

TITLE

**ASSESSING THE IMPACT OF THE HUMAN IMMUNODEFICIENCY VIRUS /
ACQUIRED IMMUNODEFICIENCY SYNDROME ON
VOLKSWAGEN OF SOUTH AFRICA**

BY

STEPHEN MARK WHITE

Presented in partial fulfilment of the requirements for the Master's Degree in Business
Administration (MBA) in the Faculty of Management at the Port Elizabeth Technikon

PROMOTER: PROFESSOR J J ZEELIE

DECEMBER 2001

DECLARATION

This treatise has not been previously accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

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ACKNOWLEDGEMENTS

I wish to express my gratitude to the following individuals, without whose help it would not have been possible to successfully and timeously complete this document. I made no attempt to order the importance of people's contributions since my thanks to every one of them is 'from the heart' and in undivided share.

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To the company *Metropolitan Life (South Africa)*, particularly Mr Nur Samuels and the people who work in the area that is developing the RedRibbon.co.za venture. Your generous supply of information made a real contribution to the implicit value that it is hoped can be found in this document. For opening your stores of documentation to me without hesitation or restraint (despite my rush) and for your sincere desire to help, thank you.

To the great company *Volkswagen of South Africa (VWSA)* - that collection of people, things and methods which I have thus far been proudly associated with for my entire working life. I owe my sincere gratitude to the many people who responded to the survey. I trust the research findings are enlightening to you, or at least that they reduce some of the uncertainties you have about the subject of HIV/AIDS. I also hope that this effort plays a meaningful part in

accelerating, establishing and strengthening future actions to reduce the pain HIV/AIDS has and continues to inflict on your bodies and spirits. My heart goes out to all who have lost friends, family and loved ones to it.

Special individuals at VWSA must be singled out for their help.

My respectful thanks to Mr Johann Rautenbach of the Human Resources division of VWSA, who trusted me enough to provide not only guidance and support, but with authority to collect the information which comprised the empirical part of this research. Your acceptance of this endeavour opened very many figurative doors. I hope that you are pleased with the result. I also hope that the sincerity you showed to me in this matter is an indication of the attitude of others of your stature at our company. If it was, then I am sure that the human immunodeficiency virus will soon find that life at VWSA is hard indeed.

To Phyllis Ndimba, Victor Gietyese, Xola Blouw and Sabele Stuurman who translated the entire survey into Xhosa for the benefit of those who cannot understand English, thank you. To Jean Baker who published my request for assistance in the daily newsletter, thank you.

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To Corrie Haarhoff of VWSA for helping me to get copies of the survey document in record time and for your vote of confidence in the planned survey, thank you.

There were too many people behind the construction of this research paper to mention each by name. To those collective others, who remain unsung, thank you.

Stephen White

DEDICATION

This dissertation is dedicated to

Mr Hans Christiaan Maergner

Managing Director of Volkswagen of South Africa

May God bless you with the wisdom to lead wisely.

ABSTRACT

This treatise takes the form of an impact study. It is based on a three-month period of research involving literature review, interviews with VWSA officers and a survey of 111 of the 5500 workers who comprised the workforce of the VWSA plant in Uitenhage at that time.

The author has attempted to portray the general views of experts in the field of HIV/AIDS corporate impact and impact management. In addition he has attempted to assay the current and forecast policies and practices in respect of the management of the epidemic by VWSA.

The workers in the plant were consulted by survey and a variety of insights into the level of understanding of the epidemic, tolerance levels, expectations and so on were made. The quantification of these insights must be viewed with caution since the survey sample of 111 was relatively low for a workforce of *circa* 5500. Calculations in respect of representativity are included to facilitate calculated caution.

It has been shown that the HIV/AIDS epidemic has a considerable current impact on the company and that this impact can be expected to grow considerably in the future. It has been suggested that an active intervention program would be well timed if implemented immediately.

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LIST OF ABBREVIATIONS

3TC	Lamivudine (also known as Epivir)
AIDS	Acquired Immunodeficiency Syndrome
ASSA	The Actuarial Society of South Africa
AZT	Zidovudine
BRTA/LRTA	Business Responds to AIDS/ Labour Responds to AIDS
CF	Calibration Factor
CI	Confidence Interval
DNA	Deoxyribonucleic Acid
DOHSA	Department of Health South Africa
ELISA	Enzyme-Linked Immunosorbent Assay
GTZ (GmbH)	<i>“Deutsche Gesellschaft für Technische Zusammenarbeit (Gesellschaft mit beschränkter Haftung)”</i>
HIV	Human Immunodeficiency Virus
HIV/AIDS	To be read in context as either of the following: <ol style="list-style-type: none"> 1. An adjective describing the group comprising both HIV infected and AIDS diagnosed individuals. 2. As a noun describing the AIDS that results from the HIV, explicitly excluding all other cases of AIDS. 3. As a collective noun describing the all carriers of HIV, whether diagnosed with AIDS or not.
LCL	Lower Confidence Limit
MBA	Masters Degree in Business Administration

MMWR	Morbidity and Mortality Weekly Report (United States)
MRC	Medical Research Council South Africa
RNA	Ribonucleic Acid
SIV	Simian Immunodeficiency Virus
SMOG	Simplified Measure of Gobbledy-gook
STD	Sexually Transmitted Disease
TB	Tuberculosis
UCL	Upper Confidence Limit
UN	United Nations
UNAIDS	Joint United Nations Program on AIDS
USA	United States of America
VWSA	Volkswagen of South Africa (Pty) Ltd

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CHAPTER 1

PROBLEM STATEMENT AND DEFINITION OF CONCEPTS

1.1 THE HUMAN IMMUNODEFICIENCY VIRUS AND THE ACQUIRED IMMUNODEFICIENCY SYNDROME IN CONTEXTUAL PERSPECTIVE

1.1.1 THE HIV/AIDS PANDEMIC FROM A GLOBAL PERSPECTIVE

The human immunodeficiency virus (HIV) was pandemic in the year of research (Figure 1.1). At the outset of the second millennium the HIV was found to be the most virulent in Sub-Saharan Africa (Logie, 1999; Kinghorn and Steinberg, 2000: 3). According to the Department of Health of South Africa (DOHSA), it was estimated that six out of every ten men, eight of every ten women and nine out of every ten children infected with the virus were to be found in Sub-Saharan Africa (DOHSA, 2000a). The HIV causes Acquired Immunodeficiency Syndrome (AIDS) (Teeter, 2000).

There is currently no known cure for the HIV or for the resulting condition, AIDS (BBC News, 1999). The latter eventually leads to death.

According to *Love Life* (2000: 6), nearly 95% of the total global numbers of HIV-positive people are living in the developing world. This concentration is expected to increase further as infection rates grow in countries with poverty, poor health and few effective prevention and care measures.

FIGURE 1.1: ADULTS AND CHILDREN ESTIMATED TO BE LIVING WITH HIV/AIDS AT THE END OF THE YEAR 2000



Source: *Joint United Nations Program on AIDS (UNAIDS)*, 2000: 26

1.1.2 THE HIV/AIDS PANDEMIC FROM A SOUTH AFRICAN PERSPECTIVE

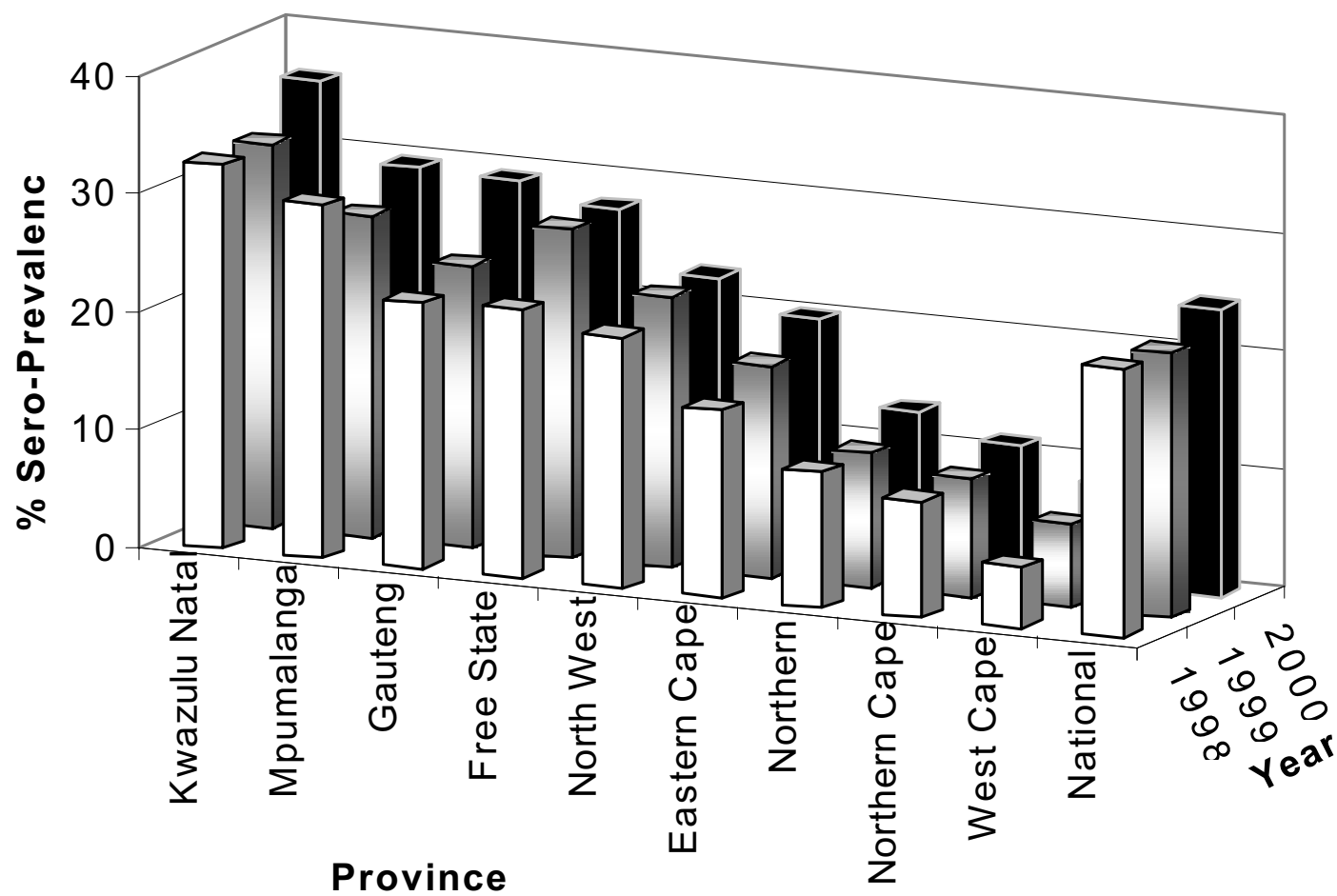
The primary instrument for national surveillance of HIV prevalence in South Africa was an annual survey of women attending public antenatal clinics. During the millennium year 16 548 women from 400 clinics located around the country participated in the eleventh such survey. Of these, 24.5% tested positive for the HIV (DOHSA, 2000b). This result is shown in Figure 2 together with a provincial analysis and comparative data for two preceding years.

The sero-prevalence levels shown in Figure 1.2 do not directly represent the sero-prevalence in the total population because of inherent bias in the survey population.

Certain methodologies were used by the DOHSA to extrapolate general population prevalence on the basis of the results of the antenatal clinic survey. These methodologies had inherent limitations and their predictions must be interpreted cautiously.

Based on the antenatal data from the survey in the year 2000 and the estimation methodologies used by the DOHSA, it was suggested that the HIV was present in one of every nine South Africans (DOHSA, 2000b).

FIGURE 1.2: HIV SERO-PREVALENCE TRENDS AT ANTENATAL CLINICS IN SOUTH AFRICA FOR THE YEARS 1998 - 2000



Source: DOHSA, 2000b

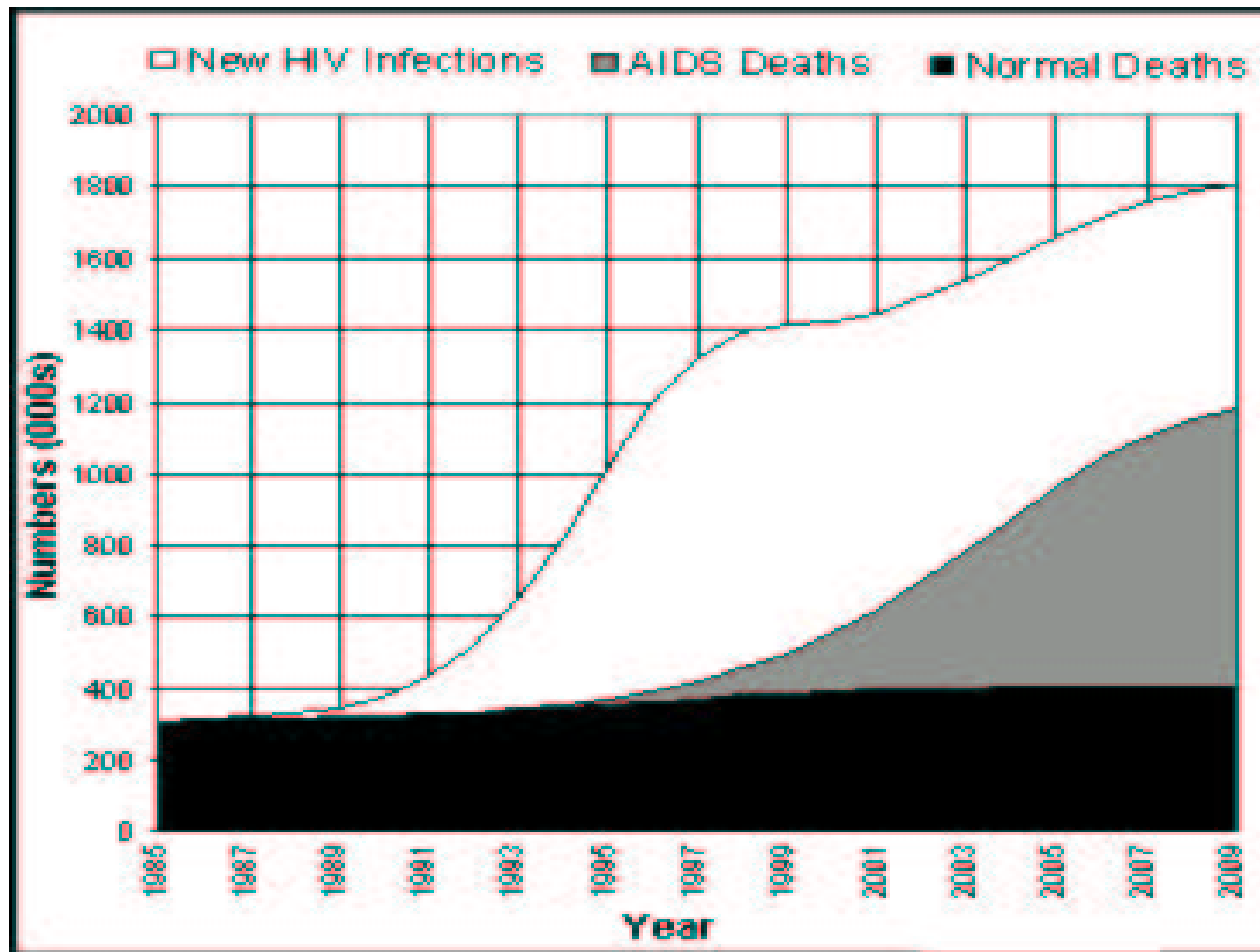
In October 2001 Bourne, Bradshaw, Dorrington, Laubscher and Timaeus (2001: 6) from the Medical Research Council of South Africa (MRC) published a report that documented the impact of HIV/AIDS on adult mortality in South Africa. In this report it was stated that "...about 40% of the adult deaths aged 15 - 49 that occurred in the year 2000 were due to HIV/AIDS and that about 20% of all adult deaths in that year were due to AIDS".

The Actuarial Society of South Africa (ASSA) used a different projection model but had similar results to those of the MRC. The ASSA projections for 1985 to 2009 are shown in Figure 1.3.

