become one of the leaders with respect to HIV/AIDS research in South Africa.

<sup>2</sup> So says Peter Doyle, currently group managing director of Metropolitan. Doyle was responsible, when still involved in actuarial research, for the development of the Metropolitan Doyle model

The stages from HIV infection to AIDS can be defined as follows:

Stage 1: This is the stage where the person is infected with the HI Virus.

Stage 2: This is also known as the “window period”. It is the period where the person has the HIV infection but has no signs or symptoms of the disease and no detectable antibodies. The virus is undetectable during this period and an HIV antibody test will be negative even though the virus is present. This is known as a false negative result. The reason for this false negative test is that it takes 2 – 12 weeks for the immune system to develop antibodies that can be detected in the bloodstream. The window period usually lasts 2 – 12 weeks, but may last several months or occasionally even longer (National Department of Health (DOH), 2000 & Metropolitan Life).

Stage 3: This is the seroconversion stage where the antibodies develop. This stage may be accompanied by a few days of flu-like illness. Some people however experience no illness at this stage.

Stage 4: During this stage antibody tests are positive, but there are no apparent signs or symptoms of illness. This period may last from a few months to many years.

Stage 5: During this stage the signs and symptoms of the diseases increase because the HI Virus will be damaging the immune system. These symptoms are not life threatening. Examples of these symptoms are diarrhoea, swollen glands and night sweats. This period may continue for months or years. Infections will gradually become more persistent and serious.

Stage 6: This is the stage where the person has full-blown AIDS. It is during this stage that life threatening infections and cancers occur due to the immune system being severely weakened. The patient could die when an untreatable life-threatening condition develops. The life expectancy at this stage depends on the conditions that develop and the treatments available (Metropolitan Life).

#### **2.2.4 HIV transmission**

HIV can be transmitted in a number of ways (Brits, 1996: 26 & Whitehead & Sunter, 2000:14 & DOH 2000 & ILO, 2000:36). These include sexual intercourse, sharing needles (and other sharp object that can cause bleeding for example razors) blood transfusions, the use of infected blood products or any contact where blood is transferred including contact involving open bleeding wounds. There has even been a report of the transmission of HIV through sports (Whiteside & Sunter, 2000:10). HIV can also be transferred from an HIV mother to her baby before or during birth. However, not all pregnant women who have HIV/AIDS pass the virus onto their babies. The current rate of mother to child transmission is 25 percent. This means that 75 percent of babies born of HIV positive mothers are born without the virus, even if they had no anti-retroviral drugs (Tshabalala-Msimang: 2000).



The HIV/AIDS problem in South Africa is largely heterosexual (ILO, 2000: 10 & ILO, 2000b: 5). and a very important contributor to the rapid rate of increase of the HI Virus in S.A. is the high rates of other sexually transmitted diseases in the population. Several studies show that 30 percent of adults in urban communities are infected with syphilis, gonorrhoea or chlamydia. A patient with one of these diseases, involving ulceration's or discharges, is five to 20 times more likely to acquire HIV infection than someone who is free of them (CSIR, 2000).

### **2.3 THE HIV/AIDS EPIDEMIC**

The global summary of the HIV/AIDS epidemic at the end of 1999 was as follows:

**TABLE 2.1: 1999 GLOBAL SUMMARY OF THE HIV/AIDS EPIDEMIC**

<b>People newly infected with HIV in 1999</b>	<b>Total</b>	<b>5.4 million</b>	<b>100%</b>
	Adults	4.7 million	87.04%
	<i>Women</i>	<i>2.3 million</i>	<i>42.59%</i>
	Children <15 years	620 000	11.48%
<b>Number of people living with HIV/AIDS</b>	<b>Total</b>	<b>34.3 million</b>	<b>100%</b>
	Adults	33.0 million	96.21%
	<i>Women</i>	<i>15.7 million</i>	<i>45.77%</i>
	Children <15 years	1.3 million	3.79%
<b>AIDS deaths in 1999</b>	<b>Total</b>	<b>2.8 million</b>	<b>100%</b>
	Adults	2.3 million	82.14%
	<i>Women</i>	<i>1.2 million</i>	<i>42.86%</i>
	Children <15 years	500 000	17.86%
<b>Total number of AIDS deaths since the beginning of the epidemic</b>	<b>Total</b>	<b>18.8 million</b>	<b>100%</b>
	Adults	15.0 million	79.79%
	<i>Women</i>	<i>7.7 million</i>	<i>40.96%</i>
	Children <15 years	3.8 million	20.21%
<b>Total number of AIDS orphans<sup>3</sup> since the beginning of the epidemic</b>		<b>13.2 million</b>	

Source: (UNAIDS, 2000: 5)

Estimates in 1991 predicted that by the end of the decade, 9 million people in sub-Saharan Africa would be infected and 5 million would die. This is a threefold underestimation of the actual incidence (UNAIDS, 2000: 5).

Sub-saharan Africa has been hardest hit by the HIV epidemic (ILO, 2000b:43 & ILO 2000:1). Recent estimates suggest that of all the 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 are in

<sup>3</sup> Orphans are defined as children who lost their mother or both parents to AIDS when they were under the age of 15.

Sub-Saharan Africa (Metropolitan Life, 2000: 7). The result of this is that sub-Saharan Africa has a life expectancy that is consistently below 50 (Van Der Vliet, 2000b). The life expectancy in South Africa for a male born in 1999 is 47.3 years, and for a female is 49.7 (Van Der Vliet, 2000b). Smart predicts that by the year 2008 the life expectancy for the population as a whole as a result of AIDS will be 40 (Smart, 1999 & ILO, 2000: 14).

South Africa has the fastest growing AIDS epidemic in the world and the epidemic is rising at the rate of 25 –35% per year (CSIR, 2000) South Africa has now entered the second decade since the first cases of HIV/AIDS were identified (Eskom, 2000) As a whole there are approximately 4.2 million South Africans living with HIV. It is estimated that by the year 2005, there will be 6 million South Africans infected with HIV and almost 1 million children under the age of 15 whose mothers will have died of AIDS (Metropolitan Life, 2000).

In South Africa it is the richer of the poor who are more vulnerable and women are particularly vulnerable (ILO, 2000: 37). Research shows that young women of child bearing ages 15 to 24 are twice as likely to get infected than males in the same age group (ILO, 2000:10 & Metropolitan Life, 2000). This is reiterated in the UNAIDS report (2000:10) where they found that close to 6 out of 10 teenage girls and women under 25 in Carletonville, South Africa, tested positive for HIV. It is believed that the widely held cultural practices that accept multiple partnering by males, the lower socioeconomic status of women, and the greater efficiency of male to female transmission all make women particularly vulnerable to the disease (ILO, 2000: 10).

Currently the South African HIV/AIDS data comes from antenatal clinics, which some analysts consider to be our best guide to South Africa's AIDS epidemic (Van Der Vliet, 2000). The survey of HIV positive woman at antenatal clinics is then used to extrapolate data about men (Van Der Vliet, 2000). Many authors such as Daly (2000:7) and Van der Vliet (2000b) believe that there may be inaccuracies in the data representing the number of people with HIV in South Africa. There are many reasons for this such as the unwillingness of medical staff to report cases. AIDS cases are no longer reported in South Africa there have however been moves to reintroduce the practice.

Research suggests, too, that as HIV spreads it causes infertility, so even women of childbearing age may be under-represented in the sample since they are not attending these clinics (Van Der Vliet, 2000). The stigmatisation of HIV/AIDS may also result in considerable masking and under-reporting of HIV/AIDS data (Daly, 2000:7). The reliability of HIV/AIDS surveillance data is therefore variable and discrepancies between reported and actual cases may be considerable.

## **2. 4 PREDICTIONS OF THE FUTURE OF THE AIDS EPIDEMIC**

The Ing Barring report (2000:6) predicts the affect of HIV/AIDS on the South African population to be as follows:

**TABLE 2.2: IMPACT OF THE HIV/AIDS EPIDEMIC ON THE SOUTH AFRICAN POPULATION**

	AIDS inclusive scenario	Population Growth	No-AIDS scenario	Growth (%)	No-AIDS/AIDS	HIV+	AIDS Deaths	AIDS deaths per 100 normal deaths
1999	45 100 513		45 414 112		0.70%	11.58	0.42	57.6
2000	45 951 123	1.89%	46 447 874	2.28%	1.10%	12.99	0.56	76.7
2001	46 725 267	1.68%	47 478 275	2.22%	1.60%	14.17	0.71	99.2
2002	47 407 203	1.46%	48 503 417	2.16%	2.30%	15.12	0.89	124.6
2003	47 984 178	1.22%	49 521 688	2.10%	3.20%	15.83	1.07	151.7
2004	48 448 709	0.97%	50 531 745	2.04%	4.30%	16.31	1.26	178.7
2005	48 800 591	0.73%	51 532 490	1.98%	5.60%	16.58	1.43	203.5
2006	49 047 777	0.51%	52 523 054	1.92%	7.10%	16.67	1.57	224.3
2007	49 205 482	0.32%	53 502 785	1.87%	8.70%	16.62	1.67	239.9
2008	49 293 678	0.18%	54 471 262	1.81%	10.50%	16.45	1.74	249.9
2009	49 333 750	0.08%	55 428 279	1.76%	12.40%	16.22	1.78	254.8
2010	49 345 370	0.02%	56 373 740	1.71%	14.20%	15.96	1.78	255.5
2011	49 344 408	0.00%	57 307 533	1.66%	16.10%	15.7	1.77	253.4
2012	49 342 079	0.00%	58 229 435	1.61%	18.00%	15.46	1.74	249.3
2013	49 345 084	0.01%	59 139 066	1.56%	19.80%	15.25	1.71	244.4
2014	49 356 321	0.02%	60 035 874	1.52%	21.60%	15.09	1.67	239.2
2015	49 375 762	0.04%	60 919 128	1.47%	23.40%	14.97	1.64	234.2

Source: (Ing Barrings, 2000: 6)

The model shows the population growth without AIDS should be 2.22% in 2001. However because of AIDS this growth will only be 1.68%. The difference between these two growth levels is 753 008. This 753 008 as a percentage of the no AIDS population growth (47 478 275) is 1.6%. This differential is predicted to grow to 23% by 2015 (ING, 2000:6). In the no AIDS scenario, population growth rates are expected to come down from well over 2% per annum to 1.5% by 2015 (Ing, 2000:6).

HIV infection rates are forecast to peak at 16.7% in 2006 and taper off thereafter (Ing, 2000:6). The number of AIDS deaths is expected to rise rapidly and should peak with a four to five year lag in 2010 with 1.8 AIDS deaths per 100 people and 256 AIDS

deaths per 100 normal deaths. AIDS deaths are mainly concentrated in the 25 – 50 age group. That means that the labour force is disproportional more affected than the overall population (Ing, 2000: 6).