On 11 July 2000, South African President Thabo Mbeki opened the 13th World AIDS conference by expressing doubt that a virus could be "the single cause of the disease" (Thomas, 2000). In April of that year the Cabinet of the South African government had endorsed a decision to invite an international panel of experts to South Africa to deliberate on issues pertaining to the subject of HIV/AIDS. One of the questions that the South African government had posed to that team of experts was the credibility of available data indicating that the HIV was the sole cause of the AIDS epidemic (Presidential AIDS Advisory Panel Report, 2001: 9). The experts, in their report, were not conclusive in respect of this question.

The incident resulted in increased interest in the subject of HIV/AIDS and also in growing concern about the South African government's HIV/AIDS policy.

FIGURE 1.3: HIV/AIDS DEATH RATES IN SOUTH AFRICA, PROJECTED TO 2009



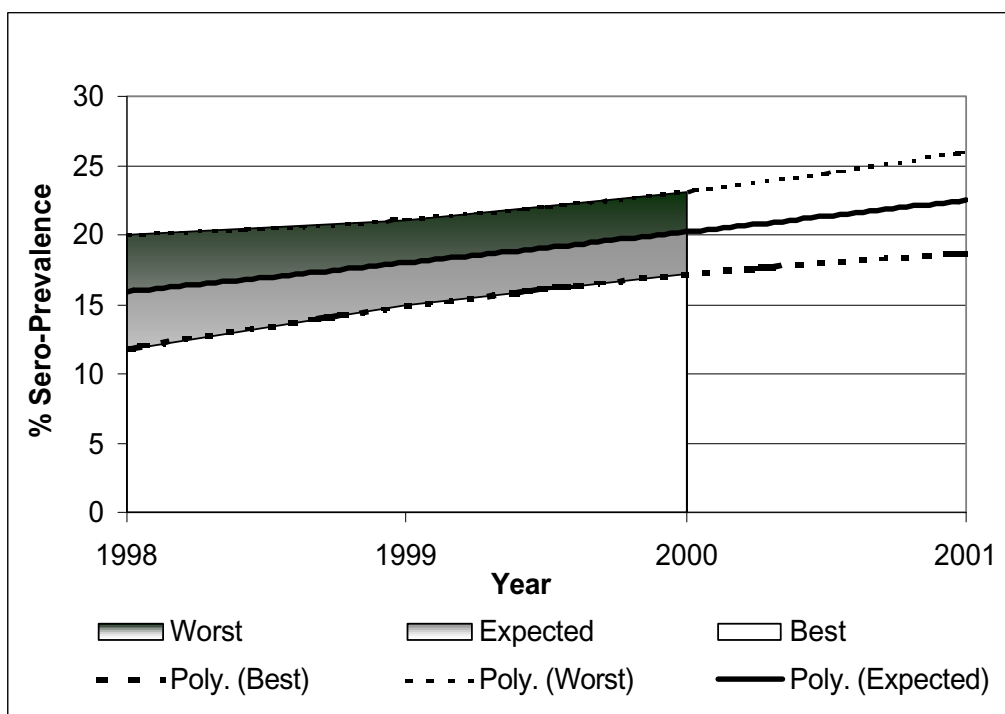
Source: ASSA Computer Model (1999 Antenatal Survey Calibration Data)

1.1.3 THE HIV/AIDS PANDEMIC FROM AN EASTERN CAPE PERSPECTIVE

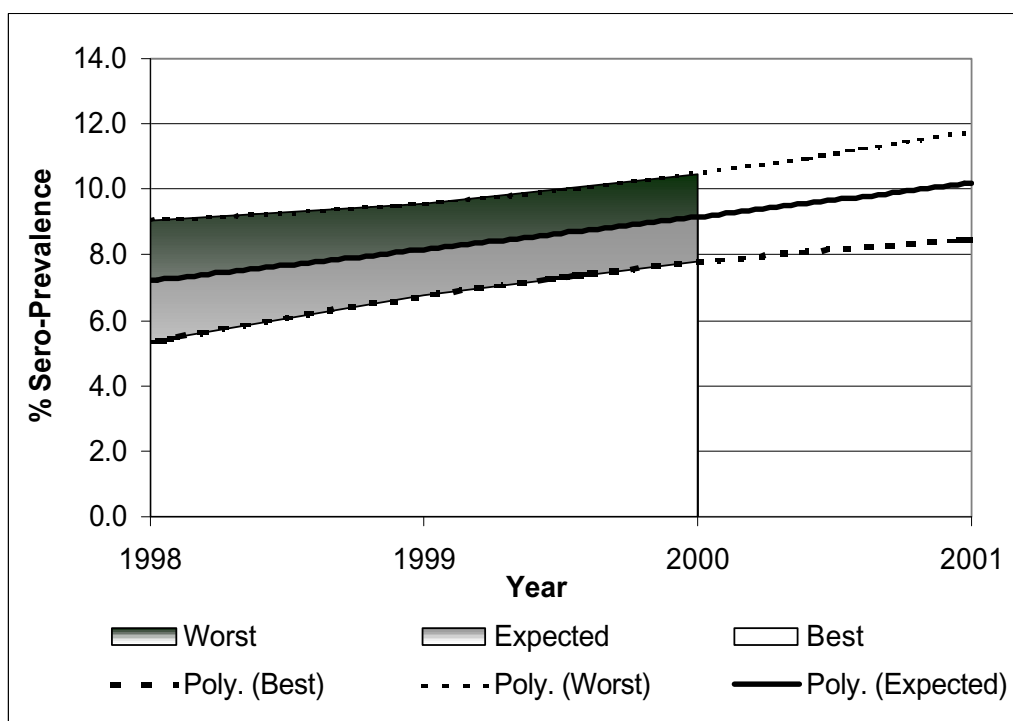
By analysing the information from surveys of women attending public antenatal clinics, the DOHSA was able to predict a probable sero-prevalence for the general Eastern Cape population. Plotting the published values for expected, worst and best sero-prevalence levels for the years 1998, 1999 and 2000, Figure 1.4 (a) was obtained. These figures were forecast one period using the polynomial method. Although a polynomial forecast on three periods of information cannot be highly accurate, the model does suggest that HIV, and consequently AIDS prevalence, will continue to rise through 2001. The ASSA model (Figure 1.2) supports this finding.

FIGURE 1.4: HIV SERO-PREVALENCE PREDICTIONS FOR THE EASTERN CAPE

(A) Women attending antenatal clinics



(B) General populace (Interpolated from A)



Source: Adapted from DOHSA, 2000

The DOHSA interpolation process related the measure of 24,5% of HIV-positive women to a projected 11,1% of the general population. Applying this ratio directly to the data used for Figure 1.4(a) yielded Figure 1.4(b). The data suggested an Eastern Cape HIV sero-prevalence of approximately 10% for the year 2001. This supported the data forecast shown in Figure 1.2.

Reliable statistical data on AIDS cases by province in South Africa was not available. This was in spite of the fact that medical practitioners were under legislated obligation to report AIDS cases to the local health authority immediately by telephone and within 24 hours in writing (South African Government, 1997). It was speculated that the main reasons for under reporting of the disease was the stigma still attached to it.

1.1.4 COSTS ASSOCIATED WITH THE HIV/AIDS PANDEMIC

According to Fourie and Quattek, co-authors of the ING Barings report on the economic impact of AIDS in South Africa (2000), “South Africa is faced with a worsening AIDS epidemic, which will have a profound impact on the country’s economic outlook”.

Significant expenses accrue as direct and indirect results of HIV/AIDS. Cost analysis can be undertaken in various ways. The most common analysis was to consider the stages of prevention, treatment and loss. A second popular analysis was to consider direct and indirect costs. A third analysis was to view costs on a variety of levels from global to individual. These three analyses can be brought together in a matrix as shown in Table 1.1. The record for industrial costs is emboldened.

TABLE 1.1: COST ANALYSIS MATRIX FOR HIV AND AIDS RELATED EXPENSES

	Management Costs					
	Prevention		Care		Loss	
	Direct	Indirect	Direct	Indirect	Direct	Indirect
Global						
National						
Sub National						
Industrial						
Family Unit						
Individual						

Source: Author (White, 2001)

All of the costs in the matrix shown in Table 1.1 are interrelated. Opportunities for management are, however, discrete. The focus of this dissertation was on the interventions at the disposal of the industrial sector, specifically the motor industry in the Eastern Cape. VWSA was, for these purposes, assumed to represent this industry.

“HIV/Aids is a management issue as much as it is a health and education issue and company directors who do not take action to protect their businesses against the impact of the disease are not complying with their fiduciary responsibilities” (Griffiths as quoted by Savides, 2000). Roberts (1999) summed up the financial realities: “The human immunodeficiency virus is an economic problem as well as a medical one.”

Fourie and Quatteck (2000: 1) believed that the reduction in industrial growth and increase in risk would combine to form a growing deterrent to foreign investment.

1.1.5 THE ROLE OF THE AUTOMOTIVE INDUSTRY IN THE ECONOMY OF THE EASTERN CAPE

The automotive industry at the time of this research was a major and growing contributor to the economy of the Eastern Province. Market pressures had forced the industry into an export oriented expansion strategy. That strategy had been successful. The industry contributed significant social and economic benefits to the Eastern Province and generated much economic activity in other areas of South Africa involved with *inter alia* the manufacture and supply of automotive components and the sales and servicing of vehicles.

The sero-prevalence of HIV in the general Eastern Province population is expected to reach 10% during the year 2001 (Figure 1.4(b)) and the potential social and economic effects of the

epidemic in the province are expected to pose a risk to the automotive industry. Damage to the automotive industry will feedback negatively into the economy and social system, creating a negative reinforcing feedback loop.

Research to better understand the impact of the HIV/AIDS epidemic on the business of the Eastern Province Automotive manufacturing industry is, at the time of this research, both important and urgent. VWSA is, at this time, the largest manufacturer of automobiles in the Eastern Cape. These facts lead to the following problem, which is the subject of this research paper:

1.2 PROBLEM STATEMENT

How will the HIV/AIDS epidemic impact on VWSA?

1.2.1 SUB-PROBLEMS

The main problem was addressed in terms of the following sub-problems:

1.2.1.1 What does Literature Study Reveal Regarding the Impact of HIV/AIDS?

Current literature was studied to establish which areas of business are affected by the HIV/AIDS epidemic. Methods for effective corporate intervention were identified.

1.2.1.2 What does Empirical Research Reveal in Respect of the Impact of HIV/AIDS on VWSA?

The policies and practices of VWSA in respect of management of the HIV/AIDS epidemic were examined. The behaviours, knowledge and attitudes of the workforce were also examined.

1.2.1.3 What Strategic Insights can be drawn from a Comparison of the Literature Study and the Empirical Research?

Gaps between literature revelations and empirical findings were identified and examined.

The recommended areas for interventions by VWSA were made on the basis of this gap analysis.

1.3 DEMARCATION OF THE RESEARCH

1.3.1 THE INDUSTRY

The automotive industry and its value network.

1.3.2 THE ORGANISATION

Volkswagen of South Africa.

1.3.3 GEOGRAPHIC DEMARCATION

The Nelson Mandela Metropole.

1.3.4 TIME PERIOD

The analysis was undertaken during the second half of the year 2001.

1.4 DEFINITIONS OF SELECTED TERMS

For the purposes of this paper the following terms were explicitly defined.

1.4.1 EPIDEMIC

Widespread, but geographically contained outbreaks of an infectious disease, where many people are infected at the same time.

1.4.2 PANDEMIC

An unbound epidemic.

1.4.3 SERO-PREVALENCE

The percentage of HIV-positive results in a given sample.

1.4.4 HIV

HIV is a virus. Refer to Attachment 1.

1.4.5 AIDS

At the time of the research, the *Centres for Disease Control and Prevention (USA)* (Avert, 2001) defined AIDS in an adult or adolescent aged 13 years or more as the presence of one of 25 conditions indicative of severe immunosuppression associated with HIV infection (such as *pneumocystis carinii pneumonia* (PCP)), or HIV infection in an individual with a CD4+ T cell count of less than 200 cells per cubic millimetre of blood. Further details are found in Attachment 2.

1.5 ASSUMPTIONS

1.5.1 CURE

No cost effective cure for HIV infection or the AIDS condition will be found in time to prevent significant problems related to these epidemics from being manifested at VWSA.

1.5.2 THE CHARACTERISTICS OF VWSA IN THE AUTOMOTIVE INDUSTRY

VWSA is representative of the automotive industry in the Eastern Cape.

1.5.3 OPPORTUNITIES FOR DISEASE CONTROL AND IMPACT MANAGEMENT

There are effective manners by which a company can address issues raised by the epidemic.

1.6 IMPORTANCE OF THIS RESEARCH

To re-iterate, the automotive industry is an important part of the economy of the Eastern Cape at the time of this research.

VWSA is the largest automotive plant in the Eastern Cape and therefore it is critical that it manages the HIV/AIDS epidemic in an exemplary way.

The sero-prevalence of HIV in South Africa, and more importantly in the Eastern Cape as of 2001, had grown to a level that could not be disregarded. Trends showed that the future held further sero-prevalence growth and challenges related to the epidemic (Figures 1.3 and 1.4).

It was clear that the automotive industry of the Eastern Cape needed to actively intervene and to manage the effects of the epidemic. The manner in which such intervention was to be conducted would require a thorough understanding of the situation on hand.

This study was a concerted attempt to identify and document critical issues related to the effects of the HIV/AIDS epidemic on VWSA in order to improve the level of understanding of the epidemic and thereby empower decision makers to make refinements to intervention plans.

CHAPTER 2

LITERATURE REVIEW: HIV/AIDS IN THE WORKPLACE

2.1 INTRODUCTION

In Chapter 1, the significance of the impact of HIV/AIDS on the workplace was identified. This chapter introduces selected theory and findings of other researchers in respect of HIV/AIDS and its impact on the workplace. There are two focal areas in the chapter. Firstly, the principal areas of impact of HIV/AIDS on business are identified. Thereafter documented practices for managing the impact in the context of the workplace are explored.

The findings are summarised at the end of the chapter (Paragraph 2.4). This body of information forms the foundation for consideration of further chapters.

2.2 THE PRINCIPAL AREAS OF HIV/AIDS IMPACT IN THE WORKPLACE

Self evidently, profitability is fundamental to commercial business. Sunter and Whiteside (2000: 99) noted a reduction in productivity, an increase in costs and a loss of customers as principal HIV/AIDS related concerns for the workplace.

Companies have held varied points of view with regard to HIV/AIDS interventions. While some companies have viewed such interventions as a cost that is to be minimised or avoided altogether, some have viewed HIV/AIDS interventions as an investment. President and chief executive officer of Tusco Display, Michael Lauber, stated that “AIDS education is an

investment in our people and in the (*sic*) long-term health and productivity as a business” (HIVPOSITIVE.COM, 2000).

Fourie and Quattek (2000: 30) pointed out that the limited pricing power of companies prevents a complete transfer HIV/AIDS related losses to the consumer. As a consequence of the inability to pass such new costs entirely on to the consumer, industry is forced to fund a large part of them from operating surplus. Fourie and Quattek forecast that this will cause an average 3.1% reduction in operating surplus for South African companies during the year 2002, rising to an expected 9.7% reduction by the year 2010 (2000: 13). These are industry wide figures and the prediction for labour intensive industries would be significantly higher as the cost changes which cause the surplus reduction are principally a function of an expected increase of 45% in the total wage bill by 2010. The automotive industry is moderately labour intensive and is accordingly expected to note moderately greater losses than those applicable to the general industry.

Daly (2000: 16) presented a comprehensive model of HIV/AIDS related losses for companies, shown in Figure 2.1:

The fundamental elements of increasing costs and declining productivity, as indicated by Daly, are common to most models. Paragraphs 2.2.1 and 2.2.2 explore these elements in further detail.

2.2.1 DIRECT COSTS

“The direct costs of AIDS will be felt through escalating employee benefit and medical scheme costs, as well as escalating rates of taxation. Direct costs such as benefits packages, recruitment, training and HIV/AIDS programs must be added to the indirect costs of absenteeism, morbidity on the job and management resources; and then combined with the systemic costs such as the loss of workplace cohesion and the effect on workforce performance and experience” (Dr Neil Bruton, Trendline Dynamics, as quoted in Car Today, 18 June 2001).

Dr Bruton’s summary is indicative of the major body of literature.

2.2.1.1 Employee Benefits Costs

Van den Heever (98: 1) noted that the impact of HIV/AIDS on employee benefits stems from the threat posed by the epidemic to the viability of the various types of insurance provided to employees. Metropolitan Life projected that the impact of HIV/AIDS would double the year 2001 cost of direct employee benefits by the year 2005, and triple them by the year 2010 (Bruton in Car Today, 18 June 2001).

Prior to the year 1998, some medical aid schemes tried to exclude coverage for HIV/AIDS. The South African Government responded with the Medical Schemes Act (131 of 1998) that forbids this practice (See paragraph 2.2.2.5 (1)). The exclusionary approach was unlikely to have the desired cost control effect anyway because the symptoms of HIV/AIDS are many, varied and not easily discerned from other causes. In substance such exclusionary tactics were an attempt at insurance loss adjustment. The exclusion of persons living with HIV/AIDS from

insurance does not eliminate the costs of the epidemic. Metropolitan Life projected the growing cost of risk benefits as a percentage of salary costs in South Africa as shown in Table 2.1:

TABLE 2.1: PROJECTED COSTS OF RISK BENEFITS AS A PERCENTAGE OF SALARY IN SOUTH AFRICA

	1997	2002	2007
Lump sum death or disability benefit	1.5	2.9	4.5
Spouse's pension	4.0	5.9	7.5
Disability pension	1.5	2.1	2.6

Source: *Metropolitan Life Ltd*, as quoted by *Love Life*, 2000: 13

2.2.1.2 Recruitment and Training

As employees are lost to AIDS and HIV-related issues, the demand for recruits and training will increase. Training methods may need to become more effective in order to speed up the process of developing skills in new workers. Multi-skilling programs may be introduced to provide fallback mechanisms in the event of unplanned absenteeism. Once they have been given such training, employees may demand a higher rate of pay (Daly, 2000:16). The costs associated with recruitment are related to the availability of labour and to the match between the skills requirements and the skills held by the available labour. Low skill level recruitment in areas of high unemployment is easier and less costly than high skill level recruitment in areas of low unemployment.

2.2.1.3 Cost of Intervention Programs

Love Life (2000: 21) and the *Health Systems Trust* (2000: 318) reported that treatment costs are approximately 3.5 to 7.5 times the cost of preventive interventions. The authors failed to indicate how these figures were calculated. Figure 2.1 indicates the areas and systems in which intervention can result in a positive effect on profitability.

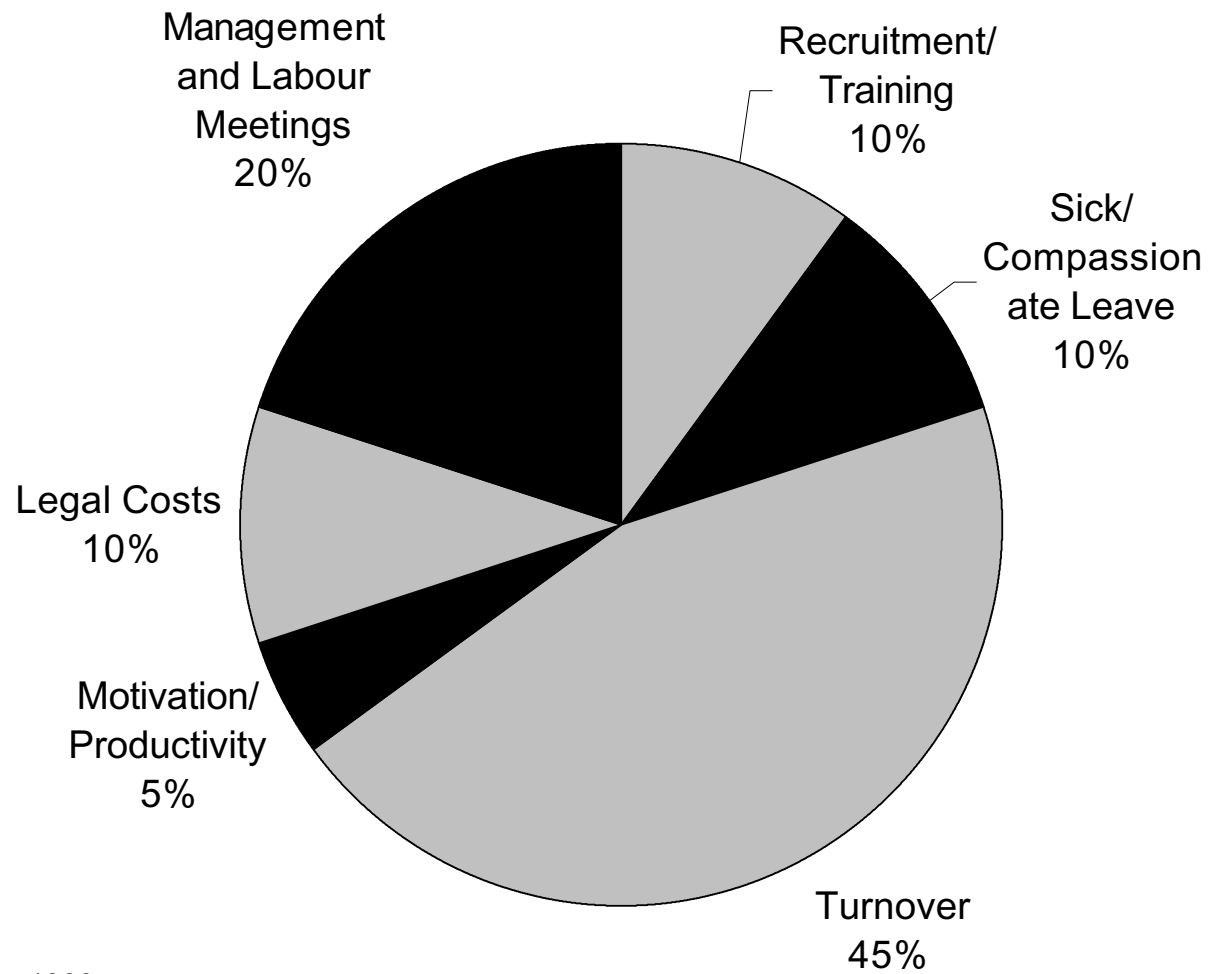
2.2.2 INDIRECT COSTS

Love Life (2000: 13) stated that the most significant costs to companies would be indirect. These costs would include absenteeism (due to illnesses or funeral attendance), loss of skills, reduced productivity, increased recruitment and training costs. The relative contribution of these elements to the total new indirect cost is indicated in Figure 2.2 (Moore, 1999). These costs would be greater for more highly skilled workers who couldn't easily be replaced (See paragraph 2.2.1.2). It was estimated that by 2010 the highly skilled group would have a 15% HIV sero-prevalence.

Companies are also facing risk associated with failure of key suppliers to take inadequate precautions in respect of the epidemic.

The categorisation of costs as direct or indirect was not standardised. Different authors and organisations placed costs in different ways. Simple comparison of direct or indirect costs ratios between sources was thus not reliable.

FIGURE 2.2: SOURCE OF ADDITIONAL INDIRECT COSTS (%)



Source: Moore, 1999

2.2.2.1 Turnover Related Costs

Gelb *et al.* (2000: 31) noted that turnover can lead to smaller and less experienced workforces. The decline in skills and tacit knowledge can also be accompanied by declining morale. Production costs associated with skills losses vary depending on the nature of the work being undertaken. Transmission of skills and knowledge becomes increasingly difficult as levels of staff turnover increase (Daly, 2000: 15).

2.2.2.2 Absenteeism, Leave, Compassionate Leave

HIV/AIDS caused increased absenteeism. This was a primary cause of the increase of visible costs and decrease of productivity in businesses. The increased absenteeism caused disruption of the production cycle, resulting in under utilisation of equipment and potentially the need to use temporary staff. This disruption could directly affect the quality of products and services (Daly, 2000: 15), leading to reputation losses and ultimately a reduction in customers as noted by Kotler (2000: 57) in his interpretation of the Profit Impact of Marketing Strategy studies.

2.2.2.3 Escalating Rates of Taxation

The cost of national interventions was primarily funded through the nation's tax income. Any significant increase in the total national cost associated with the treatment of HIV/AIDS would require that additional funding be budgeted from the nations income and savings/borrowings.

Reduced productivity and profitability of companies as a result of HIV/AIDS are factors associated with a decline in tax contributions, which occurs as the above-mentioned need for public services increases (International Labour Organisation, 2001). The increased financial burden could pressurize the government to impose additional taxation.

The South African Minister of Finance Mr Trevor Manuel announced an increase in the country's spending on AIDS related programs from R125 million in the fiscal year 2000/2001 to R546 million in the fiscal year 2004/2005. At the same time the national treasury department announced that AIDS related illnesses were officially estimated to have cost the country nearly R4 billion during the fiscal year 2000/2001 (Boyle, 2001).

2.2.2.4 Human Resource Issues

(1) Management and Labour Meetings

The negotiation of matters related to HIV/AIDS requires considerable effort in the planning and execution of interventions. Workplace disruptions may occur.

Studies such as this one impact on the time spent on normal business.

(2) Motivation/Productivity

Sicknesses secondary to the HIV/AIDS epidemic will directly affect productivity in the workplace and thereby also the competitiveness of South Africa's economy (*Institute for Future Research, Metropolitan Life* and Sunter, 1996).

“Declining levels of productivity lead to declining profits when production costs are not declining at an equal or higher rate, as in the presence of HIV/AIDS. Additionally, with declining and fluctuating productivity, the ability to meet supply demands from consumers and buyers (reliability) decreases. This has impacts on the present and future reputation of the company and thus on future profitability. The principal areas in which HIV/AIDS impacts on productivity are increased absenteeism and increased organisational disruption. “ (Daly, 2000: 15).

The International Labour Organisation, citing research from the University of Natal, claimed that productivity levels in South Africa could decline by up to 50% by the year 2010 (African Development Forum 2000, 2000: 14)

2.2.2.5 Legal Considerations

On May 11 2001, the South African company *Old Mutual* lost a legal case brought against it by an employee as a result of HIV/AIDS discrimination. The employee who brought the case had been hired before it was discovered that she was HIV-positive (Heywood, 2001: 7). After the discovery she was refused admittance to two employee benefit funds and the employee medical aid scheme. Old Mutual lost the case in spite of the fact that the woman had already resigned when she instituted legal proceedings and in spite of the fact that the service refusals had emanated from the parties offering the insurance (Old Mutual was not one of these refusing parties). This was the first South African case of HIV/AIDS discrimination that could go to the Labour Court. It represented an important legal precedent.

In terms of South African law as of the year 2001, the following apply (The Word Factory, 2000):

(1) Employment Equity Act (No. 55 of 1998)

- Unfair discrimination against an employee or applicant due to HIV status is not allowed.
- The employer may not require an employee to take an AIDS test unless the Labour Court has given permission (The definition of an 'AIDS test' includes any test, question, inquiry or other means of allowing an employer to find out if the employee has AIDS.)
- The burden of proof in cases of discrimination rests on the employer.

(2) Labour Relations Act (No. 66 of 1995)

An employee can only be dismissed if he or she is not able to work anymore, and on condition that fair procedures were followed. Fair procedure includes trying to find other work for the employee to do or changing the employee's work to something they can do.

(3) Occupational Health and Safety Act (No. 85 of 1993)

Employers must provide as safe a working environment as possible. Employers must introduce measures that reduce the risk of HIV transmission at work.

(4) Compensation for Occupational Injuries and Diseases Act (No. 130 of 1993)

This Act deals with compensation for people who are injured or catch a disease as a result of their work. If an employee is infected with HIV because of a workplace accident, he or she is entitled to claim compensation.

(5) Basic Conditions of Employment Act (No. 75 of 1997)

People with HIV or AIDS are entitled to all basic standards, including sick leave.

(6) Medical Schemes Act (No. 131 of 1998)

Since February 1999, medical aid schemes must accept anyone who wants to join them as long as the person can afford the contributions. If the employee has HIV or AIDS when joining a medical aid scheme, he or she may have to wait a year before any of the extra benefits which the scheme offers are available to them. This benefit free period was in the process of being reviewed by the government at the time of this research.

2.2.2.6 Loss of Market

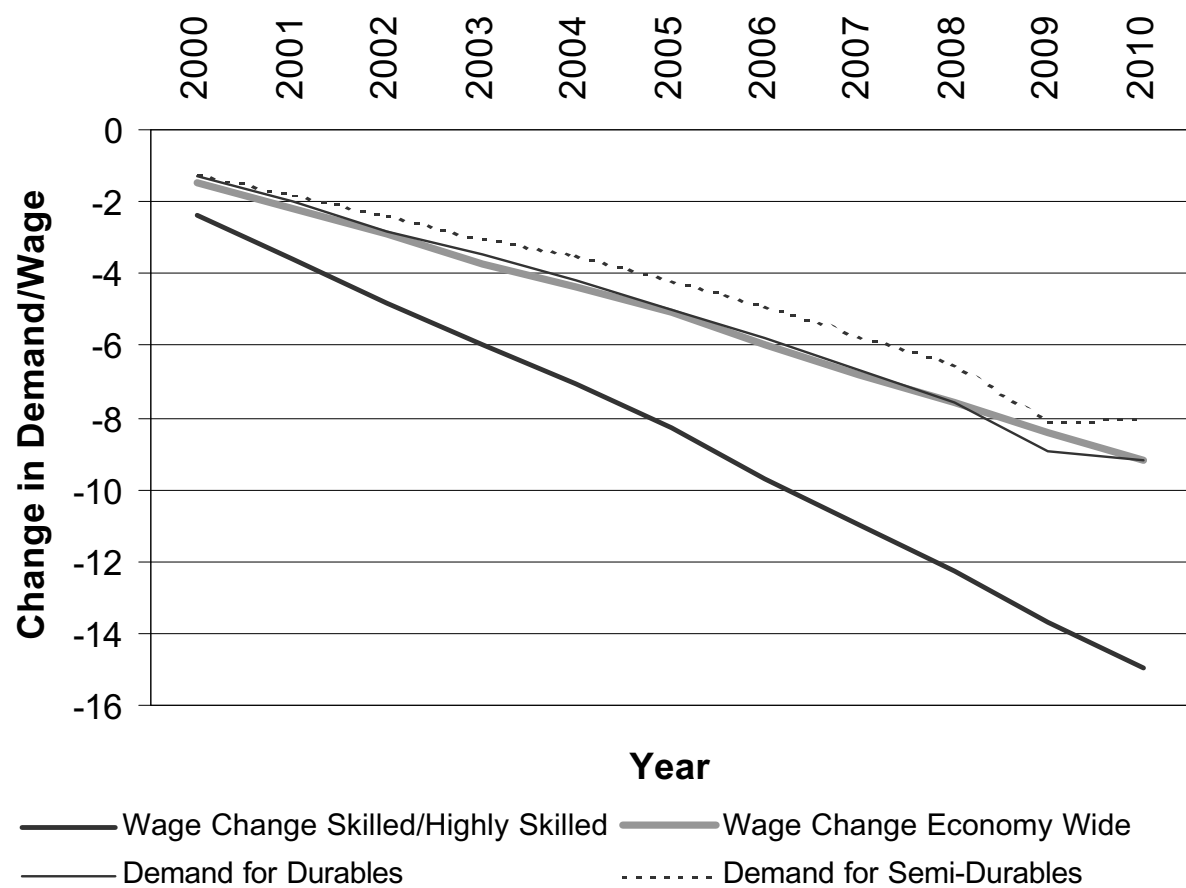
Fourie and Quattek (2000: 13) analysed demand change in terms of lower wage incomes, lower overall population numbers and increased expenditure on medical care. The findings of their work indicated that skilled and highly skilled labour would suffer a greater reduction in

wage than the combined workforce would. The skilled and highly skilled would reduce wage against the non-HIV scenario by 3.6% in 2002, and by 15% in 2010. The general workforce would have a lesser wage reduction (See Figure 2.3). The change in demand would be lower for non-durables (not shown in Figure 2.3). These were predicted to have an eight percent demand reduction by the year 2010.

The major percentages of new vehicles in South Africa were sold to corporate fleets or export markets at the time of research. The sales reduction attributable to HIV/AIDS could therefore be lower than anticipated since there is less elasticity of demand in these markets (Michael, 1998).

Non-essential goods with high demand-elasticity would be likely to be most extensively affected by the reduced availability of spending money.