Other projections (Metropolitan Life, 2000) indicate that by 2002 a quarter of a million South Africans will die of AIDS each year, and that this figure will rise to more than a million by 2008 (Metropolitan Life, 2000). The national HIV and Syphilis survey protocol of South Africa anticipates 5.6 million HIV positive people in South Africa in five years' time and that, if no medical or behavioural intervention takes place, 2.1 million people would have died as a result of the epidemic (Xoli, 1999:2). More than 18% of the workforce will be infected. The worst case scenario is that we may be following in Zimbabwe and Botswana's footsteps, with HIV prevalence above 40% in various regions (Xoli, 1999:2).



## **2. 5    IMPACT OF HIV/AIDS ON THE SOUTH AFRICAN ECONOMY**

The impact of HIV/AIDS on the South African economy is not the focus of this thesis. However, the private sector and the macroeconomy are for obvious reasons closely linked. The impact of HIV/AIDS on the big picture, the macroeconomy, is therefore briefly discussed.

HIV/AIDS will impact on the economy in many ways. It will for example lead to lower labour productivity, a smaller labour force, cost pressures for companies, lower labour income and increased demand for health services (Ing, 2000:1).

Productivity for the macroeconomy will decline because AIDS will impact on the most productive age group namely the people aged between 20 to 49 years (ILO, 2000: 36 & Xoli, 1999:3). An increase in the mortality of this age group will mean a shrinking of the labour force which is predicted to cost the country 1 percent of GDP every year by the year 2005 (CSIR, 2000).

HIV/AIDS, as will be explained in chapter 3, is also expected to increase the cost of doing business through the increased cost of employees. Part of these costs will in all likelihood be passed on to the end consumer. CPI is therefore expected to increase and increased CPI will lead to further increases in interest rates.

## **2. 6 SUMMARY**

This chapter introduced HIV and AIDS, the link between the two, the types of HIV Virus and the modes of transmission. South Africa's main mode of transmission is through heterosexual sex.

The third section looked at the HIV epidemic and the impact of HIV/AIDS on the South African population. It is believed that sub-Saharan Africa has been hardest hit by the HIV epidemic and that South Africa has the fastest growing AIDS epidemic in the world. The richer of the poor, women and the most productive portion of the population are most affected by the epidemic. Finally the reliability of the HIV/AIDS data was discussed as it is believed that this data may underestimate the extent of the epidemic.

The fourth section considered the predictions for the future of the epidemic.

HIV infection rates are expected to peak at 16.7% in 2006 and AIDS deaths are expected to peak by 2010 with 1.8 AIDS deaths per 100 people and 256 AIDS deaths per 100 normal deaths. More than 18% of the workforce will be infected.

The fifth section very briefly considered the impact of HIV/AIDS on the economy. Concluding that GDP and consumption expenditure will be affected by the epidemic.



## CHAPTER 3

### THE IMPACT OF HIV/AIDS ON THE PRIVATE SECTOR

#### 3.1 INTRODUCTION

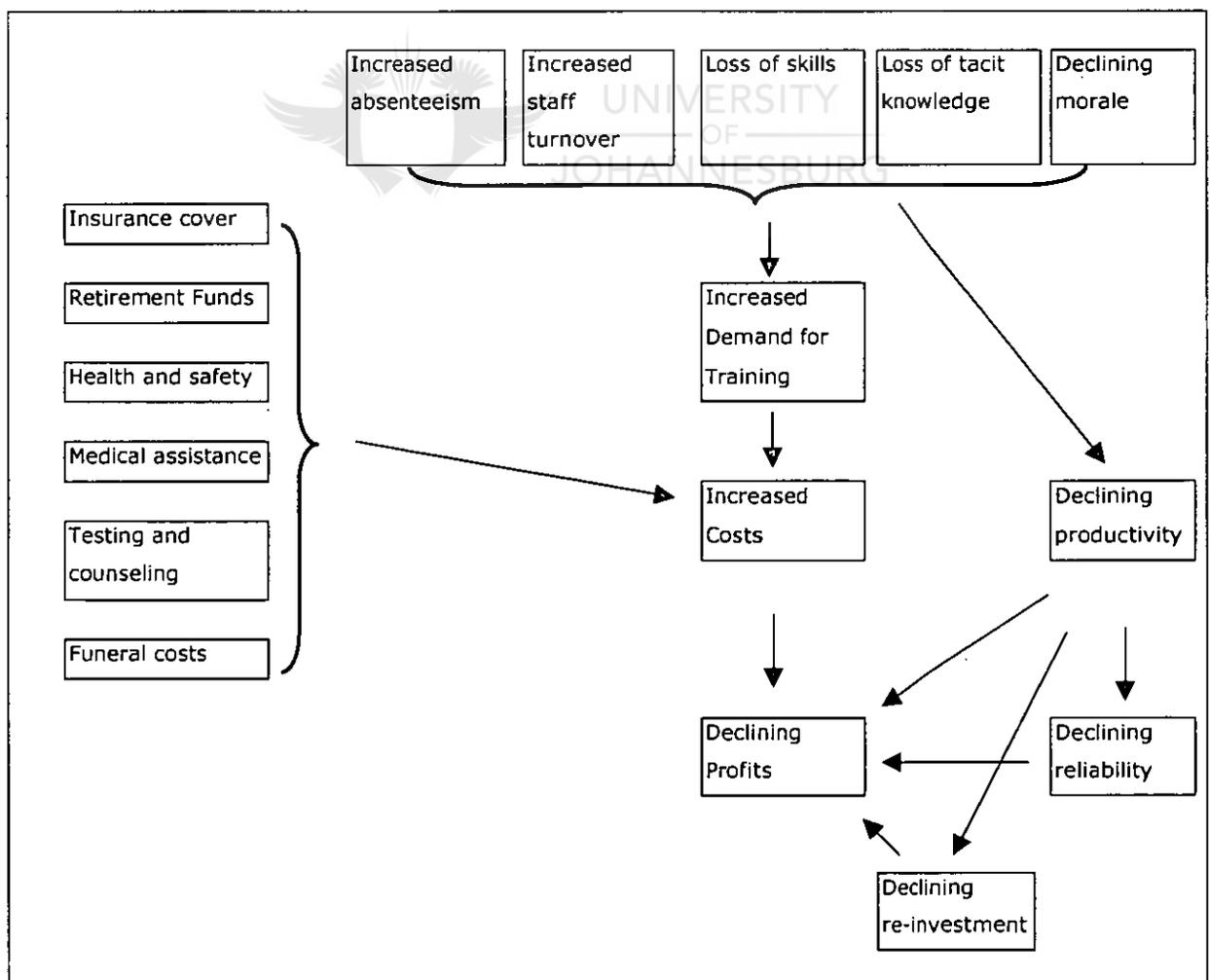
The very long asymptomatic period from initial infection to immune deficiency and life threatening illness of 7 to 10 years, as described in chapter one, has had the effect of delaying the ultimate impact and visibility of the disease on the South African community (Eskom, 2000). People who were infected 7 to 10 years ago are now at the final stage of having AIDS, and therefore, many more symptomatic cases are starting to present themselves. In the coming years the number of people dying from AIDS as well as the number of people living with AIDS opportunistic infections will increase rapidly (Eskom, 2000).

As indicated in the previous chapter, the population group that is most at risk is the most productive group. HIV/AIDS will have a significant financial impact on the private sector as more than 18% of the workforce will be infected in five years time (Xoli, 1999:2). This financial impact will be felt through decreases in productivity, absenteeism, higher employee benefit costs, recruitment and training costs and consequently profits losses. This chapter will consider each of these cost drivers individually.

### 3.2 AN OVERVIEW OF THE ECONOMIC IMPACT OF HIV/AIDS ON THE PRIVATE SECTOR

It is possible to identify two broad areas in which HIV/AIDS impacts on business operation in a company namely productivity and increased costs. This is illustrated diagrammatically in Figure 3.1. The figure shows that the decrease in productivity and the increase in costs due to HIV/AIDS will result in a decrease in profits. A number of authors (Whiteside & Sunter, 2000:99; Ing, 2000:11; ILO, 2000:9; Eskom 2000; ILO, 2000c; Smart, 1999; DOH, 2000; ILO, 2000b) concur with the model regarding the economic impact of HIV/AIDS on a company.

**FIGURE 3.1: THE IMPACT OF HIV/AIDS ON COMPANIES**



Source: (Daly, 2000:15)

An example of the financial impact of HIV/AIDS on a company in South Africa is the report on Eskom “Managing the impact of AIDS in the workplace” In this report it is predicted that the overall cost of HIV/AIDS to Eskom will be R156 million in the next decade. Old Mutual Actuaries and Consultants estimated that the overall direct costs to Eskom of the HIV/AIDS epidemic will reach 15% of payroll from 2005 onwards. By that year AIDS will increase the cost of ill-health retirements to almost 10% of the salary bill; and it would raise the cost of insured benefit schemes by 1% to 4.1% or more of the payroll.

### **3.3 EMPLOYEE BENEFIT COSTS**

The costs (outlined in figure 3.1.) of insurance cover, retirement funds, health and safety, medical assistance, testing and counselling and funeral costs all form part of employee benefit costs. This section looks at the increase in employee benefit costs in South Africa as a result of HIV/AIDS. Obviously the extent of the increased costs to each company will depend on exactly what employee benefits are provided. Companies will either have to pay the higher premiums demanded by the suppliers of employee benefits or they will have to reduce the benefits that they offer their staff (ILO, 2000c: 29 & DOH 2000). A survey conducted during 1990 by Old Mutual showed that 30% of companies in South Africa are opting to lower the benefits that they pay to their employees as a result of the rising number of claims related to HIV/AIDS. Old Mutual estimated that, without these adjustments, the proportion of the wage bill paid out in death benefits by a typical company in some provinces would rise by two thirds between 1997 and 2002 (ILO, 2000c: 29).

In South Africa, typical employee benefits include medical aid, group life insurance and pensions (DOH, 2000). This section will therefore largely focus on these three areas of employee benefits.

### **3.3.1 Medical benefits and sick leave**

As the epidemic progresses, a growing number of employees will take sick leave. Payment of salary during sick leave will increase as more employed people have HIV and AIDS-related sicknesses (DOH, 2000).

It has been argued that medical aid contributions may increase by up to 5 times their pre-AIDS level (DOH, 2000). Medical aid companies in Zimbabwe have, for example, estimated that meeting all the claims of just one- percent of HIV-infected members could result in a 31 percent increase in medical aid rates. Most of this increase would have to be paid by employers (Eskom, 2000). Some companies have reported a doubling of medical expenses over a five-year-period (ILO, 2000c: 21). Those companies with in-house primary medical care facilities will not be left out of the equation and will also be faced with higher medical costs (Michael, 2000 & Daly, 2000:17). These companies will face increased medical costs because they will have more employees receiving treatment for HIV opportunistic infections, there will also be an increase in doctors' consultations, pathology tests and so on (DOH, 2000).

On a more positive note, it has been argued that medical costs are unlikely to remain very high (DOH, 2000). Firstly generic alternatives may be produced which will reduce prices. Secondly, there is strong ethical and moral pressure on drug companies to reduce the prices of the drugs. Thirdly, research in the AIDS field is highly competitive and this increased competition could result in lower prices. Lastly, the use

of more effective drugs could reduce the need for in-patient care, thereby reducing the associated costs. Therefore as prevalence rates peak, medical costs could realistically come down to more manageable levels (DOH, 2000).

### **3.3.2 Risk benefits**

Risk benefits include benefits in respect of death, disability or sickness (DOH, 2000). According to the report by the ILO (2000b:29), premiums in some group life assurance policies in certain countries have already doubled. A more astounding example is that of Barclays Bank in Zambia where life insurance premiums rose three-fold in two years (1991 to 1992), from \$44 000 to \$156 000 (DOH, 2000). The experience in Zimbabwe seems to be even worse where life insurance premiums are said to have quadrupled in just two years because of AIDS deaths (UNAIDS, 1998: 5 & ILO, 2000: 9).



An increase in group life rates makes sense because in calculating the death benefit rate, insurance companies consider the expected mortality of the group. Since HIV/AIDS is expected to decrease the life expectancy (see chapter one) it follows that the insurance companies will increase their premiums to allow for the worsening mortality rate.

Funeral benefits are obviously also mortality based as they are paid on the death of the employee and/or his family members. The cost of the funeral benefits will obviously increase as mortality rates increase. Some may argue that the funeral benefit costs are negligible, however, some reports have been made of funeral costs increasing ten-fold (DOH, 2000). Funeral policies generally cover the entire family

and the incidence of children's funeral benefits will increase as most of the babies who contract HIV through their mothers may die within two years (DOH, 2000).

The incidence of disability among employees will also increase as a result of AIDS (DOH, 2000). However, the length of the waiting period for disability benefits could have a significant impact on the relative cost of providing death and disability benefits. The longer the waiting period for disability benefits, the more members will die before they become eligible for a disability benefit (DOH, 2000). Hence longer waiting periods could therefore ease the cost of disability benefits. Currently disability benefits make up 10% of payroll (Myslik<sup>4</sup>, Lifeworks, October 2000).

### **3.3.3 Retirement benefits**

Retirement funds can comprise of both risk benefits and retirement benefits. Retirement benefits represent savings put aside for members to access when they retire from employment. Both employers and employees contribute towards the payment of retirement funds (DOH, 2000). The combined contributions form a pool of resources that should be allocated between the different benefit types namely risk benefits and retirement benefits (DOH, 2000).

There is concern regarding the pressure that will be placed on retirement funds given the current number of HIV positive people. It is felt that the contributions which should fund both the retirement benefits as well as the risk benefits are being used largely to pay for the increasing cost (due to the HIV/AIDS epidemic) of risk benefits (Xoli, 1999:2). Furthermore, it is argued that HIV/AIDS will increase the number of employees going on early ill health retirement. This further erodes the savings that are

---

<sup>4</sup> Interview with Wayne Myslik: Head of Consulting services of Lifeworks Pty Ltd

put aside for people when they retire and also increases the pension fund commitments (Daly, 2000:17 & Michael 2000). A counter argument is that the duration of the payment of these ill health/disability/early retirement pensions to people with HIV/AIDS will decrease as the expected survival period decreases. Furthermore, the requests for benefits arising as a result of the death of retired members will increase by a relatively low proportion, since most employees who have HIV may die before attaining normal retirement age (DOH, 2000).

### **3.3.4 Spouses' & children's pensions**

It has been argued that the incidence of spouses' pensions becoming payable will increase due to the increased number of employees dying of AIDS-related illness. However, these pensions will be payable for a shorter average period because many of the spouses of employees who die of AIDS will themselves have HIV (DOH, 2000).

A liability could be placed on the benefit funds if the children, of these HIV positive parents, are not HIV positive themselves. One must remember that only a third of the babies born to HIV positive mothers are infected with the HI Virus. Children born before the mother becomes infected are also not infected. These children will in all likelihood be orphaned at a younger age than children from non-infected parents, and therefore have a higher probability of drawing a pension which will be payable until they reach their maturity (DOH, 2000).

## **3.4 ABSENTEEISM & PRODUCTIVITY**

As shown in figure 3.1. the epidemic is expected to bring about an increase in absenteeism. This increase in absenteeism is caused by illness, attendance at funerals,

time spent caring for persons with HIV/AIDS, or training of people to replace those who have become sick or who have died (ILO 2, 2000: 2 & Daly, 2000:15). The wage bill may also be set to rise as other workers are paid to work extra hours to fill in for sick colleagues (ILO, 2000c: 22).

It is difficult to determine exactly how much of absenteeism is due to HIV/AIDS especially since employees are not obliged to disclose their HIV status. However, the cost on average of absenteeism including but not limited to HIV is 17.5% of payroll in S.A companies (Myslik, Lifeworks, October 2000). Recent studies of East African business have shown that absenteeism accounts for between 25 to 54 percent of costs (Daly, 2000:15).

Not only do the high rates of absenteeism lead to a higher wage bill but they also lead to decreasing productivity. Figure 3.1. illustrates that there are other reasons, apart from absenteeism, for declining productivity due to HIV/AIDS. Firstly, there will be a decrease in productivity due to illness (ING, 2000:11). Secondly, as the epidemic progresses the death of employees will have a further impact on productivity (Eskom, 2000). Thirdly, the high rates of morbidity and mortality from HIV/AIDS generates increased disorganisation due to rising staff turnover, loss of skills, loss of tacit knowledge (knowledge of the company as well as knowledge that is gained from work experience) and declining morale.

These are invisible costs that are difficult to calculate but have an enormous impact on productivity (Daly, 2000:16). The transmission of skills and knowledge becomes more difficult with high levels of staff turnover, and morale can be severely affected by the loss of colleagues, discrimination against people with HIV/AIDS and the

disruption of the work activities. In smaller companies the effect of the loss may be amplified (Daly, 2000:16). Finally, one must not forget that it takes time to replace workers particularly skilled or senior workers and during this process productivity suffers (ILO, 2000: 9).

An example of the loss of productivity due to HIV/AIDS is that of a study by the Zimbabwean Farmers Union. The study found that the AIDS-related reduction in the production of maize has reached 61%, cotton 47% vegetables 49% and groundnuts 37% (ILO, 2000c: 21).

The level and the impact of HIV/AIDS on a company's productivity will depend on the flexibility of the production systems (Daly, 2000:15). For example companies that employ menial labourers will not incur as high training costs relative to companies where the labour force is such that extensive training is required. Also, companies that operate in markets in which there is a scarcity of labour, particularly skilled labour, may incur higher costs through higher wage demands. Chapter 5 discusses which industries will be most affected by HIV/AIDS.

### **3.5 RECRUITMENT & TRAINING**

All business is dependent on the education system for its future workers, managers and business leaders. In South Africa the education system will be severely impacted as a result of HIV/AIDS through reduced numbers of experienced teachers because at least 12% of educators are HIV positive (Speakout, 2000).

In addition to this, the number of children attending school is falling due to lower household incomes, caring for family members, becoming orphaned and due to HIV/AIDS infection (Daly, 2000:14). This means that business will be faced with having to employ less educated staff which could increase the cost of training.

In addition to the need for training to make up for lost school education and as illustrated in figure 3.1. companies will also need to train new staff members to replace those who have been lost to the epidemic. These replacement costs or recruitment costs will include all recruitment expenses such as advertising, interviewing and the cost of the loss of profit that the employee would have produced had he or she not left the company (Whiteside & Sunter 2000:112). In short HIV/AIDS will cause the costs of training and recruitment to escalate. Many companies are losing around 3% of their workers to AIDS each year (Smart, 1999). The loss of skills, as discussed in the previous section, will further result in an increased demand for training (Daly, 2000:17 & DOH 2000).

It is argued that multi-skilling of strategic staff, and accommodating staff who are partially incapacitated into less strenuous positions will become necessary (Eskom, 2000). Some companies have already begun to hire or train two or three employees for the same key position (ILO, 2000b: 2 & ILO, 2000: 21).

### **3.6 LOSS OF MARKET**

Many authors (ILO, 2000: 4 & 9; UNAIDS, 2000: 25 & ILO, 2000: 20) agree that HIV/AIDS will lead to a loss of market. Ing Barrings (2000:13) argues that companies will lose consumers because of the negative effect of HIV/AIDS on the demand of

households. According to the Ing Barrings report (2000:13), HIV/AIDS will affect household demand in three ways. Firstly, HIV/AIDS will lower the wage income of households including skilled labourers. Secondly, HIV/AIDS will lower the overall population numbers, which in turn affect the relative distribution of household income and thus demand and lastly, the higher need for healthcare will divert funds away from other expenditure categories.

### **3.7 PROFIT**

As explained in section 3.4 and as illustrated in figure 3.1 HIV/AIDS leads to declining levels of productivity. When production costs are not declining at an equal or higher rate than the drop in productivity, as in the presence of HIV/AIDS, then this decrease in productivity will lead to declining profits (Daly, 2000:15). A further cause of the decrease in profit are the additional costs, as shown in figure 3.1 incurred by the company as a result of HIV/AIDS. These costs namely the costs of employee benefits, absenteeism, recruitment and training cost and the loss of markets all impact negatively on profits.

Various studies have examined the total annual cost of AIDS to different companies, as well as the annual cost of AIDS per employee. These studies found that the annual cost of AIDS per employee varied from US\$17 to US\$300, as shown in the table below (Eskom, 2000).