FIGURE 2.3: CHANGE IN DEMAND ASSOCIATED WITH LOWER LABOUR INCOME IN THE AIDS SCENARIO (%)



Source: Adapted from Fourie and Quatteck, 2000: 14

2.2.3 LEGAL CONSIDERATIONS RELEVANT TO HIV/AIDS

In addition to the statutory considerations described in paragraph 2.2.2.5, the constitution of South Africa at the time of research also imposes strict rights and duties in respect of HIV/AIDS.

The constitution of the Republic of South Africa came into place in 1996 as a supreme law. A 'Bill of Rights' forms a key part of the constitution. The legislature is obliged to follow the ideas expressed in the Bill of Rights when they interpret common or customary law. In addition the legislature is required to take note of international law and is allowed to consider foreign law. Effectively the constitution, by way of the Bill of Rights, and the international law are the laws that the legislature is obliged to enforce. Any statutory law can be challenged if it is suspected that it is in contravention of either of the aforementioned (Achmat *et al.*, 1997).

Within the Bill of Rights, the Equality Clause lists 17 grounds that may not be used to unfairly discriminate against a person. Amongst these 17 grounds are sexual orientation and disability. In further exploration of the concept of disability, the international law includes a clause that requires freedom from discrimination on any ground. The United Nations (UN) commission on human rights has confirmed that HIV/AIDS is one of these grounds in terms of which discrimination is forbidden.

In foreign law, the United States of America views HIV (HIV/AIDS is a late stage of HIV, but all stages of HIV are included in the definition used in foreign law) as a disability. Canada, Australia, Hong Kong and New Zealand view HIV similarly (Achmat *et al.*, 1997).

2.3 REVIEW OF RECOMMENDED COMPANY INTERVENTION PRACTICE

HIV/AIDS interventions can be made on a variety of levels. The June 2000 UNAIDS report on the global HIV/AIDS pandemic summarised national responses which had brought about a reduction or stabilisation in HIV incidence (*Health Systems Trust*, 2000: 298). Four of the nine listed points are noted here since they have particular bearing on companies.

- Political will and leadership
- Societal openness and determination to fight against stigma
- Strategic response
- Community based response

These are areas where company based interventions may be particularly successful.

The barriers that are most difficult to overcome in preventing HIV infection are those associated with fear and ignorance (*Health Systems Trust*, 2000: 318).

This section sets out recommended approaches to company interventions taken from available literature.

2.3.1 THE DEPARTMENT OF HEALTH (SA)

Kinghorn and Steinberg (2000: 26) singled the improvement of workplace programs out as a priority issue in reducing the impact of the epidemic. They noted that companies have both the resources and the direct incentives to make intervention against the epidemic and also that the support of organised labour is essential. They further highlighted the need to dedicate resources to the program and to allocate clear responsibilities.

2.3.2 ROSE SMART

Smart (1999) noted ten principles for workplace intervention, as shown in Table 2.2:

TABLE 2.2: TEN WORKPLACE INTERVENTION PRINCIPLES ACCORDING TO SMART

1.	Promote non-discrimination and openness around HIV/AIDS.
2.	Offer prevention education to all workers, specifically targeting situations of high risk.
3.	Develop responses and teach skills to enable people to put the information into practice.
4.	Complement education with supportive services.
5.	AIDS workplace programs help control the epidemic and reduce its impact on business.
6.	Effective AIDS prevention yields enormous savings in averted AIDS costs.
7.	The most powerful change agents are friends and peers.
8.	The involvement of people living with HIV/AIDS is central to an effective workplace program.
9.	AIDS programs must be simple, specific, concrete and verifiable. Core management principles (simplicity, focus, precise targets, strong performance monitoring) and an explicit results chain (required inputs, outputs, outcomes and impacts) are required.
10.	Strategies and projects in areas of economic and social development which address poverty, income inequality, the bargaining power of women, housing, migrancy, etc. address underlying factors fuelling the epidemic.

Source: Smart, 1999

Smart identified three phases in the intervention process, *id est* planning, policy and program. Smart's process is described below.

2.3.2.1 Planning

In terms of planning, Smart proposed three sub-stages.

(1) Stage One

The first stage entails identifying workplace specific epidemic factors. In this way the company places the epidemic into a socio-economic and cultural context. The task is to collect information on sero-prevalence, susceptibility, demographics, workplace risk factors and health issues such as sexually transmitted diseases (STD's) and tuberculosis (TB) in the workforce.

(2) Stage Two

The second stage is identification of obstacles and opportunities

- at worker level, relating to the context within which people live and work, in respect of resources they have and the choices they are empowered to make;
- at organisational level in respect of education and awareness, health care, social development, and impact analysis.

(3) Stage Three

The third stage is prioritisation. Plans must single out actions that are realistic, that exploit inherent resources, and that will receive support from management, workers, clients and community leaders. Plans must encompass the three 'cornerstones' of an effective response to HIV/AIDS, these being prevention, care and non-discrimination.

2.3.2.2 Policy

(1) Policy Requirements

Smart pointed out that company policy should cover HIV/AIDS, STD's and TB. She stated that ideally the policy must -

- define the position of the company with respect to these sicknesses
- clearly frame the company expectations for consistency of practice;
- explicitly express standards of behaviour expected of employees, supervisors and management, particularly in respect of HIV/AIDS and STD's
- create employee awareness of the availability of assistance

(2) Policy Attributes

Furthermore, Smart indicated certain attributes of successful policies, including:

- Their formulation around principles of non-discrimination, equity and confidentiality, rights and responsibilities
- Their development in consultation with all interested parties, based on current medical knowledge and scientific information
- The ability of the company to make the policy dynamic in order to adapt to changing situations
- The amount of care exercised in communicating the policy to all existing and all new staff members.

2.3.2.3 Program Execution

According to Smart the HIV/AIDS/STD/TB workplace program is to be put in place within the policy framework.

(1) Aims of the Program

- Reducing STDs causes reduction in risk behaviour, resulting in HIV infections prevented (Smart does not provide evidence that STD reduction causes reduced risk behaviours.)
- Reducing absenteeism, morbidity and mortality
- Creating a more tolerant and accepting attitude towards HIV-infected workers
- Producing positive effects on morale and productivity
- Promoting the company's image as a good corporate citizen

(2) Attributes of a Successful Program

- Has top management support
- Is developed, implemented and monitored by bipartite committees
- Is integrated into general health promotion programs
- Is backed by access to a company health service
- Builds environments for long-term behaviour change
- Monitors impact through collection and review of company health, sick leave, turnover and productivity data
- Provides training and information support to staff managing the program;
- Provides a forum to exchange experiences and ideas

2.3.3 JENNY CRISP, ANGLO AMERICAN CORPORATION

Crisp (1999) proposed a two-pronged approach to HIV/AIDS impact management.

The first prong was impact assessment. The second prong was appropriate response to the findings of the impact assessment.

2.3.3.1 Impact Assessment

Crisp proposed assessment of three main areas.

(1) HIV prevalence

While it was noted that the most effective and accurate manner of conducting prevalence research involves voluntary testing, Crisp also noted that it might be necessary to revert to modelled approaches.

(2) Healthcare and employee benefit schemes

Crisp noted that the costs of these schemes can be forecast given sufficient demographic and risk related information. Crisp added that the resulting figures often prove informative and helpful in deciding what funds to commit to further efforts.

(3) Productivity

According to Crisp the company concerned must identify the key operations of their business and which positions are critical to maintaining these operations. In addition to succession analysis the company must consider the expected absenteeism for HIV/AIDS related reasons, including employees attending funerals.

2.3.3.2 Response to Impact Assessment Findings

Crisp proposed six main activities of response. These are:

(1) Policy development

The policy is the reference point for continuity in management through the company. Crisp viewed this activity in much the same way as Smart (See paragraph 2.3.2.2).

(2) Restructuring of benefit schemes

The feasibility of continuing with the provision of currently offered benefits must be reviewed. If it is clear that a change is necessary, such change must be negotiated with employees and their representatives.

(3) Identification of key positions and development of labour replacement plans

Companies must predict the areas in which the greatest impact is anticipated and take measures to ensure that a suitable replacement labour resource can be substituted in these areas should this become necessary.

(4) Performance Management

The monitoring of employee performance, absenteeism and general malaise is an important element of the process of identifying employees who are possibly struggling to cope with an HIV/AIDS related illness. "A good performance management system will ensure that an individual who is no longer able to work at full capacity can be considered for alternative duties for ill-health retirement. It will also ensure that all employees are treated fairly and objectively." (Crisp, 1999).

(5) Involvement of labour unions

Crisp contended that open communication with labour unions is vital to ensure that both employer and employee understand the ramifications of the impact study and the importance of actions that need to be taken.

(6) Compliance with legislation

Crisp also noted the importance of legislative compliance.

2.3.4 JOINT UNITED NATIONS PROGRAM ON AIDS (UNAIDS) (1998)

UNAIDS recommended that effective workplace programs take into consideration the legal, ethical, economic and social dimensions of HIV/AIDS. The specific recommendations of UNAIDS were as follows:

- 2.3.4.1 Establishment of equitable policies, followed by effective communication and implementation of these.
- 2.3.4.2 An ongoing program of formal and informal education in respect of HIV/AIDS for all staff.
- 2.3.4.3 Availability of condoms.
- 2.3.4.4 Diagnosis, treatment and management in respect of sexually transmitted diseases, for staff and their sex partners.
- 2.3.4.5 Voluntary HIV/AIDS testing, counselling, care and support services for employees and their families.

UNAIDS also noted that effective programs can be established by companies at a cost equivalent to a small part of the total present costs of the epidemic to them. Emphasis is placed on multisectoral involvement and extension of workplace interventions to include the local community.

2.3.5 BUSINESS RESPONDS TO AIDS / LABOUR RESPONDS TO AIDS (BRTA/LRTA)

The BRTA/LRTA group (2000) proposed a five-stage approach to managing the impact of the epidemic on a company.

2.3.5.1 Policy Development

It is recommended that the company clearly describe its current and intended position and practice regarding employees with HIV. This policy statement is used to set expected standards of behaviour for employees whilst also communicating to the employees that the

company is willing and prepared to assist them. The policy also clarifies matters that could otherwise result in breaches of law.

2.3.5.2 HIV/AIDS Policy Training for Management, Supervision and Labour Leaders

The careful consideration of company policy must be taught to the people who are in leadership positions within the company. Doing this minimises misinterpretation of the policy and maximises knowledge and understanding of it.

2.3.5.3 HIV/AIDS Education for Employees

BRTA/LRTA emphasize that knowledge of the facts of HIV/AIDS must be supported by knowledge of the requirements for compassion. The workforce should be taught how to avoid HIV infection and also how to work with HIV-positive co-workers.

2.3.5.4 HIV/AIDS education for Families of Employees

In this element BRTA/LRTA note that the company should consider the future work force as well as the current one.

2.3.5.5 Community Service and Volunteerism

This element of the five point BRTA/LRTA plan benefits the company indirectly through growth in trust between the employer and the employee. Corporate philanthropy is encouraged.

2.4 SUMMARY

2.4.1 PRINCIPAL IMPACT OF HIV/AIDS ON BUSINESS

The HIV/AIDS epidemic has been reducing the profitability of companies in South Africa. The financial impacts have been evident on the income and expense sides of the profit equation.

Cost increases have generally been categorised as direct or indirect, depending on their visibility and the ease with which they can be traced back to HIV/AIDS. Within the ambit of direct costs, the principal concerns are the costs of risk benefits such as medical insurance. Incrementally, direct costs of lesser individual impact may pose a greater threat to companies.

Within the ambit of indirect costs the principal concern has been an increase in absenteeism. Staff turnover was a close second concern. Within the automotive industry the loss of skilled workers is of greater financial consequence than the loss of unskilled workers. This is due to the high rate of unemployment in South Africa. According to *Statistics South Africa* (quoted by the South African Press Association, 27 September 2001), the Eastern Cape's official unemployment rate was the highest in the country at 30.6% in February 2001. The Northern Province had second highest unemployment rate at 29.7%.

Declining productivity reduces income. Market reduction attributed to changing spending priorities and population size was expected to have a low impact on motor manufacturers. This was because automotive manufacturers in South Africa target more stable consumer markets (those with a low relative elasticity of demand).

2.4.2 CORPORATE HIV/AIDS INTERVENTIONS

Corporate interventions in respect of the epidemic require that a comprehensive assessment of the impact of HIV/AIDS on that company be conducted. Such an assessment would covers more than the business impact. Included would be such issues as sero-prevalence, susceptibility, demographics, risk factors *et cetera*. With cognisance of the impact, a policy would be developed and implemented.

The cost of intervening would be lower than the cost of not intervening.

CHAPTER 3

DESIGNING EMPIRICAL DATA COLLECTION INSTRUMENTS

3.1 INTRODUCTION

In Chapter 2 an overview of current literature related to the expected impact of HIV/AIDS on business was presented. In addition documented views of best practice for corporate interventions in respect of the epidemic were presented.

In this chapter, the design of an approach for empirical assessment of the impact of HIV/AIDS at VWSA is documented. The chapter contains two focus areas. Firstly, the information requirements were established and suitable instruments of collection were selected. Thereafter the collection instruments were prepared.

3.2 INFORMATION REQUIREMENTS

To establish the impact of HIV/AIDS at VWSA it was necessary to collect data to quantify certain aspects of policy as well as certain situational and personal issues in the workplace. To company executives the financial aspects of the epidemic would be critical. These financial aspects add to the weight of social responsibility and together provide a primary motivation for company HIV/AIDS policy. Financial insight is however insufficient for the planning of effective interventions.

To plan interventions effectively, company executives would require a thorough understanding of the impact of the epidemic on the workforce and the susceptibility of the workforce to further

impact. Such an understanding required research into various aspects of attitude, behaviour, situation *et cetera* within the workforce.

The data requirements for the empirical research phase of the research paper were therefore twofold.

The first requirement was to obtain information regarding the financial impact of the epidemic on the company.

The second requirement was to gain insight into the impact of the epidemic on the workforce.

The details of the existing HIV/AIDS policy at VWSA also had to be determined.

3.2.1 FINANCIAL IMPACT

The intended manner of establishing the financial impact was to first identify, then categorise and then quantify the costs associated with the epidemic.

The real financial impact on a company is not measurable in monetary terms alone, because many of the costs are too complex to convert from observation or cognition back to currency. For the purpose of this paper indicators which would clearly be financially pertinent but which could not easily be converted to a monetary amount (for example absenteeism trends) were presented in their native format. The interpretation of these matters into monetary estimates would be a suitable basis for future research.

For the purpose of this paper direct costs were considered to be those that could immediately be attributed to the epidemic.

Indirect costs were taken as those that were distanced from the epidemic by some interim stage or series of stages in the chain of cause and effect.

Certain costs were beyond the scope of this paper or could not be effectively measured. These were noted separately.

Officers of VWSA held all of the information required in categories 3.2.1.1 and 3.2.1.2. The chosen instrument for collection of this information was the interview. Since much of the information desired was confidential and its availability depended on its prior surveillance by VWSA, it was presumed that certain research requirements would be determined which would form the basis for possible future research projects.

The desired information by category follows:

3.2.1.1 Direct Costs

(1) Risk Benefits: Medical Aid, Insurances, Retirement Funds

- the trend in cost to VWSA, weighted to account for fluctuations in the workforce size

(2) HIV/AIDS Programs Administered by VWSA

- the amounts paid or budgeted for current, past and planned interventions

(3) Medical Treatment Given by VWSA

- the trend in the number of sexually transmitted diseases and diseases symptomatic of HIV/AIDS that are brought to the attention of the medical department, weighted to account for fluctuations in the workforce size

3.2.1.2 Indirect Costs

(1) Absenteeism

- the trend in absenteeism in terms of working days weighted by workforce size
- the absolute absenteeism figures
- an assessed cost of one average day of absence to VWSA

(2) Staff turnover

- the trend in staff turnover as a percentage of workforce size
- the absolute turnover figures
- the assessed average unit cost of recruitment and induction

3.2.1.3 Costs for which Measures and Instruments were not available

(1) Management Resources Used

The cost of managing the network of interactions that constitute the epidemics impact on the company management system was too closely related to normal operational costs to be calculable.

(2) Cohesion and Motivation Losses in the Workforce

No quantitative instrument that would be practical for this research was available for accurately distilling data to quantify this loss.

(3) Legal Costs

Lawsuit related legal costs are unplanned. The potential damages of individual cases of discrimination are notable but the occurrence risk was practically incalculable with existing data.

(4) Taxation Changes

The possibility of increased taxation was latent but could not be assumed or quantified.

(5) Change in Demand for Product

Since the primary consumers of the product of VWSA were not expected to purchase fewer products as a result of the HIV/AIDS epidemic, this category of losses was not explored.

3.2.2 COMPANY POLICY ON HIV/AIDS

It was necessary to determine whether the company had a policy on HIV/AIDS. A copy of any existing policy was required. The chosen instrument for Interpretation of potentially unclear aspects of the policy was the interview.

3.2.3 WORKFORCE IMPACT AND SUSCEPTIBILITY

The impact of the HIV/AIDS epidemic on a workforce is principally measured by sero-prevalence and behavioural profiles. For compassionate and pragmatic purposes, personal losses of a financial or emotional nature have to be acknowledged during collection of this type of data. In assessing the susceptibility of the workforce, information regarding certain circumstantial matters is also required.

3.2.3.1 Sero-Prevalence

Budget constraints applicable to this research project precluded the establishment of sero-prevalence data specific to the VWSA workforce through testing. It was proposed instead that such data be estimated through interpolation, by application of the 'Red Ribbon' model as shown in Figure 3.1 (Muhr, 2000). Application of this model required input of specific information held by officers within VWSA. VWSA was not willing to divulge the highly sensitive data that was required to use this model in case its confidentiality was compromised.

The chosen instrument for sero-prevalence data collection was thus interpolation. This was mentioned as a possible fallback by Crisp (1999) in paragraph 2.3.3.1(1). In addition the survey was amended to include a direct enquiry as to HIV status.

FIGURE 3.1: DEMOGRAPHIC AND COST INPUT TO THE RED RIBBON MODEL

The Red Model - Microsoft Internet Explorer

Demographic Input Cost Input Calculate Default Values

Start Population: Scenarios:

Input Year: Interventions:

Gender Split: Male: % Female: % Risk Criteria:

Projection Period: to Age Profile:

Geographic Location: Population Growth:

Fixed Growth of: % pa

Race	Distribution	Avg Income p.a.
Asian	<input type="text" value="5"/> %	R <input type="text" value="50000"/>
Black	<input type="text" value="80"/> %	R <input type="text" value="50000"/>
Coloured	<input type="text" value="5"/> %	R <input type="text" value="50000"/>
White	<input type="text" value="10"/> %	R <input type="text" value="50000"/>

« back close

The Red Model - Microsoft Internet Explorer

Demographic Input Cost Input Calculate Default Values

Death in Employment
 % of all employees dying of aids will receive a lumpsum payment of times their annual salary.

AIDS sick disability
 % of all AIDS sick employees will receive a lumpsum payment of times their annual salary.

HIV depression disability
 % of all HIV+ employees in any given year draw % of annual salary

Medical Aid contribution
HIV+ and Aids sick employees (not disabled) claim on average an additional % of medical expenses.
The basic contribution towards a medical scheme is % of salary on average.

Absenteeism
On average an HIV positive employee will claim additional sick leave of working days per year.
An Aids sick employee will claim additional sick leave of working days per year.
Employees are taking additional compassionate leave to the tune of working days per HIV positive employee.
All employees on disability are considered absent.

Replacement
The cost of replacing an employee who died of aids is % of annual salary.
This includes recruitment, training and period until full productivity.

Human Resource efforts
Time devoted to awareness campaigns, meetings, dispute resolution and other such issues ammount to working day per employee, per year.

Lower productivity
Lower morale and increased stress will decrease productivity and thus turnover by % for each 10% HIV prevalence amongst employees. The turnover is assumed to be times the total salary package.

Source: Interlaced, uncorrected Screen Capture, www.redribbon.co.za

3.2.3.2 Employee Emotional and Financial Issues

Data to be collected included the following:

- (1) Experiences of Loss in the Family
- (2) Experiences of Loss in the Social Circle
- (3) Personal Expenditure Attributed to HIV/AIDS

3.2.3.3 Circumstantial Issues

Information from which to obtain insight into behavioural risk in the group was required. This information was also personal and confidential and the chosen instrument of collection was again the survey.

- (1) Employee Understanding of HIV/AIDS.
- (2) Discrimination and Stigmatisation of People with HIV/AIDS.
- (3) Sexual Behaviour and Condom Use.
- (4) Attitudes Regarding HIV Testing.
- (5) Employee Expectations of VWSA in Managing the Epidemic.
- (6) Respondent Stratification Information.

3.3 DESIGN OF THE DATA COLLECTION INSTRUMENTS

3.3.1 DESIGN OF INTERVIEWS

The confidential nature of the required information amplified the importance of receiving the support and confidence of the human resources division personnel. With the required support, interviews were conducted with those officers responsible for the information required.

The following paragraphs reflect the key issues to be addressed per main concern area.

3.3.1.1 Risk Benefits

(1) Medical

- Cost of medical aid benefits
 - Recent Trends
 - Prognosis
 - Cost to VWSA
 - Cost to Employee
- General malaise
- Medical centre trends
 - STD
 - Overall

(2) Employee Insurances

- Nature of Benefits
- Cost of benefits
 - Recent Trends
 - Prognosis
 - Cost to VWSA
 - Cost to Employee
- General malaise

(3) Retirement Funds

- Nature of Benefits
- Cost of benefits
 - Recent Trends
 - Prognosis
 - Cost to VWSA
 - Cost to Employee
- General malaise

3.3.1.2 HIV/AIDS Intervention Programs

- Past Interventions
 - Cost
 - Success
- Planned Interventions
 - Cost
 - Objectives
- General Malaise

3.3.1.3 Absenteeism

- Trends
 - By reason (Type of absenteeism)
 - By absenteeism rate
- Prognosis
- Cost to VWSA
 - Total estimated costs
 - Average cost of one lost day

3.3.1.4 Employee Turnover

- Trend
 - General
 - By skills level
- Prognosis
- General Malaise

3.3.2 SURVEY DESIGN

3.3.2.1 Principles

The following principles were strictly applied during the design of the survey document.

- Anonymity

The names of respondents were not recorded. Questionnaires were completed in privacy. This anonymity provided security for the respondent's in respect of their confidential disclosures.

- Minimisation of the required level of literacy and ease of completion.

In this regard the Simplified Measure of Gobbledy-gook (SMOG) index was calculated for the final draft of the survey form. The SMOG index was developed by the United States Department of Health and Human Services as a method of ensuring effectiveness in the planning of health communication programs (United States Department of Health and Human Services, 1992). The SMOG index was found to be eight, which corresponds to a United States 'grade level' of six with a confidence interval (CI) of one and a half grades. Ease of completion was achieved by the use of selection boxes and large font layout.

- Logical progression of questions
- Traceability

In this regard the survey records were numbered and retained. Any questions regarding what data respondents said can be checked back to the original records. In addition to this a computerised database was established and the respondents data was captured digitally. The author must be contacted if access to this data is required.

- Ease of data interpretation

The basic interpretation of each question was made easy by closing the questions and limiting answers to option selection. The response database facilitated cross-tabulation of data.

- Latent data value.

The questionnaire was designed to provide data from which a large variety of observations could be made, including many beyond the scope of this paper. In this respect the questions were selected and presented in a way that allowed considerable first level cross tabulation and almost limitless multi level information drilling. The final survey contained 50 questions from which could be drawn the basic 25 interpretations and 2401 first level cross-tabulated comparisons (See Figure 3.1).

FIGURE 3.2: FIRST LEVEL CROSS-TABULATION POSSIBILITIES (ABRIDGED)

	Married/6 months together	Gender	Ethnic Group	Age Group	Work Place	In leadership position	Know HIV + Person	Am HIV +	Family AIDS Death	Friend AIDS Death	HIV Cost Monthly	Previous STD	Tested for HIV	Vaccinated for TB	VW help for HIV acceptable	VW help for STD acceptable
Married/6 months together																
Gender																
Ethnic Group																
Age Group																
Work Place																
In leadership position																
Know HIV + Person																
Am HIV +																
Family AIDS Death																
Friend AIDS Death																
HIV Cost Monthly																
Previous STD																
Tested for HIV																
Vaccinated for TB																
VW HIV help acceptable																
VW STD help acceptable																

Source: Author (White)

3.3.2.2 Process

A draft questionnaire was created and distributed to test respondents to gauge effectiveness and to check for undetected errors of composition. Based on the feedback from ten test respondents and that of other experts, a revised version of the survey, in three languages, was drafted. Testing by five more candidates led to slight adjustments. A sample of the final version of the survey document is shown in Attachment 3.

The final survey was not optimal in terms of the questions asked or their respective wording. It was used regardless due to time constraints.

3.3.2.3 Respondents

(1) Sample Size

The desired sample size was calculated using an online facility provided by *Creative Research Systems*. In order for the survey results to achieve a 95% confidence level with a 5% confidence interval (CI) when using them to predict matters in the full VWSA employee population of approximately 5500, the online facility indicated that 359 respondents were required.

(2) Request for Participation

A request for participation was made through the internal newsletter 'News Today' and also on the VWSA Intranet system 'VIKI'. Interpersonal marketing of the concept was conducted in selected areas where penetration of 'VIKI' or 'News Today' information was perceived to be below the company average.

(3) Availability of Survey forms

The surveyor distributed Five hundred copies of the survey form. This distribution was effected interpersonally, with each blank form being handed to a prospect that agreed to participate on the terms of anonymity. The interpersonal approach was chosen in a bid to increase the response rate as well as to ensure that even remote areas of the factory were given the opportunity to participate.

Forms were also available from the surveyor on request or in portable document format from the company intranet VIKI.

(4) Form Collection

Forms were collected using marked collection boxes located at the entrance/exit points of the three factory plants in Uitenhage.

(5) Survey Closure

The survey was declared closed on Monday 18 November 2001. Notification and gratitude for participation was expressed through the 'VIKI', 'News Today' and interpersonal communication channels.

3.4 SUMMARY

The empirical data collection was achieved by survey and interview.

Interviews were selected as the favoured means of collecting information from the agents representing the juristic personage of the company.

Surveying was chosen as the tool through which to collect information that could confidently be seen as representative of the entire VWSA workforce.

CHAPTER 4

INTERVIEW AND SURVEY FINDINGS

4.1 INTRODUCTION

In Chapter 3 the data that was needed to fulfil the objectives of this research was identified. The instruments that were used to collect that information were also identified and where necessary clarified. After the instruments had been selected and prepared, the data was collected.

In this chapter the findings from the data collection process are presented. These findings include interview disclosures, observations from interview disclosures and the results and selected interpretations of the survey data.

4.2 INTERVIEWS

Officers of VWSA provided all data and information used as a basis of this section. A representative of the office of the Director of Human Resources gave the principal authority for use of the data and information and the relevant curators of information also gave their independent permissions.

In some instances the data and information that were provided could be combined or manipulated to produce additional information beyond that which had been provided.

4.2.1 FINDINGS FROM AN INTERVIEW WITH MANAGEMENT OF THE HUMAN RESOURCES DIVISION

The leadership of the Human Resources Division were pleased at the opportunity to contribute to further research into the epidemic at VWSA. It was revealed that VWSA was preparing to introduce a major new intervention program. The details of this program were not revealed due to its early stage of planning. A basic outline of the disclosed details of the program is contained in paragraph 4.2.2.2 (2) (b).

4.2.1.1 Incidence and Prevalence of HIV and AIDS

It was also revealed that the division had commissioned Dr Clive Evian of AIDS Management and Support (South Africa) to conduct a risk analysis of VWSA. Evian's report (hereafter referred to as the Evian report) was released in August 2000 and was at the time of this research the only prognosis for incidence and prevalence of AIDS and HIV cases with specific reference to VWSA.

The financial, logistical and time constraints that applied during Evian's analysis governed the data collection instruments and accordingly placed, as Evian noted, considerable limitations on the accuracy of the projections contained in the final report. It was assumed that Evian would have been forced to use a two-stage process in his projection methodology. Firstly he would have had to estimate existing and prior incidence, and prevalence levels for both HIV and AIDS. Secondly he would have had to project those figures using a proprietary forecasting model. The details of that proprietary model were not revealed.

In order to estimate the existing and prior prevalence levels, Evian was provided with data in respect of the workforce. It was assumed that the process of estimation would then have had to involve a painstaking process of:

- grouping the number of employees in terms of risk categories (probably age categories),
- multiplying these group headcounts by the weighted prevalence and incidence rates established for the Eastern Cape by the DOHSA through the annual antenatal clinic survey and finally
- calibrating the data for demographic deviations from the Eastern Cape profile.

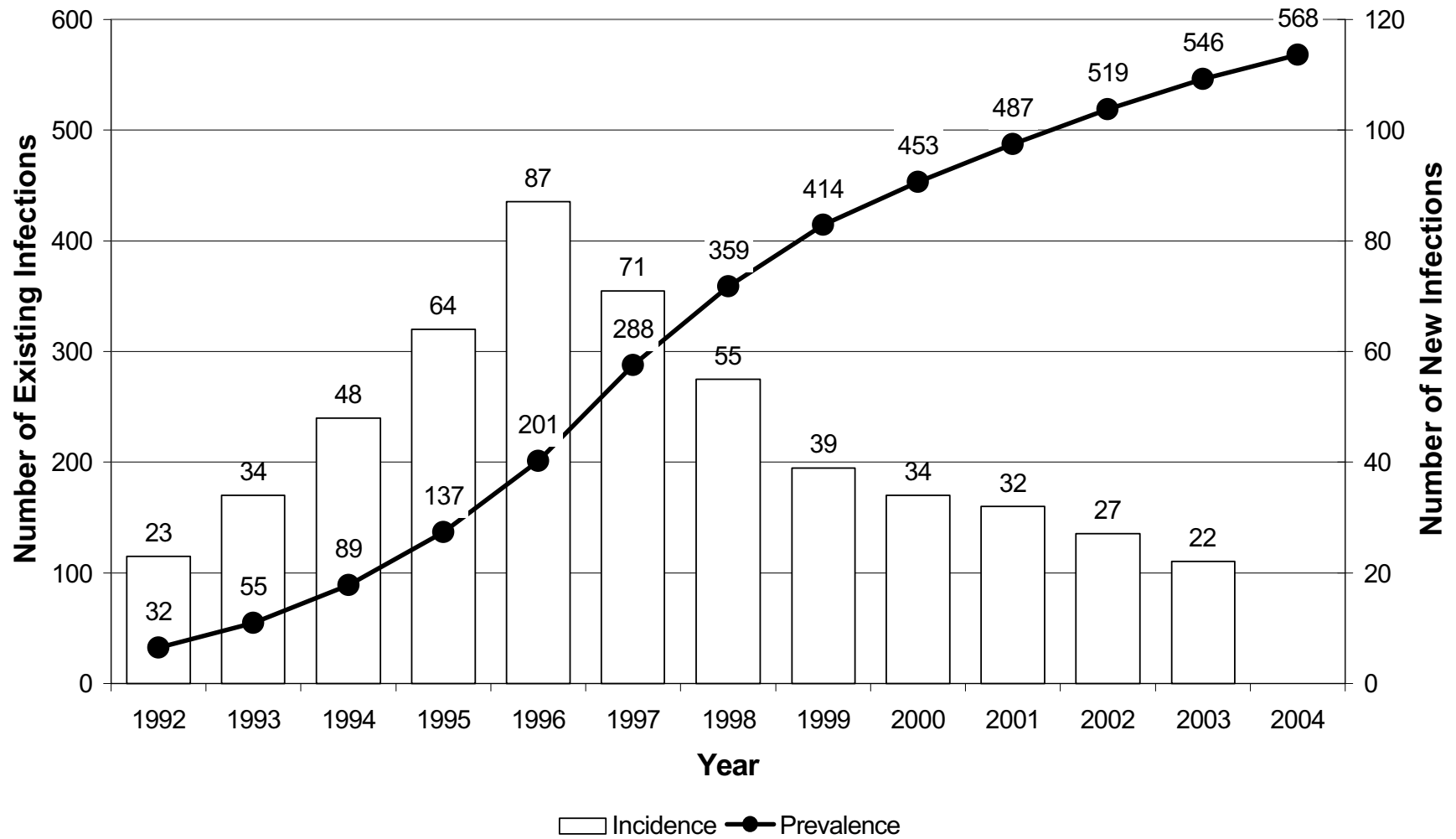
This would have had to be done for each year of estimation, using the relevant data for that year. The projection of the four streams of figures would be achieved by using a forecasting model calibrated using data representative of the Eastern Cape. Forecasting of unknown matters such as demographic changes, interventions and the like could not, however, be accounted for in such a model.