**TABLE 3.1: TOTAL COST OF AIDS TO DIFFERENT COMPANIES**

<b>Company Name</b>	<b>Total Annual Cost of AIDS</b>	<b>Annual cost of AIDS per employee<sup>5</sup></b>
Botswana Diamond Valuing	US\$ 125 941	US\$ 237
Botswana Meat Commission	US\$ 370 200	US\$ 268
Cote d'Ivoire food processing firm	US\$ 33 207	US\$ 120
Cote d'Ivoire textile firm	US\$ 32 667	US\$ 29
Cote d'Ivoire packaging firm	US\$ 10 398	US\$ 125
Kenyan automobile firm	US\$ 21 312	US\$ 17
Kenyan transport firm	US\$ 61 132	US\$ 28
Muhoroni Sugar, Kenya	US\$ 58 303	US\$ 49
Kenyan lumber firm	US\$ 40 630	US\$ 25
Uganda Railway Corporation	US\$ 77 000	US\$ 3 000

**Source: Eskom, 2000**

Clearly HIV makes the cost of doing business more expensive and therefore erodes profit. Daly (2000:16) argues further that not only do the HIV/AIDS related costs impact on current profit levels but they also impact on the future profitability of the firm by reducing the investment capacity. This is so because a decrease in profit will mean that the company will have fewer saving to invest in new more productive capital. In addition to this, future profits are further reduced because declining and fluctuating productivity hinders the company's ability to meet the supply demands from customers, this impacts on the company's reputation which in turn negatively impacts on profits.

There are a number of examples of HIV/AIDS cutting into profits. For example a flower farm in Kenya experienced a ten-fold rise in spending on employee health costs between 1985 and 1995. This expenditure, estimated at over US\$1 million for a company with 7 000 employees, reduced profits so badly that the owners sold the company (ILO, 2000c:22). Another example is that of a study on a transport company

<sup>5</sup> Employee includes both HIV positive and HIV negative employees

in Zimbabwe. The company employed 11 500 workers and offered significant health benefits to its employees. The total cost of AIDS to the company in 1996 was estimated at Z\$39 million, equal to about 20 percent of the company's profits. More than half of this amount resulted from increased health care costs. It is estimated that by 2005 the cost of AIDS to the company could reach Z\$108 million (Eskom, 2000). In Zambia, one large company reported in 1995 that its costs from AIDS illness and death exceeded its total profits for the year (UNAIDS, 1998: 5). The Indeni Petroleum Refinery in Zambia spent US\$26 400 on AIDS-related costs in 1994, more than its declared profits of US\$25 514 in that year (Eskom, 2000).

A study on South Africa examined the expected impact of AIDS on employee benefits, and thus on corporate profits. This study found that, given the current levels of benefits per employee, the total cost of benefits would rise from 7 percent of the salary bill in 1995 to 19 percent by 2005. These additional costs will impact negatively on profits (Eskom, 2000).

Ing Barring (2000:30) argues that some of the increased costs brought about by HIV/AIDS can be passed on to the end consumer in the form of PPI but, given the limited pricing power of companies, some of the higher costs will have to be absorbed by operating profits and will have to come out of company savings. Ing (2000:13) estimates that only about 50 % of the increased costs will be passed on to consumers the rest will be absorbed by the firm in the form of lower operating surpluses.

### **3.8 IMPACT OF HIV/AIDS ON THE COMPOSITION OF THE LABOUR FORCE**

Although this chapter focuses on the increased costs and the resulting profit losses to the private sector as a result of HIV/AIDS, it is worth noting that HIV/AIDS will also have an impact on the composition of the labour force.

The morbidity and mortality caused by HIV/AIDS will reduce the population and consequently the supply of labour (ILO, 2000: 4). The economically active population will be the most affected, with infections in South Africa forecasted to reach 17% of the population as a whole and 26% of the economically active population. This means that the South African work force will be disproportionately affected by the epidemic. Most of the infections will be the unskilled and semi-skilled part of the workforce, with infection rates for this group likely to top the 30% mark (ING, 2000:1).

Unemployment in South Africa is in excess of 30% and we are currently faced with a surplus labour situation (ING, 2000: 9). Employees who die of AIDS related causes could easily be replaced by the available pool of unemployed, leaving the production process and income intact. However, most of the unemployed in South Africa are unskilled and semi-skilled. We in fact have a large shortage of skilled and highly skilled labour (ING, 2000:9) and HIV/AIDS affects all categories of workers. The HIV/AIDS infection rates for the skilled and highly skilled are expected to peak at well above 23% and 13% respectively. The epidemic will thus exacerbate the skills shortage within the economy (ING, 2000:1). Finding qualified top management and skilled line workers to replace those who die or can no longer work will be extremely

difficult (ILO, 2000: 9). In short AIDS is affecting and ultimately killing the productive labour force within the formal sector (ILO, 2000: 8).

The age distribution of the workforce is also expected to change. As parents die of AIDS their children will be forced to enter the labour market at an earlier age changing the age composition of the labour market (ILO, 2000b:2). This younger workforce together with the fact that employees will be going on early retirement, brought about by the morbidity caused by AIDS, will bring about a reduction in the quality of the labour force in terms of education, training and experience (ILO, 2000b: 2). Projections indicate that the average age of the labour force by 2020 in high prevalence countries will be as much as two years younger (ILO, 2000b: 2).

Lastly, the sex distribution of the labour force is also expected to change and become more female dominated due to the rising number of widows seeking a livelihood (ILO, 2000b: 2). Unfortunately there is surprisingly little information on the effect of HIV/AIDS on the sex distribution on the labour force.

### **3.9 SUMMARY**

In short HIV/AIDS leads to increased employer costs, lower worker productivity and a decrease in the overall demand for goods and services. In addition to these losses of productivity and decreases in demand, those companies that offer health services, pensions, life insurance and other benefits to their employees will incur varying levels of increased costs directly dependent on levels of benefits that they offer their staff. The combined effect of all of this is lower profitability.

A glimmer of hope is that cheaper medicines may arise. These new drugs may significantly extend the lives of people with HIV. This could result in HIV/AIDS becoming equivalent to any other chronic condition. The importance of this is substantial where employee benefits are concerned. If appropriate medical treatment becomes available timeously for infected persons, they should be able to remain productive members of society with a normal life span.



## CHAPTER 4

### QUANTIFYING THE HIV/AIDS RISK

#### 4.1 INTRODUCTION

Chapter 3 discussed the various ways in which HIV/AIDS impacts on a company. It is however difficult to quantify these costs. It is clear that the level of impact with respect to visible costs will depend on the level of benefits provided to employees and the percentage of premium contributions paid by the employees. According to Metropolitan Life Assurance the cost of an average set of benefits for many schemes is expected to double by 2005 and triple by 2010. Metropolitan also projects that for employers who have full responsibility for the provision of benefits, this could add around 15% to the remuneration costs of an average manufacturing company by 2005 and about 30% by 2010 (ING, 2000:12). Metropolitan estimates that indirect costs of HIV/AIDS could add a further 10% and 15% respectively (ING, 2000: 12).

The question that now arises is how does one quantify the AIDS risk exposure of a company. There are many companies that offer assistance in calculating the impact of HIV/AIDS on individual companies. One such company is Lifeworks who in 1999 developed the AIDS Impact Calculator for the American Chamber of Commerce in South Africa. The Aids Impact Calculator is an actuarial formulation which can be used by all companies to assist them in assessing the financial impact of HIV/AIDS on employee benefits, recruitment, training costs and productivity, areas that are difficult to quantify.

This chapter focuses on the AIDS Impact Calculator developed by Lifeworks. The chapter first explains the fundamentals of the calculator and then moves on to illustrate the best case and the worst case scenarios.

## **4. 2 THE FUNDAMENTALS OF THE AIDS IMPACT CALCULATOR**

The Aids Impact Calculator is an excel based program. The mortality, morbidity and absenteeism rates are based on Lifeworks experience in the South African market particularly the food and textile industries (Myslik, Lifeworks, October 2000) There are several factors that interact to determine the relative risk level for a particular workforce. These factors must be inputted into the programme and are as follows:

- **Region:** This must be considered because the extent of the epidemic varies in different regions. The epidemic is considered to be +/- 5 years ahead in KZN versus the Cape, affecting prevalence, morbidity, and mortality levels.
- **Income:** Income levels are taken into account because the population group most at risk for infection are the "richest of the poor." That is, individuals with social mobility but living in destabilised social environments. This includes workers at the entry level of the formal workforce.
- **Industry:** Industries are an important factor because certain industries have higher risk patterns than others. The high risk industries include among others, mining (due to the nature of single-sex hostels and migrancy), agriculture (due to migrancy patterns), trucking/driving (due to extended periods away from home).

Given the above facts the programme then makes assumptions about the gender and age distributions within that industry, region and income group. Gender distribution is important because HIV infection rates are higher among women. It is also important to know the age distribution of the group because HIV infection rates are highest among 20-30 year olds.

Once the gender and income level have been inputted into the programme it is possible to estimate the number of HIV/AIDS employees within the group. The estimates of mortality, morbidity and absenteeism rates for the employer group are based on Lifeworks experience in the South African market. The estimate of the stage of HIV/AIDS infection for the various employees within the employee group depends on the region and it is this factor that will influence absenteeism. The impact of HIV/AIDS on productivity depends on the absenteeism. The Lifeworks programme takes into account the loss of productivity caused by HIV/AIDS as a result of increased absenteeism (among sick employees, those attending funerals for colleagues or family, and those caring for sick family members). Increasing numbers of new recruits will have lower productivity. Overtime, work coverage, accidents and downtime could also reduce productivity. The impact of HIV/AIDS on the recruitment and training costs depends on the estimated mortality of the group. The AIDS Impact Calculator quantifies all of these factors. With respect to recruitment & training the programme considers the cost of replacing employees lost to HIV/AIDS. Finding employees in certain semi-skilled positions may become difficult. In some African industries, it has been necessary to hire three workers for one position, to ensure that at least one will survive long enough past the training period to make an adequate return on the investment.

The next step is to enter the employee benefits specific to the company being assessed. It is important to know if the company offers any employee benefits and if they do, it is then important to know the extent of the employee benefits. If the employee benefits are substantial then the increased costs as a result of HIV will also be substantial. The Aids Impact Calculator considers the following employee benefits for the following reasons:

- Group Life: The group life benefit must be entered as a multiple of salary for example 3 times the annual salary as a lump sum death benefit. As discussed in Chapter 2 HIV/AIDS occurs primarily among people in their prime working years when there would, in the absence of HIV/AIDS be little mortality. AIDS-related deaths therefore will significantly increase group life assurance mortality rates and in turn premiums.



- Permanent Health Insurance (P.H.I.): P.H.I. is a disability benefit payable to the disabled person on a monthly basis and is generally 75% of salary on a sliding scale basis subject to an overall maximum of R45 000. The latest sliding as agreed amongst the insurance companies and is payable to the disabled employee until the earlier of recuperation or death. This benefit must be specified in the program. As discussed in section 3.3, the progression of AIDS-related illnesses will result in a greater number of disabled employees making claims on disability benefits. It has been argued that the increase in HIV related P.H.I. claims will not be substantial. The reason for this is that the P.H.I. definition for most insurance companies is “unable to perform his/her own or any occupation and not been employed for any remuneration” This means that the HIV positive person will have to be very ill before they can make a P.H.I. claim. Once the claimant has

reached this stage of illness they generally do not live very long. This means that the P.H.I. benefit will only be paid for a short period, possibly only a few months.

- **Capital Disability:** Capital disability is a lump sum disability benefit and is usually a multiple of salary for example 3 times annual salary payable once the member becomes disabled. This multiple of salary must be specified into the program. HIV/AIDS can increase the number of capital disability claims paid out and thereby increase the premium for the capital disability benefit. Capital disability benefits are more vulnerable to increased claims because all these claims will be paid in full regardless of the length of the disability.

The programme then automatically quantifies the impact of HIV/AIDS on the company in terms of the above employee benefits.



#### **4.3 QUANTIFYING THE AIDS IMPACT ON A COMPANY**

The calculations can begin once all the details under section 4.2 have been furnished. The assumption made at this point is an assumption regarding the percentage of staff that are HIV positive. This assumption is based on the average age, gender, income level and industry of the particular group. Secondly given the amount of people assumed to be HIV positive, the AIDS Impact Calculator makes assumptions about the number of HIV positive employees in each stage of infection as outlined under section 2.2. If a large percentage of the HIV positive employees are assumed to be in their final stage of illness then the impact on the company will be far greater compared to the impact on companies, such as companies in the Western Cape, where the employees will currently be assumed to be in the earlier stages of illness. The

AIDS Impact Calculator will be continually updated to allow for any changes demographic or regional characteristics of the HIV/AIDS epidemic.

The final calculation is then performed. The percentage of HIV positive employees in each stage of illness will determine how many people will be off sick with AIDS related illnesses and the resultant drop in productivity. For example, given the demographics of a particular group, Lifeworks may estimate that 10% of the staff are HIV positive but only 1 % of this 10% are in the final stage of illness. Therefore only 1% of the staff will be off work due to AIDS. If the average wage bill for this group is R2 000 per employee per month then the cost to company in production terms will be R2 000 times the 1% of the 10% who are ill and not at work. The quantitative impact on productivity is calculated as the wage of each worker that is off sick. In other words it is assumed that the average wage is a reasonable proxy for skills. The underlying assumption with respect to absenteeism and loss of productivity is a total loss in productivity equal to 6 months' worth of salary. The AIDS Impact Calculator therefore calculates the loss of productivity in terms of payroll. As acknowledged by Lifeworks, this is a conservative method of calculating the impact on the company given that companies are profit maximisers and therefore do not pay their staff a wage equal to their productivity level. Companies in fact on average only pay their staff about one sixth of their worth. The cost to the company could therefore be expected to be far greater than the wage of the employee who is off sick. Companies who experience low productivity will not feel the impact of HIV/AIDS as much as those companies such as the clothing industry in which the productivity is exceptionally high. The cost to group life, disability and medical aid benefits are determined in the same way. In other words the impact of HIV on the company with respect to employee benefits will depend on the percentage of employees in each stage of illness.

The Calculator is not designed to be a detailed planning tool (Myslik, Lifeworks, October 2000) However, it is an excellent first step for the manager who needs a general understanding of the scope of the financial impact that AIDS could have on his or her organisation, or who needs to demonstrate to an executive the benefits of developing a management solution appropriate to their company. Calculating a more exact impact would require more detailed information about the organisation, and would involve running the full AIDS Model on the company.

The AIDS Impact Calculator does not only consider the doom of HIV/AIDS it also motivates prevention programmes by illustrating the savings that could be made by companies if the companies implemented intervention programs. Details of intervention programmes are discussed in chapter 5.

#### **4. 3. 1 A worst case scenario**

An example of a worst case scenario is a transport company situated in Kwa-Zulu Natal with 10 000 employees who have an average income of less than R3 000 per month. This could be classified as a high risk group of employees because they fall into the region currently worst affected by HIV/AIDS and the age group, gender and income level is also that of the worst affected section of the population. If these employees are entitled to a death & capital disability benefit of one times annual salary as well as a medical aid and permanent health insurance benefits then the Aids Impact Calculator projects that the costs to company as a result of the HIV epidemic will be as follows:

**TABLE 4.1: WORST CASE SCENARIO OF THE FINANCIAL IMPACT OF HIV/AIDS ON A “HIGH RISK” COMPANY**

	Financial Impact in Rands without intervention Year 1		Financial Impact in Rands with intervention Year 1		Net Savings in Rands with intervention Years 1 - 7 cumulative	
Group Life	470 370	847 500	258 703	466 125	3 399 510	612 5159
PHI	376 296	678 000	244 592	440 700	2 115 251	3 811 210
Capital Disability	282 222	508 500	141 111	254 250	2 266 340	4 083 440
Medical Aid	2 100 000	3 783 780	1 365 000	2 459 457	11 804 608	21 269 575
Recruitment & Training	235 185	4 237 503	129 351	233 062	1 699 755	3 062 580
Productivity	705 555	1 271 251	176 388	317 812	8 498 775	15 312 899
Total	4 169 628	7 512 783	2 315 147	4 171 408	29 784 239	53 664 862

Source: Lifeworks (2000)

The first range of figures illustrates the financial impact of AIDS in one year if there are no interventions. The second range of figures shows the financial impact of AIDS in one year with prevention interventions programs. The third range of figures shows the net savings over seven years to the company as a result of the intervention programs.



As can be seen, the savings to the company if it implemented absenteeism, medical aid, education and sexually transmitted diseases management would be R53 664 862 over a seven year period. This is a substantial saving.

#### **4. 3. 2 A best case scenario**

An example of a best case scenario is a financial institution in the Western Province with an average income above R6 000 per month. This is classified as a low risk scenario because the group is in the region currently least affected by HIV/AIDS and in an industry and income group currently least affected by HIV/AIDS. The cost to company, assuming that these employees have the same benefits as those under the worst case scenario, will be as follows:

**TABLE 4.2: BEST CASE SCENARIO OF THE FINANCIAL IMPACT OF HIV/AIDS ON A “LOW RISK ” COMPANY**

	Financial Impact in Rands without intervention Year 1		Financial Impact in Rands with intervention Year 1		Net Savings in Rands with intervention Years 1 - 7 cumulative	
Group Life	16 724	30 133	9 198	16 573	120 871	217 783
PHI	13 379	24 107	8 697	15 669	75 209	135 510
Capital Disability	10 035	18 080	5 017	9 040	80 581	145 189
Medical Aid	74 667	134 534	48 533	87 447	419 719	756 252
Recruitment & Training	8 362	15 067	4 599	8 287	60 436	108 892
Productivity	25 086	45 200	6 272	11 300	302 179	544 459
Total	148 253	267 121	82 316	148 317	1 058 995	1 908 084

Source: Lifeworks (2000)

From the above it is clear that HIV/AIDS will also impact on a low risk sector with costs estimated to reach R267 121 if no prevention intervention programmes are implemented and R148 317 if intervention programmes are implemented. This impact is however only 3.56% of the impact of HIV/AIDS on a high risk company. Once again the savings that can be incurred should the company implement an intervention programme will be substantial at R1 908 084 over a 7 year period.

#### 4. 4 SUMMARY

This chapter explained the fundamentals of the Aids Impact Calculator. This calculator then estimated the number of HIV/AIDS employees in a group given the age, gender, regional and industry details of a company. From this estimate it used its own mortality and morbidity tables to estimate how many employees will die or be off work as a result of HIV/AIDS. Based on the deaths and absenteeism rate in the company the AIDS Impact Calculator quantified the impact of HIV/AIDS on a company. The calculator showed that the costs incurred to high risk companies due to HIV/AIDS can be substantial reaching levels of R4 169 628 in a 1 year period. The

results of the Aids Impact Calculator also showed that even in the best case scenario, AIDS will have a substantial impact on the company reaching levels of R267 121 per annum.



## **CHAPTER 5**

### **SECTORAL VULNERABILITY TO HIV/AIDS**

#### **5.1 INTRODUCTION**

The impact of HIV/AIDS on each sector of the economy will vary depending on factors such as the nature of the labour market in that sector (Daly, 2000: 17). For example sectors that have a large labour supply at their disposal are unlikely to be affected significantly by HIV/AIDS especially where those employees who have to leave the labour force can be replaced without loss of productivity (ILO, 2000c: 20).

The previous chapter outlined the various ways in which HIV/AIDS impacts on the private sector and the individual companies. This chapter takes the impact of HIV/AIDS a step further by considering which sectors of the economy will be most affected by the epidemic.

#### **5.2 SECTORS HIV/AIDS RISK**

Ing Barrings (2000,25) developed a model, which was used to rank the various sectors in South Africa according to the impact that HIV/AIDS will have on each sector. These rankings were based on each sector's risk exposure with respect to its reliance on a workforce with a high infection risk and secondly on its reliance on skilled workers, the replacement of whom in the case of illness or death is much higher than that of the unskilled workers.

The demographics (age, gender and race) of the workforce, of each sector gave Ing Barrings an indication of each sector's reliance on a workforce with high infection risk because these demographics enabled them to derive the expected infection rates and the expected AIDS deaths within the various sectors (ING, 2000: 25). The findings were that the mining sector, where infections peak at 29% and deaths at 3 out of 100 workers, had a very high risk exposure because the workers were mainly black, male and generally fall into those age groups that are relatively more at risk (Ing, 2000: 27). It can be expected that the risk exposure for this group may be even higher given that mineworkers contact with professional sex workers was not taken into account. The ILO (2000: 18) estimated that as many as one out of five mineworkers in the South African mining sector are currently HIV positive. The ranking of infection rates based on HIV per 100 workers in each sector is given below in column one with ranking one implying the most HIV positive workers and therefore the highest risk:

**TABLE 5.1: THE RANKING OF THE IMPACT OF HIV/AIDS ON  
DIFFERENT SECTORS**

Rank	HIV+ PER 100 WORKERS	% of skilled and highly skilled of wage bill	Composite ranking after sorting
1	Mining	Agriculture, forestry and fishing	Transport and storage And Catering and accommodation
2	Transport and storage	Mining	
3	Construction	Construction	General government
4	Catering and accommodation	Consumer manufacturing	Mining
5	Agriculture, forestry and fishing	Metals	Construction
6	Consumer manufacturing	Machinery	Retail
7	General government	Chemicals	Chemicals AND Consumer manufacturing
8	Chemicals	Forestry products	
9	Retail	Transport and storage	Health

10	Machinery	Retail	Agriculture, forestry and fishing
11	Forestry products	Communication	Business services
12	Metals	Catering and accommodation	Finance and insurance
13	Health	General government	Forestry products
14	Communication	Health	Machinery
15	Business services	Business services	Communication
16	Finance and insurance	Finance and insurance	Metals

**Source: Ing Barrings 2000**

To analyse which sectors were more reliant on skilled labour Ing Barrings took into account the composition of the sectoral wage bills. It is widely known that HIV has impacted more severely on the unskilled labour force compared to the skilled labour force. Ing Barrings (2000: 7) found that the HIV positive rate of semi- and unskilled labour is over three times higher than that of highly skilled. The findings were that the service industries such as finance and insurance had more skill intensive staff while mining and manufacturing were on the opposite end of the spectrum (ING, 2000: 28). Although the semi- and unskilled labour force is disproportionately affected by the AIDS epidemic the infection rates amongst the highly skilled will also be substantial exacerbating S.A's skills shortage (ING, 2000 7). Among the highly skilled, the infection rate is forecast to peak at 13.1% in 2005, compared with 22.8% for the skilled and 32.8% for the semi- and unskilled. Annual AIDS related deaths among the highly skilled are forecast to peak at 1.2 per 100 workers, while deaths among the semi- unskilled groupings are expected to peak at 3.4 per 100 workers. The ranking of the industries in terms of the percentage of skilled & highly skilled of wage bill is shown in column three above where a ranking of one implies the most exposed to the AIDS epidemic because the least amount of skilled workers are found in that sector.