Clearly, this scientific and analytical method of estimation would provide the most accurate guess for the company population without actually testing the company population, but it would be wise to view the results with extreme caution.

The incidence and prevalence predictions of Evian were set into a format suitable for this paper (Figures 4.1, 4.2 and 4.3).

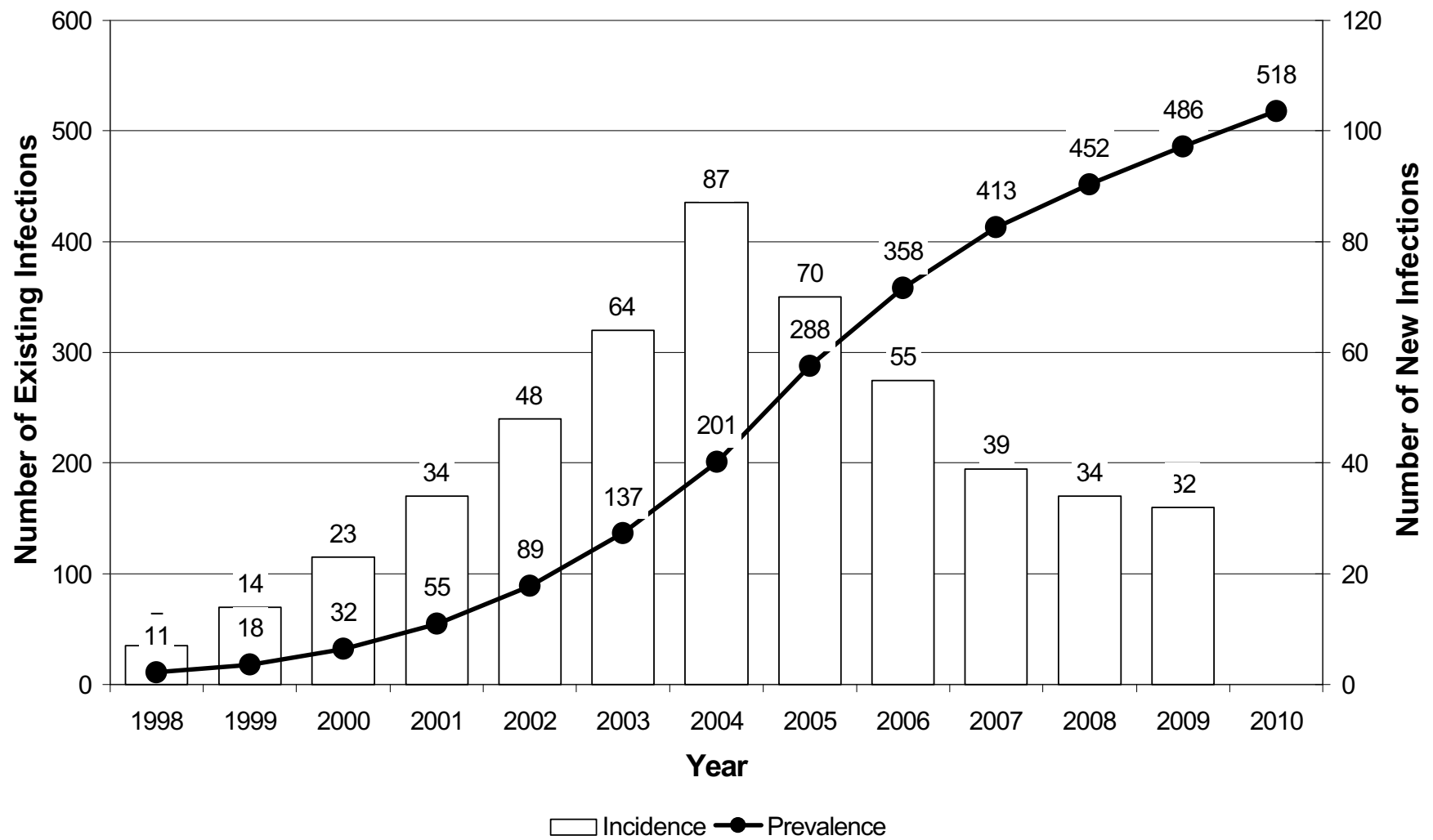
Evian went on to make an extensive list of recommendations, which are not re-stated here.

FIGURE 4.1: ESTIMATED HIV INCIDENCE AND PREVALENCE AT VWSA 1992 - 2004



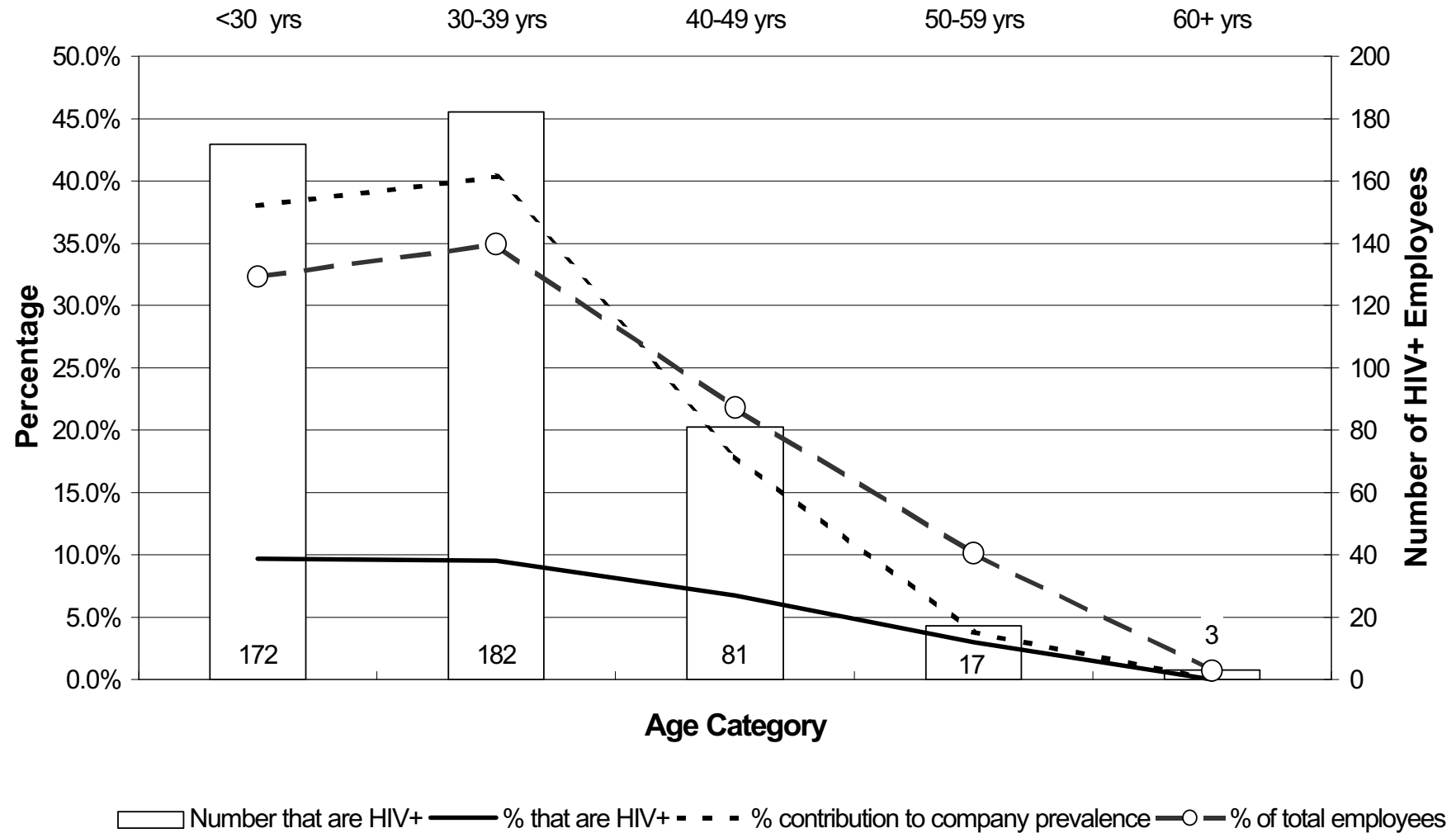
Source: Evian, 2000

FIGURE 4.2: ESTIMATED AIDS INCIDENCE AND PREVALENCE AT VWSA 1992 - 2004



Source: Evian, 2000

FIGURE 4.3: ESTIMATED HIV PREVALENCE BY AGE GROUP AT VWSA FOR THE YEAR 2000



Source: Evian, 2000

4.2.1.2 Policy on HIV/AIDS

The first official written VWSA company policy on HIV/AIDS was in the process of being written at the time of this research. A draft of the proposed document was provided for examination.

The principles of the draft policy were equity, confidentiality and the acceptance of rights and responsibilities by both employer and employee.

4.2.1.3 Absenteeism

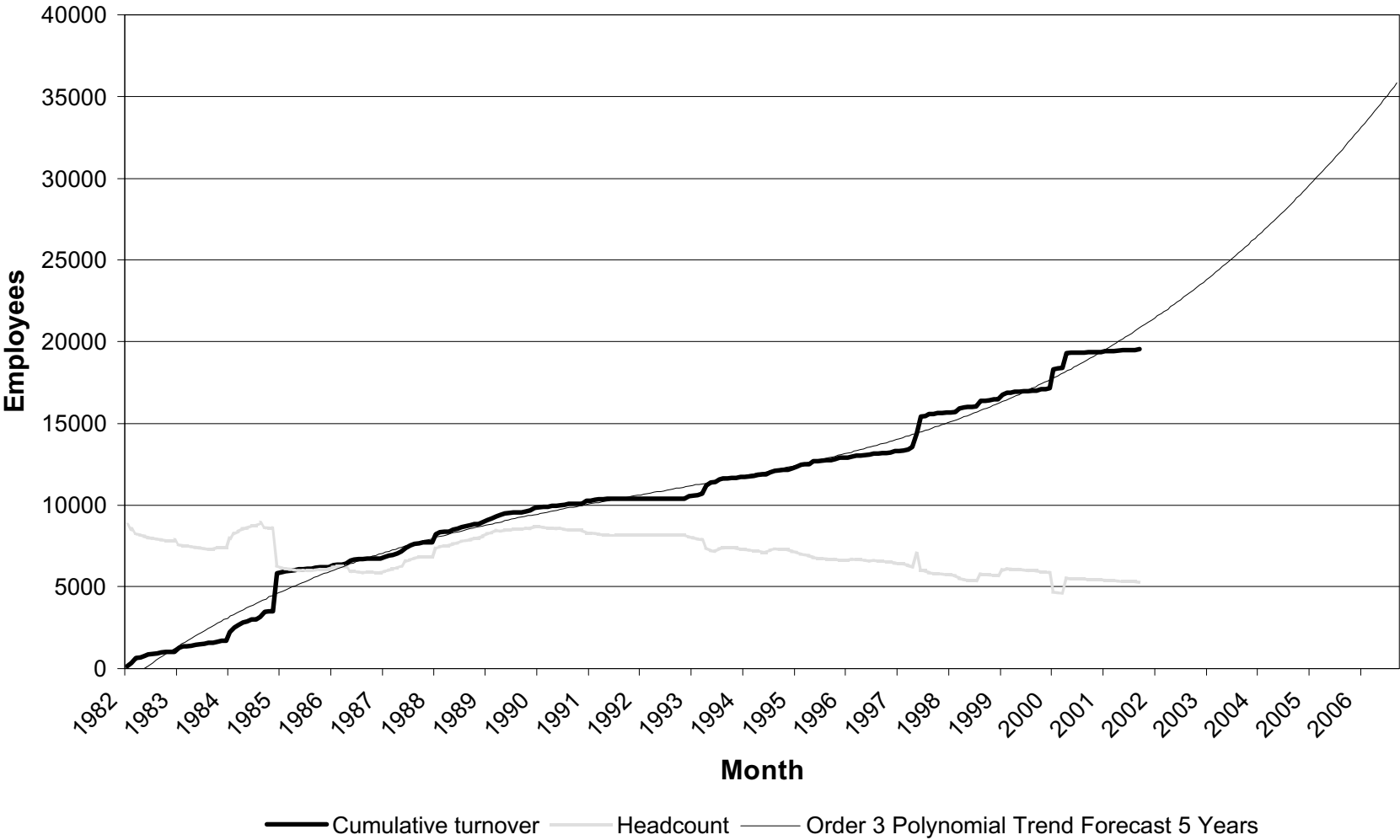
Absenteeism data was provided after the interview. Detailed records were only given for the year to June 2001 and were found to provide insufficient data for trend analysis.

The trend in absence for sickness is shown in Figure 4.8.

4.2.1.4 Employee Turnover

Employee turnover was extrapolated from data on total headcount (Figure 4.4). The best-fit trend was a third order polynomial. This trend forecast an accelerating growth in turnover.

FIGURE 4.4: CUMULATIVE EMPLOYEE TURNOVER FOR VWSA FORECAST 5 YEARS



Source: Data Supplied by VWSA

4.2.2 FINDINGS FROM AN INTERVIEW WITH AN OFFICER OF THE COMPANY MEDICAL CENTRE

4.2.2.1 Health Measurements and Trends

(1) Measurements

Basic statistical records of the number of treatments given were on record at the VWSA Medical Centre. The majority of such treatments were simple in nature, including visits for headache tablets, cold and flu medicines etc.

Details of examinations (by the company doctor, one of the nurses or other medical professionals) were kept in the files of the patient. Only a basic, anonymous record of these special examinations was kept separately, presumably for operational reasons.

The basic statistical records contained data on the date of treatment, the employment status of the patient (salaried, waged, contracted), and the category of treatment (treatments, special examinations, pre-placement examinations, injuries on duty and disabling injuries). Specific data regarding what was diagnosed was not kept. Only sexually transmitted diseases (STD's) were noted separately and no sub classification (specific STD) was recorded.

There was no system for the recording and trend analysis of specific diagnoses.

A computer system capable of managing the basic statistical data as well as diagnosis data was reportedly due to be introduced (the researcher did not establish the planned date).

(2) Trends

- Total Number of Treatments by the Centre

The records of the total number of treatments meted by the centre each month from January 1982 to October 2001 were tabulated and arranged into a simple graph. A yearly pattern was evident which could not be associated with sickness. A clear overall upward trend in the number of treatments per 1000 workers was also evident. This overall trend clearly showed that the susceptibility of the workers to sicknesses was increasing (Figure 4.5).

- STD's

The trend in the available data was downward (Figure 4.6). This trend should be viewed with extreme caution due to the limited data on which it is established.