Lastly, Ing Barrings (2000: 28) combined these two rankings with a 60:40 weighting on HIV positive risk and skill levels respectively. This ranking can be found in column 4 above. The resulting findings were that the transport and storage sector, as well as the catering and accommodation sector are most exposed to the AIDS epidemic. Not only are these sectors infection rates high but they are also more reliant on a skilled workforce than mining or agriculture whose infection rates are also very high. Finance and insurance and business services, which face the lowest infection risk, feature in the middle field in the composite ranking due to their high dependence on a skilled workforce which may lead to higher remuneration costs.

### **5.3 SUMMARY**

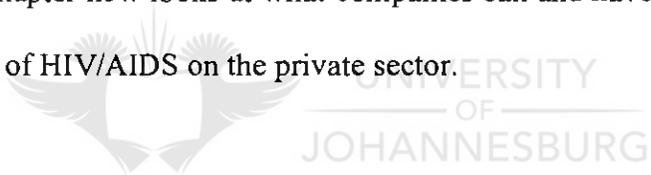
This chapter analysed which sectors are most at risk based on the findings of Ing Barrings. The sectors were then ranked according to their exposure to the AIDS epidemic with a ranking of one indicating that the sector was most at risk to the epidemic relative to the other sectors. The ranking of the sectors were based on the demographics (age, gender and race) of the sector as well as the skills level needs of each sector. It was found that the sectors that rely on a skilled labour force would be more affected by the loss of a staff member compared to the sectors that rely on unskilled labourers. While these rankings can provide a useful reference framework for relative sectoral risk exposure, it is important to emphasise that no sector can afford to be complacent in light of the AIDS epidemic because the effect will be felt across all sectors, just to varying degrees. The final impact on a company will be determined by the management interventions that are applied. Companies do have choices that will influence the future impact of the epidemic. These choices will be discussed in the following chapter.

## **CHAPTER 6**

### **HIV/AIDS INTERVENTION PROGRAMMES**

#### **6.1 INTRODUCTION**

Thus far we have established that HIV/AIDS has an impact on the private sector and that in poorly managed situations, the HIV-related costs to companies can be substantial. However, with proactive management, these costs can be mitigated through effective prevention and management strategies (Eskom, 2000). The rand value benefit of implementing prevention or management strategies has been shown in chapter 4. This chapter now looks at what companies can and have done to reduce the financial impact of HIV/AIDS on the private sector.



#### **6.2 CAN HIV BE CURED?**

Currently there is no cure for HIV but over the past 15 years extensive research has been undertaken to develop a vaccine (Whiteside & Sunter, 2000: 23). The South African AIDS Vaccine Initiative (SAAVI) was launched in 1999 (Whiteside & Sunter, 2000: 24) with support from the highest level in the South African government. The first human trial of an HIV-preventive vaccine was conducted in 1987 in the United States. Since then, more than 30 small-scale trials have been conducted, including 12 in developing countries (Brazil, China, Cuba, Thailand and Uganda). The first large-scale HIV vaccine trials were launched in 1998 in the United States and in 1999 in Thailand. The initial results from these trials may be available within the next two years (UNAIDS, 2000: 62).

Vaccine development is complicated not only by the range of virus subtypes circulating, as described in section 2. 2, but by the wide variety of human populations who need protection and who differ, for example, in their genetic make-up and their routes of exposure to HIV (UNAIDS, 2000: 62). Inevitably, different types of candidate vaccines will have to be tested against various viral subtypes in multiple vaccine trials, conducted in both high-income and developing countries. It is vital for developing countries to build up their technical and human capability to conduct such trials with the highest ethical and scientific standards and with the full participation of the community (UNAIDS, 2000: 62).

In the mean time, the development of other treatments such as Highly Active Antiretroviral Therapy has resulted in a decline in the mortality rates in the developed world (Whiteside & Sunter, 2000: 21). This antiretroviral regimen is capable of suppressing HIV for many months and perhaps even years but the challenge that remains is to make these drugs affordable to everyone (Whiteside & Sunter, 2000: 21). A further challenge is getting patients to adhere to the complicated pill-taking program, as adherence is crucial for the long term success.

### **6.3 HIV/AIDS PROGRAMMES AND THE PRIVATE SECTOR**

Research has confirmed that by and large South African business is either not planning for the epidemic or even making token attempts to create awareness about HIV and AIDS (Michael, 2000). This may be because employers do not understand the impact that HIV/AIDS, as discussed in chapter three, can have on their company. This section looks at why companies should implement an HIV/AIDS program, the

effectiveness of an HIV/AIDS programme in the workplace and the steps taken on how to implement a prevention program.

### 6.3.1 Why Companies?

A good starting point in motivating companies to implement a preventative programme is to draw their attention to the fact that they cannot replace employees simply because these employees have become less productive. The labour act does not allow employers to summarily dismiss employees. Firstly, an employee is not under a legal obligation to disclose his/her HIV status during an incapacity dismissal and secondly the Code of Good Practice on Dismissal, which is attached to the Labour Relations Act, requires an employer to “investigate the extent of the incapacity or injury; investigate alternatives to dismissal *including the possibility of adapting the employee's duties* or accommodating their disability and to follow a fair procedure in effecting the dismissal.” (DOH, 2000). However, an employee who is too sick to continue working can be dismissed because he/she lacks the capacity to perform the key aspects of his/her position. This is called a dismissal on the grounds of an employee’s incapacity (DOH, 2000). The legal test, which will be used to determine whether the employer acted fairly in terminating the employee’s services for incapacity, is:

“Whether, because of the employee’s absences and incapacity, having regard to the frequency and duration of such absences, and the effect they have on his/her co-workers; morale, the employer could not in fairness have been expected to wait any further before considering dismissal.” (DOH, 2000).

Secondly, the benefits of an HIV/AIDS programme in the workplace will be that the programme will reduce the impact of the costs, as defined in chapter 3, of the epidemic on the company. Studies have shown that the returns to investments in the prevention of HIV/AIDS in terms of cost savings are between 3.5 to 7.5 fold higher than the cost of intervention (Daly, 2000: 18). While costs vary significantly between countries, it is estimated that a worker with AIDS costs a business in Southern Africa around US\$ 200 a year in lost productivity, treatment, benefits and replacement training (UNAIDS, 1998: 5). The costs for senior and skilled staff will be far higher and yet a study in Tanzania has demonstrated that treatment of other sexually transmitted diseases costs as little as US\$ 2.11 per case and can cut the number of people getting HIV by over 40%. Furthermore, employees living with HIV will be productive for a longer period if they receive the medical, social and psychological support they need (DOH, 2000 & Smart, 1999 & Sunter, 2000: 2). These intervention programmes also lead to increased awareness and knowledge which could impact on the epidemic (DOH, 2000). For example new HIV infections in Zimbabwean factories with worker-driven prevention campaigns were a third lower than in factories without such campaigns (UNAIDS, 1998: 5).

Thirdly the workplace, in both the formal and informal sectors, is one of the most important and effective channels for addressing the HIV/AIDS pandemic because it has facilities which are ideal for education campaigns (ILO, 2000c: 31). Furthermore people spend 8 to 10 hours of their time everyday at their workplace and social interactions relevant to HIV/AIDS take place there. Therefore preventative material assistance and advocacy services are required at the workplace (ILO, 2000: 38). The onus of implementing these programmes is not only on the shoulders of the large industries. The small and medium size industries should also get involved because the

loss of one employee in small organizations can be catastrophic in comparison to large organisations (Daly, 2000: 25).

A further consideration is that the workplace can act as a breeding ground for HIV/AIDS and can promote the spread of the HI Virus. One factor that increases the risk of infection and the magnitude of the epidemic is labour migration (DOH, 2000). Miners are migrant workers who live in single-sex hostels without wives or families for most of their working lives and therefore regularly interact with sex workers. Miners are working in dangerous and stressful conditions and live in daily fear of accidents and they perceive HIV as just one of the many risks a man faces, and far less immediate in its consequences than many others. A study on half-a-million mineworkers in South Africa indicated that the conditions of miners' lives are almost perfectly designed to spread HIV both at the mines and in their rural homes (CSIR, 2000). Interviews with sex workers, who may have up to 30 sexual contacts a month, revealed that many had never used a condom in their lives despite fears of AIDS, because their customers were unwilling to pay for protected sex (CSIR, 2000).

Other factors related to the workplace that increase risk of HIV transmission are single sex hostels, overcrowded housing, poor access to healthcare services, lack of recreation facilities and lack of accurate information (DOH, 2000). Organisations should look at the situation of its employees to see if any of these factors are contributing to the spread of HIV as the risk of transmission can be reduced by attending to some of these factors (DOH, 2000).

A ten-point strategy for the total management of the disease in South Africa has been suggested and is as follows: (Xoli, 1999).

- Projections of the impact on the company;
- An actuarial analysis of the direct costs of AIDS;
- Customised managed care products for medical schemes. As far as possible, employee benefit schemes should be non-discriminatory and economically viable (DOH, 2000);
- Effective AIDS intervention programmes;
- In-depth AIDS education programmes;
- Effective treatment of sexually transmitted diseases;
- Human resource planning; Employers have begun to respond to HIV/AIDS by hiring extra staff in key areas, and by training staff in a range of important skills so that they can be deployed to fill gaps as the need arises (ILO, 2000c: 29).
- Effective communication strategy;
- Understanding how AIDS will impact on consumer markets, and the need to develop products to meet specific needs of people who are HIV positive;
- Counselling for employees who are HIV positive.

### **6.3.2 Which programmes should be implemented?**

It is strongly recommended that HIV/AIDS education programs, sexually transmitted diseases (STD) programmes and tuberculosis programmes be implemented. The reasons for this are briefly discussed below. It is important to note that all these programmes should be implemented together for them to be effective. The order in which they are discussed are in no way related to their relative importance.

### **6. 3. 2. 1 HIV/AIDS Education Programs**

Education programmes should be implemented to inform people that the virus exists and that there are ways to reduce the probability of HIV infection by changing one's sexual behaviour (Whiteside & Sunter, 2000: 19). Education programmes should also be designed to change the discriminatory attitudes of employees towards HIV positive employees, dissipate denial, ignorance and the stigma attached to HIV/AIDS (ILO, 2000: 36).

Changes in the attitude in the work environment are important because discriminating against potential or existing HIV positive employees could lead to employees delaying or avoiding an HIV test and consequently result in the employee receiving delayed medical treatment. Ultimately this would increase the mortality rate as well as increase the medical costs (DOH, 2000).



Denial that HIV/AIDS is a problem makes it difficult to design and implement effective HIV/AIDS policies and should therefore be dealt with (ILO, 2000c: 23). With respect to ignorance, people fear that a positive result means an immediate death sentence and this is not true. In a developing country someone who has just been infected with HIV can expect to live nine years on average before falling seriously ill and to survive up to a year beyond that even in the absence of antiretroviral therapy (UNAIDS, 2000: 38). Learning of one's HIV status early on can have important benefits for both prevention and care. New research shows that, even in developing countries, inexpensive medication can improve survival and help an HIV-positive person to stay healthy and productive for longer than in the absence of medication (UNAIDS, 2000: 38).

The stigma and shame associated with HIV/AIDS could foster the spread of the disease and is a very real obstacle to both prevention and care. Stigma and the fear it engenders fuels the spread of HIV since those with risky behaviour in the past may be reluctant to change that behaviour in case the change is interpreted as an admission of infection. Fear of acknowledging HIV infection can stop a married man from raising the subject of condom use with his wife. Fear of advertising her HIV status may prevent an infected woman from giving her baby replacement feeding to avoid transmitting the virus through breast milk (ILO, 2000: 12). The consequences of being HIV positive may be more severe for women, who risk being beaten and even thrown out of their house if their status is revealed. This may still be the case even when the husband was the source of her infection (ILO, 2000: 13). A report by UNAIDS and WHO cited that fewer than one in ten home-based caregivers who were caring for HIV-infected patients acknowledged that their patients were suffering from HIV or AIDS. Furthermore, several patients told researchers that they had not disclosed their status to anyone, including the person caring for them (ILO, 2000: 13).

#### **6. 3. 2. 2 Sexually Transmitted Diseases Programs**

There are approximately 11 million STD episodes treated annually in South Africa, with approximately 5 million of these managed by private general practitioners (Metropolitan Life, 2000). In South Africa it is also estimated that more than a million women and children died from complications due to reproductive tract infections (RTIs) during the 1990s (Xoli, 1999). As mentioned in section 2.2.4 people with STDs are five to 20 times more likely to acquire HIV infection than someone who does not have an STD. STDs therefore increase the risk of HIV infection and the

magnitude of the epidemic (DOH, 2000 & UNAIDS, 2000: 33 & 63, & Sunter, 2000: 18). Clearly companies seeking to prevent HIV in the workforce therefore have a clear interest in making sure that these STD infections are treated quickly and effectively. Most of these STDs can be treated relatively cheaply with antibiotics (CSIR, 2000).

Some studies, as will be discussed under 6. 4, suggest that providing STD services to the wider community can have as much of an effect on the health of the workforce as providing them to the workers alone (UNAIDS, 2000: 33). In a study in South Africa, a mine-sponsored service for treating sexually transmitted infections in sex workers in the surrounding community led to a significant reduction in the number of infections among the miners themselves (UNAIDS, 2000: 33).



UNIVERSITY  
OF  
JOHANNESBURG

### **6. 3. 2. 3 Tuberculosis programmes**

Tuberculosis (TB) programmes should be implemented and integrated into other workplace health and education services (DOH, 2000). TB is the most common opportunistic infection and the biggest killer of people living with AIDS and is often the first AIDS-defining illness to change a person's status from HIV-infected to AIDS. By attacking the immune system, HIV makes a person 30 times more likely to progress from TB infection to TB disease. It is estimated that 25 % of the 160,000 TB cases in South Africa in 1996 were attributable to HIV. Fortunately, TB can be cured as successfully in people who are infected with HIV as in those who are not. However, if a patient with HIV and TB is not treated promptly, the patient may die in weeks or months. The link between TB and AIDS is therefore very strong (DOH, 2000).

#### **6. 3. 2. 4 Condom promotion**

A further effective prevention is the use of condoms. Companies should be engaged in prevention control and should provide free condoms to their staff in their bathrooms (Whiteside & Sunter, 2000: 19 & CSIR, 2000). Condoms must be widely and conveniently accessible if they are to be an easy choice. In one South African study, around 85% of both men and women acknowledged that the use of condoms could prevent AIDS. A high proportion of these respondents had multiple partners or believed that their regular partner was unfaithful but over 60% of both men and women had never used a condom. While half of all the men said they intended to use a condom every time they had sex with a casual partner, only 16% of them actually did so. When asked why many respondents said they simply did not have a condom at hand (UNAIDS, 2000: 57).



#### **6.3.2.5 How should programmes be implemented?**

How to implement an efficient and effective HIV/AIDS programme is not the focus of this dissertation and is therefore only briefly discussed. However the importance of the role played by worker organisations is continually noted because they are in a good position to bring an issue into the open and help overcome the culture of denial (ILO, 2000c: 31 & Daly, 2000: 41).

In implementing an HIV/AIDS programme companies should not “reinvent the wheel” but should draw on the lesson learned by the companies that have already implemented programmes. Some of these “lessons learned” are documented in “Managing the impact of AIDS in the workplace – eskom”.

There are a number of organisations that offer assistance to companies in implementing an HIV/AIDS program. These organisations are listed in Appendix one. There are also organisations that provide HIV/AIDS and STD educational materials and/or educators who will visit workplaces on a regular or once-off basis. The database of these organisations is available from the Department of Health Directorate HIV/AIDS and STDs.

#### **6.4 CURRENT HIV/AIDS PROGRAMMES IN THE SOUTH AFRICAN PRIVATE SECTOR**

Harmony Gold Mining has implemented an impressive STD prevention programme using community intervention (Michael, 2000). Commercial sex work is a prominent feature of many mining communities and is widely regarded as a key factor for the high rates of STDs in these communities. The intervention that was developed included prophylactic treatment of STDs in commercial sex workers living in the mining community together with outreach peer education efforts and access to free monthly examinations in a mobile clinic (Michael, 2000). The results of the project were that the rate of STDs in the women at high risk fell from fifty percent with one or more STDs to fifteen percent after the intervention. As a result STD rates in the hostel-based miners, also decreased. It is estimated that a total of 235 infections were averted for the year, forty amongst the women and 195 among miners, or a forty-six percent decrease compared to no intervention. The project cost R268 000 but demonstrated a cost saving of R6, 8 million for the company. The pilot project has grown into the full-scale Lesedi project and has become a collaborative effort jointly undertaken by the Department of Health and two other mining companies (Michael, 2000).

Eskom is also running prevention programs. An impact analysis programme commissioned by Eskom in 1995 predicted a 26% HIV prevalence rate amongst the workforce by 2005 (Daly, 2000: 61). This motivated them to declare a HIV/AIDS to be a strategic priority. Eskom has distributed condoms to the workforce and have installed condom dispensers in most of the toilet facilities in their operation (Daly, 2000: 61) Other initiatives sought to extend the education on HIV/AIDS into the wider community through for example radio and television talk shows. It can be argued that the Eskom programme has been successful since there is an 80% awareness and knowledge level and Eskom currently has a lower HIV prevalence rate than the 11% that was predicted for this period (Daly 2000: 62). However the predictions for Eskom's workforce were extrapolated from the general population's HIV prevalence, without doing any HIV testing on employees. The actual prevalence in Eskom is unknown, and it could be higher or lower than the normal South African population. They do have an AIDS programme but because we do not know the incidence it is impossible to say whether the programme is effective (Eskom, 2000). It is still however Eskom's view that the benefits of HIV/AIDS prevention strategies outweigh the costs of an unchecked spread of HIV/AIDS within the workplace and communities (Eskom, 2000).

During the 1980s, many of the 45 000 employees of David Whitehead Textiles were blood donors. However, in 1988 the Blood Transfusion Service found that 21 % of the donors had HIV. (DOH, 2000). In response, the company launched an AIDS Awareness Campaign in 1989. The main objectives were to provide information to workers about HIV/AIDS, safer sex practices and so on; to provide medical and counselling services to employees with HIV; and to provide free condoms. During the

campaign, the company began displaying the numbers of AIDS deaths every month on a notice board outside the factory clinic and canteen. This potentially controversial move was successful in making people realise that HIV/AIDS is a life-threatening disease.

The results of the campaign was that between 1989 and 1992 there was a sharp decrease of between 50 and 75 % in the number of STD cases treated at the company clinics. There was a large increase in the number of condoms distributed, from 0 before the campaign began to 15 000 – 21 000 per month in 1992. However, the number of condoms distributed amount to less than one per worker per month. This implies that factors other than condoms are contributing to lowered incidence of STD's. There are still an increasing number of AIDS deaths every year, but since most of these people would have been infected before the campaign began; this is not a good indicator of the campaign's success. The success of the campaign could be monitored through the condom distribution programme and the monitoring of STD cases (DOH, 2000) especially since, as mentioned in section 6.3.2.2, a lowered STD prevalence leads to lowered HIV infections.

The Minister of Transport in 2000, Minister Mac Maharaj stated that the South African transport industry will pull out all stops to prevent HIV/AIDS in the transport industry. They plan to follow Thailand's recipe since Thai business succeeded in drastically reducing HIV/AIDS in the transport industry. Thailand, embarked on a condom distribution programme which raised the use of condoms among commercial workers from 33% to 93% (ILO, 2000c: 28). Other steps taken by the Thailand transport industry include encouraging companies to allow drivers to take their wives

or partners with them on long trips and reducing the number of long trips taken by drivers (ILO, 2000c: 28).

## 6.5 WHAT GOVERNMENTS CAN DO

The UNAIDS Report on the Global HIV/AIDS Epidemic (AIDS Alert 30 June 2000) notes that South Africa, through its health system, is unable to deal successfully with its HIV/AIDS epidemic. The World Health Report 2000, published on 21 June 2000, also throws doubts on how the South African system will cope with the rising tide of HIV/AIDS. WHR 2000 measure health systems in 191 member states. The findings are unambiguous that sub-Saharan Africa, including South Africa, fares badly (Van der Vliet, 2000b).