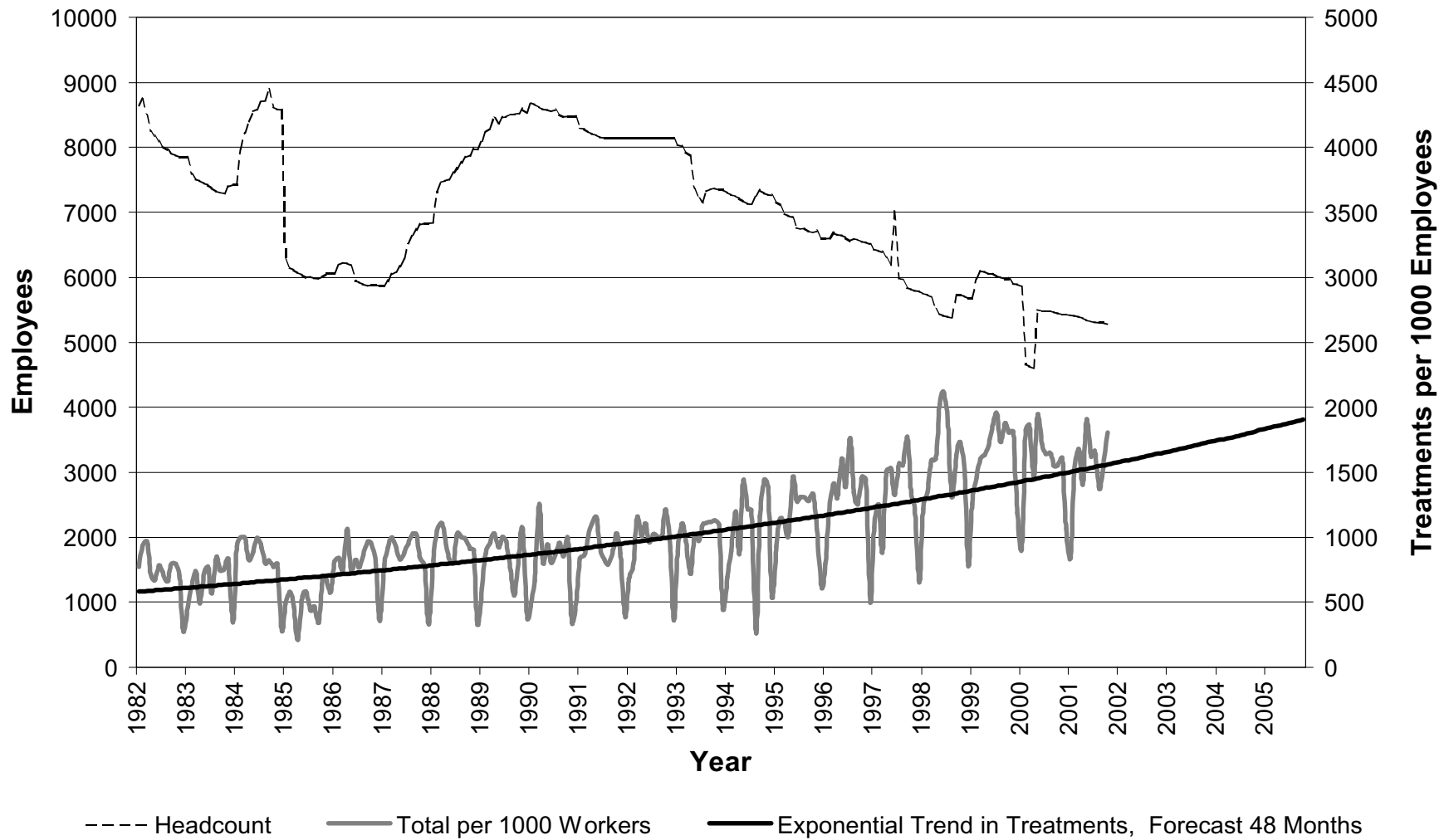
- Deaths

Data was only available for the years 1997 to 2000 inclusive. A linear trend was drawn and this suggested that the death rate was increasing (Figure 4.7). This suggestion was however not reliable because there was too little data on which to base the trend.

- Sick Leave

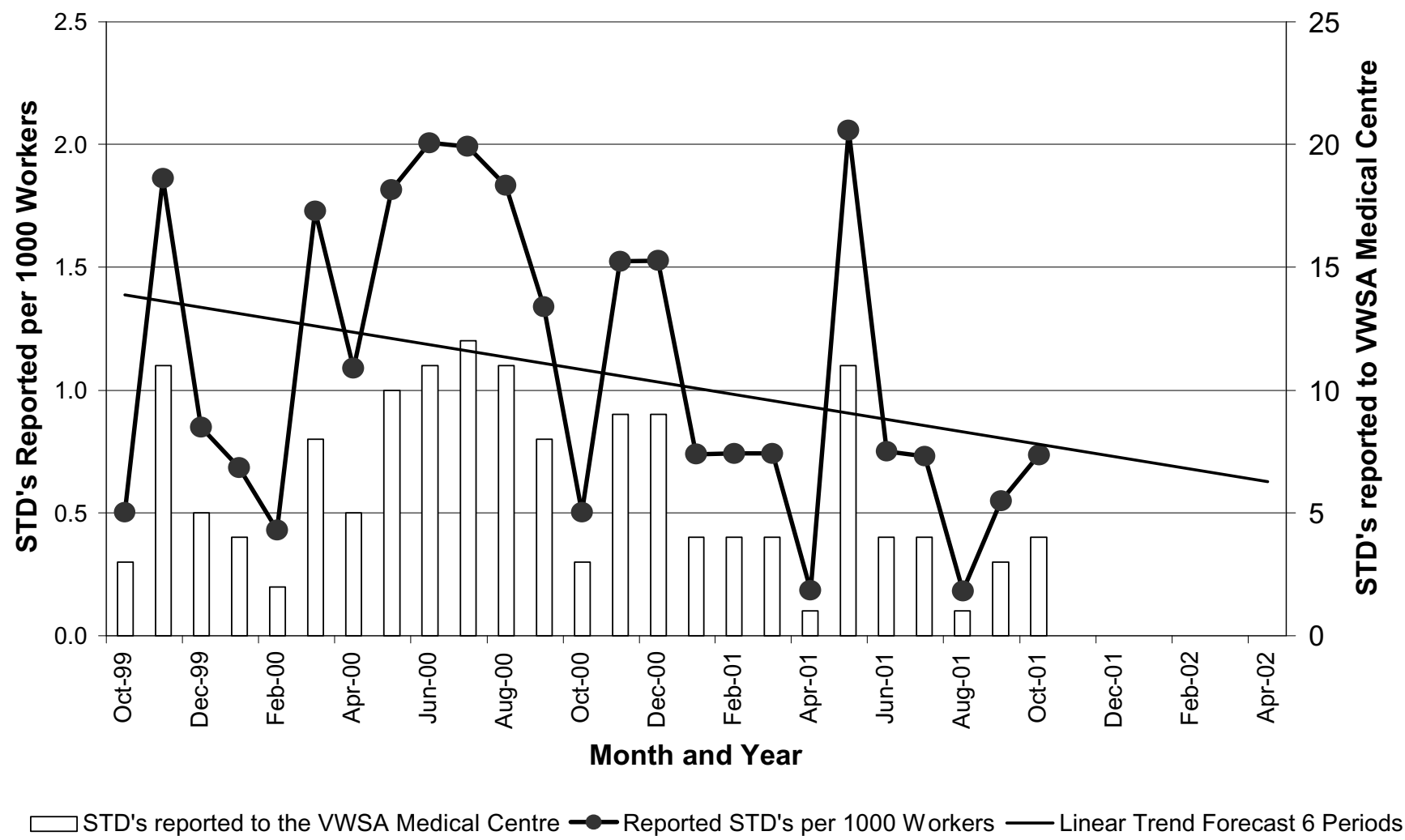
The linear trend in sick leave was downward for the period defined by the years 1990 to 2001 inclusive. The last two years of available data were both increasing over previous years data. This showed that the downward tendency could be reversing. A third order polynomial trend fitting such a reverse showed a large upswing in sick absence for forecasted periods (Figure 4.8).

FIGURE 4.5: TREND OF TREATMENTS METED BY THE VWSA MEDICAL CENTRE



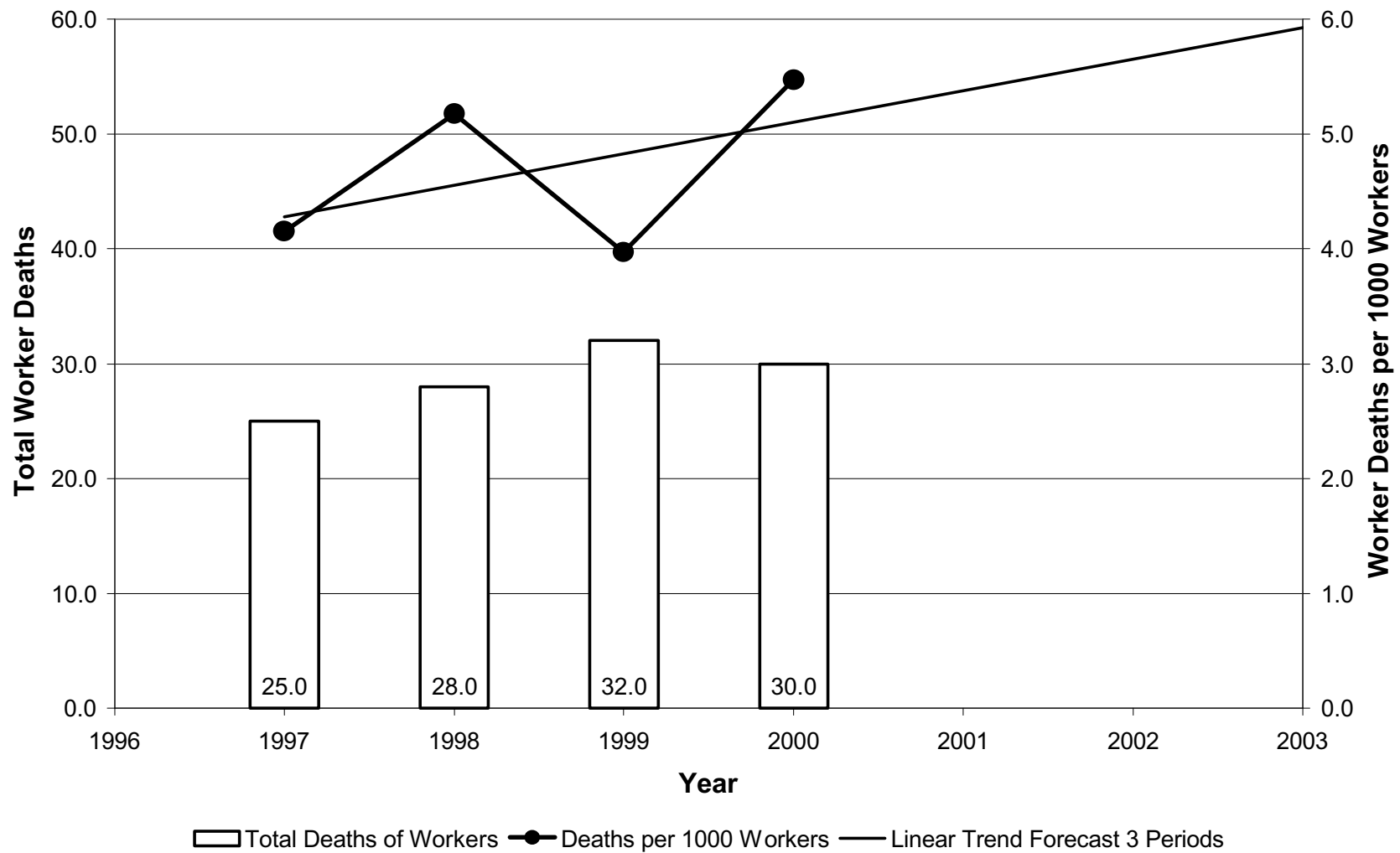
Source: Data Supplied by VWSA

FIGURE 4.6: TREND IN NUMBER OF STD TREATMENTS BY THE VWSA MEDICAL CENTRE



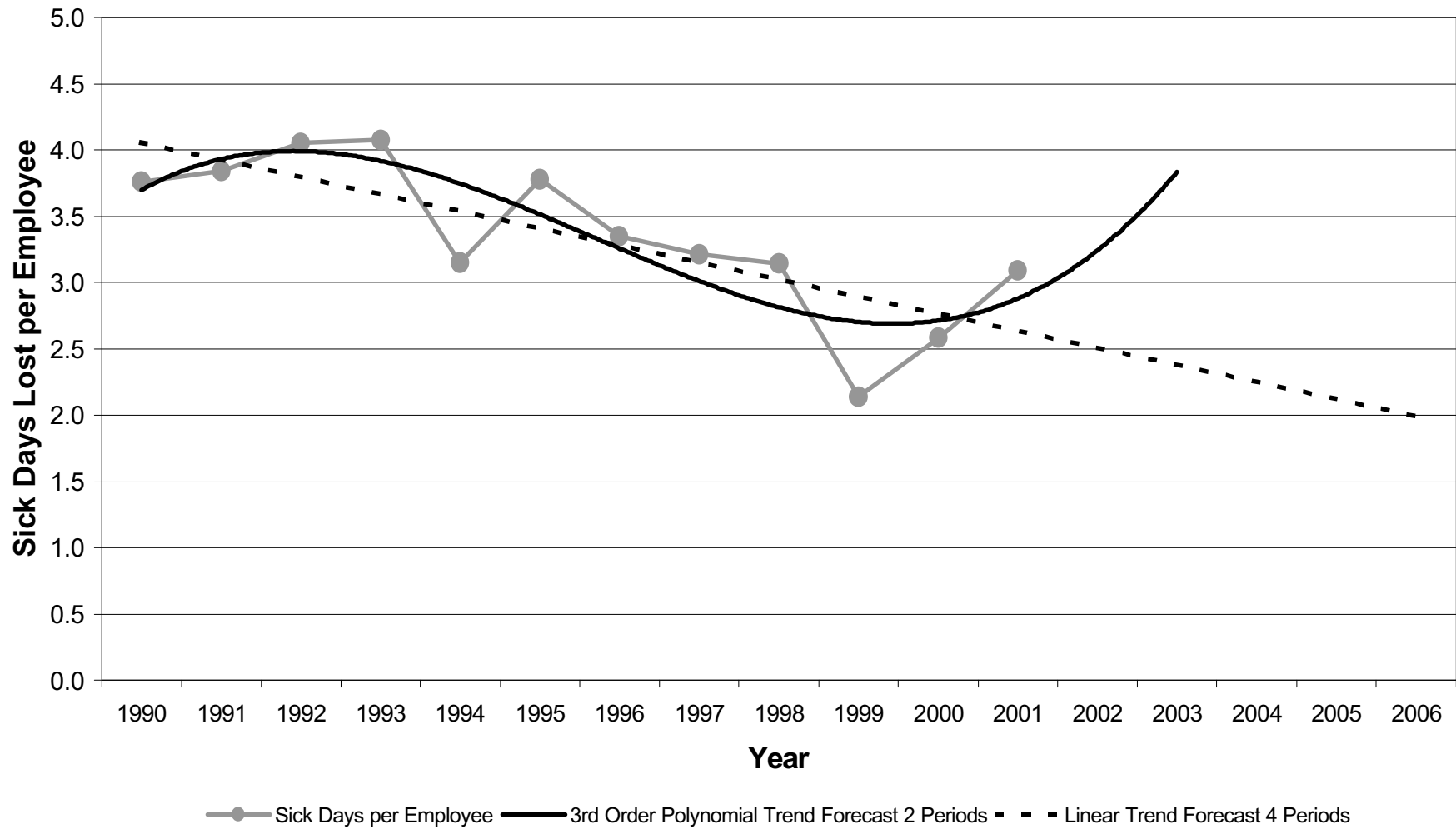
Source: Data Supplied by VWSA

FIGURE 4.7: TREND IN EMPLOYEE DEATHS AT VWSA



Source: Data Supplied by VWSA

FIGURE 4.8: TREND IN EMPLOYEE SICK LEAVE AT VWSA



Source: Data Supplied by VWSA

4.2.2.2 HIV/AIDS Management

From its outset up to the time of this research, the approach to management of HIV/AIDS at VWSA established itself incrementally with no remarkable waypoints. At the time of the interview, no remarkable directive for management of the epidemic had been implemented. The pattern of management of the epidemic was however clearly set to accelerate in the near future. The pace change as forecast for VWSA's management of the epidemic did not significantly lead or lag the trend in the development of the epidemic. The centre accordingly was not seen as having been either negligent or diligent in its duty to manage the epidemic in the workforce.

(1) Policy

The substance of its actions defined the policy of the medical centre. No written version of the working policy existed. The defining actions included:

- (a) Not examining employees for HIV as part of the pre-placement medical check-up.
- (b) Facilitating HIV testing on a voluntary basis (with full pre-test and post-test counselling)
- (c) Not advocating informed voluntary testing generally amongst the workforce.
- (d) Absorbing the costs of only the first two HIV tests per employee (limitless testing was seen as condoning reckless behaviour). It was planned to reduce the absorption to only one test per employee, for the same reason. The financial considerations were reportedly not the cause for this proposed change.
- (e) Counselling employees with repeated STD treatments about the availability and value of voluntary testing at the centre.

- (f) Strict HIV status confidentiality (even amongst members of staff of the medical centre where the patient did not give explicit permission for communication). The sole officer in charge of all medical information was the company appointed medical practitioner.
- (g) Assistance with infection management for HIV-positive employees. This is offered to all employees known to be carriers of HIV.
- (h) Management of the population of infected individuals is not coordinated, because of the difficulty in achieving coordination without compromising the confidentiality policy.