The focus of this paper is on the private sector and not on governments. However political involvement at the highest level makes a critical difference to HIV prevention (ILO, 2000c: 23). Furthermore the public sector is still the major provider of salaried employment and it is therefore essential for them to develop the resource structures for the dissemination of a permanent message (ILO, 2000: 18). As an employer all the strategies for employers, as discussed above, should be implemented by the government. Other suggestions are that government policy should encourage companies in the private sector to invest in HIV prevention in the workforce by for example providing tax breaks for those with active prevention programmes (UNAIDS, 2000: 33). In addition some authors such as Sunter (2000: 65) believe that curbing crime will also help prevent HIV infection given that in 1998, 49 280 rapes and 4 851 sexual assaults were reported.

In SA the age of first sexual experience is 17.3 (Whiteside & Sunter, 2000: 59). This knowledge creates the argument for HIV education at our schools.

In South Africa, the Minister of Health in 2000 Dr Manto Tshabalala-Msimang in her speech to parliament reported that South Africa plans to become engaged in an effort to develop a vaccine. However she also made it clear that the government regards AZT as so highly priced that it is unaffordable, or so dangerous as to be unusable and therefore the state will not use it. The Minister did however state that the department would be drawing up guidelines for the prevention and treatment of opportunistic infections (Tshabalala-Msimang, 2000). This is encouraging since it is widely believed that all parties namely government, the private sector, churches and non-governmental organisations should work together to co-ordinate a policy to prevent HIV/AIDS.



There are success stories regarding government intervention programmes (UNAIDS, 2000: 6 & 97). For example in Brazil, where over half a million adults are living with HIV, the government undertook an active lead in HIV prevention. These programmes included care and protection of the rights of people affected by the epidemic, free provision of antiretroviral therapy to all those who needed it, information campaigns and prevention services (UNAIDS, 2000: 15). The result was that, while in 1986 less than 5% of young men reported using a condom the first time they had sex, the figure in 1999 was close to 50% – a tenfold increase. Among men with higher educational levels, over 70% surveyed in 1999 said they used a condom for their first act of intercourse (UNAIDS, 2000: 15).

There are other similar examples of the success of HIV/AIDS prevention campaigns. The Ugandan government's prevention campaigns brought the HIV prevalence rate down from 14% in the early 1990s to around 8% (UNAIDS, 2000: 7) and in Zambia, surveillance showed that the percentage of pregnant girls aged 15–19 infected with HIV in the capital, Lusaka, has on average dropped by almost half in the last six years (UNAIDS, 2000: 8).

## 6.6 SUMMARY

This chapter discusses the fight against HIV/AIDS, STD and TB education programmes as well as the dissipation of the stigma around HIV which are critical in a successful program. It is important to remember that the fight against HIV/AIDS, STD's and TB is best fought in a collaborative manner. The collaborating partners must include business, labour, government and none-government organisations (NGOs). The fight will only be effective if all these sectors combine their efforts and resources.

Given the widespread experience of HIV/AIDS programme development within the private sector and a growing willingness to share experiences there is no need to reinvent the wheel. Numerous HIV/AIDS programmes have been developed; some of which are focussed on particular business sectors.

The evidence of both company implemented programmes and government implemented programmes demonstrates that we are not powerless against this epidemic. Just as clearly experience shows, the right approaches applied quickly

enough with courage and resolve, can and will result in lower HIV infection rates and less suffering for those affected by the epidemic.



## **CHAPTER 7**

### **CONCLUSION AND RECOMMENDATIONS**

#### **7.1 INTRODUCTION**

This chapter contains the conclusions and recommendations of the study, based on the literature study. Recommendations are also made regarding the policies that companies should implement.

#### **7.2 FINDINGS OF THE RESEARCH**

The objective of this study was to provide the necessary information regarding the areas in which HIV/AIDS will impact on the private sector and also to quantify the impact of HIV/AIDS on the private sector.

Chapter three illustrated the various ways in which HIV can and will impact on various companies within the South African economy. As was demonstrated, the impact on business in South Africa will be substantial not only in terms of the loss of productive labour but also in terms of the potential cost implications as AIDS affects the workforce. Chapter four quantified the losses that will be incurred if prevention programmes are not implemented as well as the savings that can be made if prevention programmes are implemented. Chapter five drew attention to the sectors that are most at risk with respect to loss of labour and reliance on a skilled labour force. Corporations, especially those with large numbers of employees in the high risk

age group, will have to manage and cope more with the impact and burden of this disease.

Section 6.4 and 6.5 illustrated that we are not helpless against the epidemic. Intervention programmes have been implemented in South African companies and in other countries, which have been shown to be successful. Chapter 4 demonstrated the quantitative savings that can be made if prevention programmes are implemented for both the worst case scenario as well as the best case scenario.

In the light of the latest HIV figures for South Africa we cannot afford to sit back and hope that the problem will pass us by. Other countries have managed to impact positively on the epidemic and so can we.

### 7.3 RECOMMENDATIONS



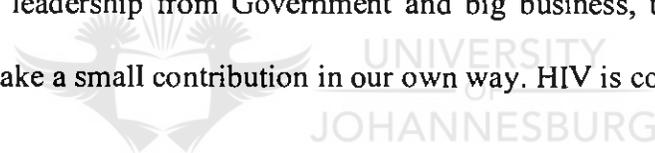
The public and the private sector need to focus on HIV/AIDS education, the treatment of sexually transmitted diseases and TB programs. There is no room for complacency companies must strategize how they will deal with the problem. Each sector should develop more specific plans based on their role in society, activities and their specific strengths. The mining and transport sector could for example do something about the length of time that staff are away from their families. An AIDS management plan should be in place which will minimise the effects of AIDS, the uninfected must be educated so that they change their behavioral patterns and the infected must be treated with understanding and compassion.

It is recognised that no single sector, ministry, department or organisation is by itself responsible for addressing the HIV epidemic. A united, powerful national AIDS plan involving a wide range of actors is required.

#### **7.4 FINAL THOUGHT**

Knowledge is one of the few tools we have to fight AIDS and its surge through the world. One of the elements to come out of research and documented information is statistics. With this information, the world has a better chance of working together to treat symptoms, determine the impact of the disease and seek a cure. Until such time that a cure is found we must implement prevention programs.

Along with visible leadership from Government and big business, the rest is up to each one of us to make a small contribution in our own way. HIV is controllable!



## REFERENCES

1. Brits, S. (1996) *An exploratory Survey among Life Assurers*.  
Johannesburg. Rand Afrikaans University (M.Com – Dissertation)
2. CSIR. (18 July 2000). *How to control the AIDS epidemic*. Retrieved 15 October 2000 <[http://bgwillia@csir.co.za](mailto:bgwillia@csir.co.za)>
3. Daly, K. (2000). *The business response to HIV/AIDS: Impact and lessons learned*. Retrieved 15 October 2000<<http://www.unaids.org/publications/documents/sectors/workplace/hiv2001.pdt>>
4. Department of Health. (2000). *Workplace guidelines*. Retrieved October 2000.  
<[http://www.redribbon.co.za/\\_corporate/default.asp](http://www.redribbon.co.za/_corporate/default.asp)>
5. Deutsche Securities. (2000). *Can we cope with another "lost generation"?*  
(Corporate Research)
6. Eskom. (2000). *Managing the impact of AIDS in the workplace*. Retrieved October 2000:<[www.metropolitan.co.za/AIDSresearch](http://www.metropolitan.co.za/AIDSresearch)>
7. Ing Barrings. (2000). *Economic Impact of AIDS in South Africa. A dark cloud on the horizon*. (Corporate Research)
8. International Labour Office. (2000). *Action against HIV/AIDS in Africa: An initiative in the context of the world of work*. Geneva: International Labour Office.

9. International Labour Office. (2000b). *HIV/AIDS: A threat to decent work, productivity and development*. Geneva: International Labour Office.
10. International Labour Office. (2000c). *New ILO study warns of HIV/AIDS catastrophe for workers and employers*. Retrieved 29 October 2000  
<<http://www.unaids.org/whatsnew/press/eng/ilo130600.html>>
11. Lifeworks (Pty) Ltd. (2000). AIDS Impact calculator. (Computer Diskette)
12. Metropolitan Employee Benefits. (2000). *Everybody's business the enlightening truth about AIDS*. Cape Town: Creda Communications.
13. Metropolitan Life. (2000). *HIV/AIDS/STD Strategic Plan for South Africa 2000-2005*. Retrieved 15 October 2000 <<http://www.metropolitan.co.za>>
14. Michael, K. (2000). *Best Practices: A Review of Company Activity on HIV/AIDS in South Africa*. Retrieved October 2000 <<http://www.metropolitan.co.za>>
15. Moodley, D. (February 1999). *HIV Replication and resistance* (A paper presented at the HIV/AIDS update symposium). Durban, February 1999.
16. Smart, R. (1999). *HIV/AIDS in the workplace*. Retrieved October 2000  
<<http://www.metropolitan.co.za>>
17. Speakout. (2000) pamphlet issued by Hannover Reassurers

18. Tshabalala-Msimang, M (2000:Pretoria) *Government attitude to AZT and government policy on HIV/AIDS treatment.* (Health Minister Dr Manto Tshabalala-Msimang report to Parliament 2000).
19. UNAIDS. (30 November 1998). *AIDS in Africa. An UNAIDS Fact sheet.*  
Retrieved October 2000 <<http://gbgm-umc.org/programs/wad98/saepap98.html>>
20. UNAIDS. (5 July 2000). *Report on the global HIV/AIDS epidemic* Retrieved October 2000: <[http://www.unaids.org/epidemic\\_update/report/Epi\\_report.htm](http://www.unaids.org/epidemic_update/report/Epi_report.htm)>
21. Van der Vliet. (2000). *HIV statistics in South Africa.* Retrieved November 2000:  
<[http://www.redribbon.co.za/..../news\\_detail.asp?page\\_number=397&item\\_number=6](http://www.redribbon.co.za/..../news_detail.asp?page_number=397&item_number=6)>
22. Van der Vliet. (2000b). *Unhappy facts.* Retrieved October 2000  
<<http://www.metropolitan.co.za/AIDSresearch/redribbon>>
23. Whiteside, A & Sunter, C. 2000. *AIDS The Challenge for South Africa.* Cape Town. Tafelberg Publishers Ltd.
24. Xoli N.I. Bikitsha (1999) *National HIV and Syphilis Survey protocol in South Africa* Retrieved October 2000 <<http://www.metropolitan.co.za>>