(2) Initiatives

The medical centre, in response to the epidemic, had taken no major initiatives by the time of this research. The company had, however, recently identified HIV/AIDS as a significant risk. The company was accordingly preparing for its first major initiative to manage the epidemic in the company workforce. This major initiative coincided with the retirement of the companies appointed medical practitioner and the debut to VWSA of a new doctor. The new doctor had accepted the role of leadership of the upcoming initiative while still acting *in locum*. The new doctor's agreement to head the upcoming initiative and his work on that initiative prior to his permanent appointment, suggested that a high level of commitment would be forthcoming from his leadership.

(a) Initiatives Already Taken or in Place

- Availability of free condoms.

Approximately 1000 condoms were being distributed weekly to employees.

Employees collected these voluntarily from the medical centre.

- Counselling

On site counselling was available. In this respect the company had in its employ a full time social worker, doctor and a number of nurses, all of who were able to provide counselling.

- Testing

HIV testing was conducted using an external pathology service. The company used the enzyme-linked immunosorbent assay (ELISA) test, since this test was seen as a good compromise in terms of accuracy and cost. The complexities of testing are significant and so they are briefly explained in Attachment 4. Testing was conducted on a voluntary basis only. Strict protocol was observed during testing, beginning with the patient signing a document of informed consent. The process then entailed counselling before the test (in order to establish *inter alia* the reasons for the request), the test itself, and finally post test counselling and assistance if necessary. Patients were allowed to stipulate which member of staff in the medical centre would present them with their test results, which was meant to increase the patient's confidence in confidentiality protocols. In order to prevent individuals from continuing to engage in risky behaviours and then seeking safety in early testing, the number of free tests was curtailed at two per employee. Thereafter further tests would still be facilitated on request, but would be for the employees account.

Testing to monitor viral load and CD4 cell count levels (refer to Attachment 2) was facilitated by the centre, but the costs were for the account of the patient and/or the patient's medical insurance. In this respect the prices VWSA had negotiated for certain tests was disclosed. An ELISA test cost approximately R97.70. A viral load test cost approximately R814.00 and a CD4 cell count cost approximately R198.00.

- Education and Training

The education and training program was established in 1997 and had been in operation for four years at the time of research.

A voluntary life skills program, which included HIV/AIDS training, was available and 380 employees had attended it.

A training program to create peer educators was also available. The program had produced 18 peer educators but sadly no organised peer education program had been initiated to deploy these trained educators effectively.

HIV/AIDS training was incorporated into the training for company health and safety representatives. At the time of the research 65 people had been through this program.

HIV/AIDS training was offered to shop stewards of the workers unions. At the time of the research 16 shop stewards had been through this program.

Posters and pamphlets were distributed throughout the plant. Details such as numbers of posters and pamphlets, their location and the regularity with which they were updated was not disclosed.

A number of in-plant industrial theatre productions were sponsored during the years of 1997 and 1998 in a bid to promote knowledge of the epidemic. Details of the exact quantity, quality and marketing of these were not available.

(b) Initiatives Planned

During September of 2001, during the course of this research, VWSA signed a proposed partnership agreement with the German Society for Technical Co-operation (GTZ) to work together to develop and implement an appropriate HIV/AIDS action plan for VWSA. The motivations for this agreement were multiple, including but not being limited to the impact analysis of VWSA that was presented to the top management during May 2001 by Dr Evian.

The details of the plan were not available at the time that this paper was written as they were not yet completely established. GTZ (GmbH) is an acronym for the German name "*Deutsche Gesellschaft für Technische Zusammenarbeit (Gesellschaft mit beschränkter Haftung)*" meaning "German Society for Technical Co-operation (Limited)".

The GTZ was established in the year 1975 with the primary goal of improving the living and working conditions of people in the partner countries and sustaining the natural bases for life.

While the terms of the VWSA/GTZ contract were not subject to disclosure it was revealed that the agreement would also include a financial contribution from the GTZ that would be a

percentage of the contribution of VWSA. The implicit message given by this financial assistance is encouraging.

The areas to be advised on by the GTZ would include, *inter alia*, the following.

- Policy development.
- Risk assessment.
- Cost benefit analysis of employee benefits.
- Identification and planning of preventative and care based interventions.
- Awareness campaigns aimed at changing behaviour.

4.2.3 FINDINGS FROM AN INTERVIEW WITH AN OFFICER OF THE EMPLOYEE BENEFITS DEPARTMENT

It was noted that VWSA did not study monthly and yearly medical aid figures to determine trends and causes of an abnormal nature. This was because the management of these benefits was principally a financial task involving the optimising of benefits and costs. This approach resulted in changes of such a randomised nature (such as benefits offered or insurers) that extraction of trends was not seen to be profitable. The same was true of the employee life insurance and retirement benefits. The researcher was advised to seek this information from the insurers concerned.

Time constraints prevented the researcher from conducting these recommended interviews.

4.3 EMPLOYEE SURVEY

4.3.1 CHARACTERISTICS OF THE ACQUIRED DATA

4.3.1.1 Response Rate

A total of 111 forms were returned. Since 500 forms were handed out and it was estimated that approximately 100 copies of the portable document format of the survey were printed, the response rate was approximately 1 per 5.4 circulated forms. The number of downloads from the intranet system could not be known thus the actual response rate was estimated to be between 17% and 20%.

The cause or causes for this low response rate were not identified. Possible causes include:

- a lack of concern for the topic of the survey
- an aversion to the nature of questioning
- an aversion to the means of questioning
- misunderstanding of the anonymity of the survey
- difficulty reading the survey
- aversion to the effort required to participate in the survey

Personal enquiries suggested that the lack of concern for the topic was likely to be the primary cause of the low response rate. Future survey response rates could be higher as the epidemic becomes more evident to the VWSA employee population group. Research into the motivations behind the response level is a topic for possible future research.

4.3.1.2 Bias

The extent to which the data accurately represented the total employee population was biased in a number of ways. Wherever possible the bias was reduced by establishing a calibration factor (CF) to factor the demographics of the survey to known demographics of the workforce. This was done in order to decrease the real CI of the results, thus enhancing the accuracy of the predictions made for the total workforce.

The reader drawing independent conclusions from the raw data of the survey must remember to take all of these bias factors into account in order to not be misled.

(1) Sample size

The desired number of 359 respondents (paragraph 3.3.2.3(1)) was not achieved. The achieved number of respondents was 111. With this number of respondents, the survey results had a 95% level of confidence with an average CI of 10% (Calculated using an online facility provided by *Creative Research Systems*). For example, a calculation of 50% applicable to the respondent group would represent a prediction of between 45% and 55% for the total VWSA workforce.

The skipping of questions by individual respondents resulted in each question in the survey having a unique CI. These were calculated. The lowest CI was 9.2% and the highest was 15.8%. The average CI was 9.7% and the modal CI was 9.3%.

(2) Ethnicity Bias

Data collated during June 2000 (Evian, 2000: 5) showed an ethnicity profile not reflected in the survey sample. Since the 15-month period between the studies was expected to be insufficient to have allowed a natural demographic profile change, the profile differences were seen as a potential bias. This difference was not expected to be statistical significant, but the CF's were calculated for possible use in analysis of the survey data where the ethnic profile was expected to be significant (Table 4.1).

The bias was low for the black employee group (5% over representation) but medium for the white (10.6% over representation) and remaining (13.2% under representation) groups.

(3) Gender Bias

The Evian study gender profile was approximately equal to that of the survey data. For possible use where minor bias was required, CF's were established (Table 4.1).

The bias was low as males were 4.3% under represented and females 3.4% over represented.

(4) Age Bias

In order to compare the age profile of the Evian and research survey populations an addition of one year was made to the Evian age ranges. This year represented the time between the Evian and research reports. Reduction of the age ranges to three groups yielded accurately comparable age profiles in three categories. CF's were established (Table 4.1).

(5) Average Bias

The demographic, gender and age results of the survey were used as to calibrate the majority of the data since the actual values were known for June 2000. Using the mathematical correlation function shown below, a CF was established which was used for the remaining data from the survey. The correlation function used was obtained from the *Microsoft Excel* spreadsheet program. This yielded a correlation factor or 0.9315, which was used as the calibration factor for the rest of the data. The equation is as follows:

$$\rho_{x,y} = \frac{Cov(X,Y)}{\sigma_x \cdot \sigma_y}$$

where:

$$-1 \leq \rho_{xy} \leq 1$$

and:

$$Cov(X,Y) = \frac{1}{n} \sum_{i=1}^n (x_i - \mu_x)(y_i - \mu_y)$$

TABLE 4.1: EVIAN AND SURVEY DEMOGRAPHICS WITH CALIBRATION FACTORS

Criteria	Evian		Survey		CF
	Count	%	Count	%	
Total Number of Employees	5485	100.0%	111	2.0%	
Gender					
Male Employees	4982	90.8%	96	86.5%	1.05
Female Employees	503	9.2%	14	12.6%	0.73
Unknown	0	0.0%	1	0.9%	
Ethnicity					
Black Employees	2036	37.1%	40	36.0%	1.03
White Employees	1444	26.3%	41	36.9%	0.71
Asian Employees	49	0.9%			
Coloured Employees	1926	35.1%			
Other Ethnicities	28	0.5%			
Unknown	0	0.0%	4	3.6%	0.00
Sum: Asian, coloured, other	2003	36.5%	26	23.4%	1.56
Age					
15-25 Years			25	22.5%	0.77%
26-30 Years			22	19.8%	0.77%
<29 Years	1774	32.3%			
30-39 Years	1917	34.9%			
31-40			28	25.2%	1.40%
41 + Years			36	32.4%	0.99%
40-49 Years	1198	21.8%			
50-59 Years	555	10.1%			
60 + Years	41	0.7%			
Alternate Age Categories					
<30 Years	1774	32.6%	47	42.3%	0.77%
31-40 Years	1917	35.2%	28	25.2%	1.40%
41+ Years	1753	32.2%	36	32.4%	0.99%
All Remaining Data					93.15%

Source: Survey, 2001 and Evian, 2000: 5

4.3.2 SURVEY FINDINGS

The survey data was tallied. The results are shown in Attachment 5 – Table 1 (Survey questions were paraphrased to facilitate typesetting). For each possible answer the number of responses and also the relative percentage of all the meaningful answers for that question are shown. Skipped responses were excluded from the percentage calculations to prevent bias.

The CI was calculated separately for each question, using the online NCS Pearson research tool.

For the reader who wishes to establish observations in terms of numbers of employees, the formula to be used is as follows:

$$(Survey\ prediction \pm CI) \times workforce\ size \times CF \equiv answer\ range$$

Since the calculation provides a range approximation logically impossible areas defined within the probability range can be disregarded. For example a possible number of employees varying between 4800 and 5600 is impossible since it is known that the number of employees totals 5500. The possible range would therefore be 4800 to 5500, and further logical limits could exist.

4.3.2.1 Profile of Respondents

The respondent profile is given in Attachment 5.

4.3.2.2 Profile of the VWSA Workforce

The demographic profile was based on the June 2000 demographics, as documented by Evian (2000: 5). These are not expected to have changed materially during the period between June 2000, when they were known to be accurate, and the month of September 2001 (when the survey data was examined).

Each question asked in the survey was projected onto the workforce of 5500. The projection was calculated in terms of the expected value, the lower confidence limit (LCL) and the upper confidence limit (UCL). Attachment 6 shows each projection numerically and graphically. Data were calibrated prior to the projections to further improve the accuracy of the projections.

(1) Demographic

Approximately 90% (about 5050) of the workforce was male (Figure 4.9).

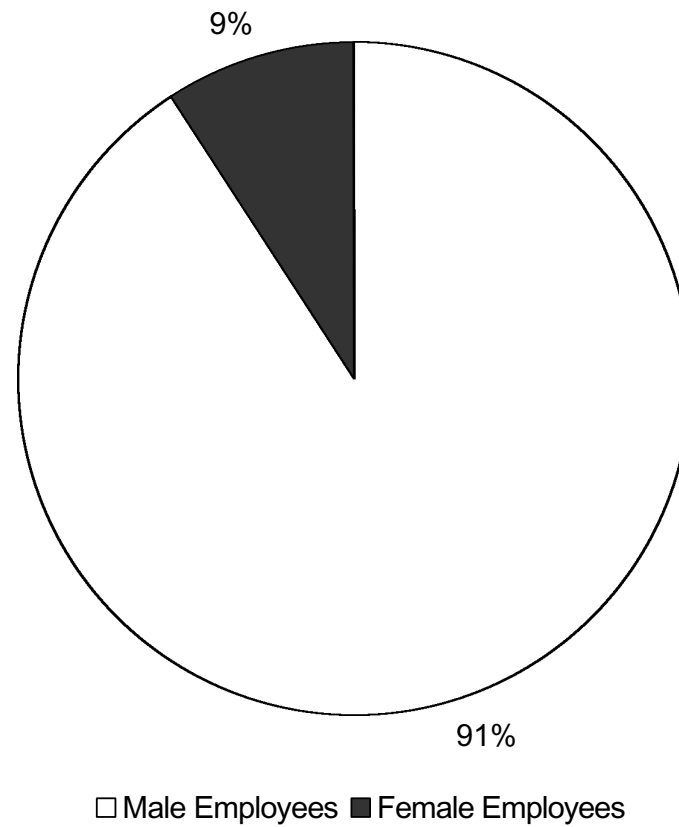
There were three almost equally sized groups of people (Figure 4.10). These groups were black, white and coloured people (the minority groups were counted with the coloured people - the group labelled other is comprised of almost completely of coloured people).

The majority of workers were below 40 years of age, typifying the collective workforce as relatively young (Figure 4.11).

The workers located in areas other than the production lines (± 2057 in offices and ± 653 in other areas) outnumbered those working on the production lines (± 2431) by a small quantity. In effect these two groups were about equal in terms of headcount.

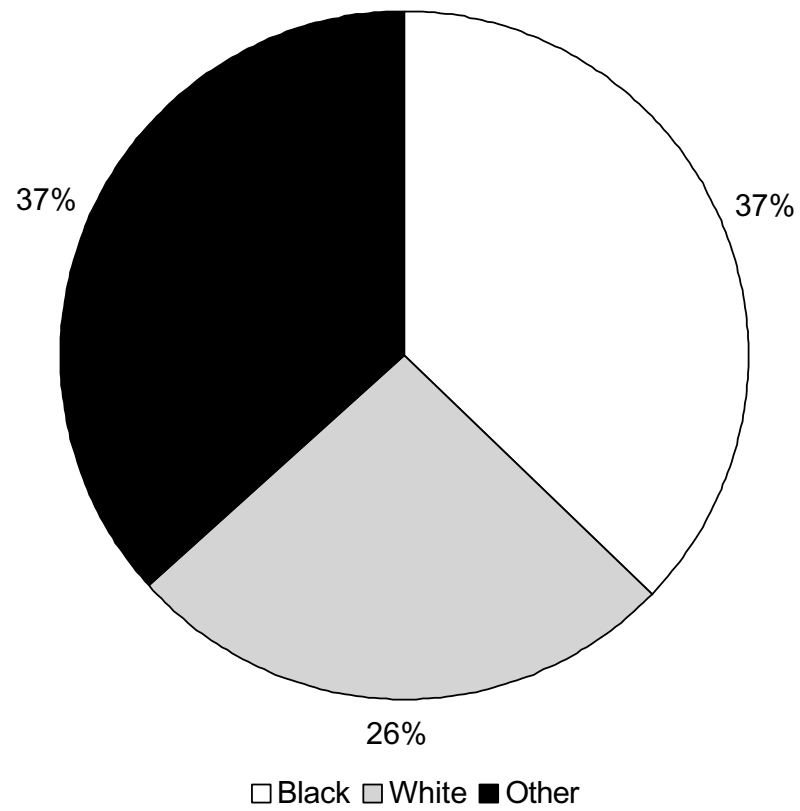
There were approximately 1358 people in leadership positions of some kind in the company. There were approximately 3785 in non-leadership positions. The ratio of followers to leaders was approximately 2.78. Assuming six levels in the company, the average span of control of a leader was calculated at 5.6, approximately six people reporting to each leader.

FIGURE 4.9: WORKFORCE GENDER PROFILE (JUNE 2000)



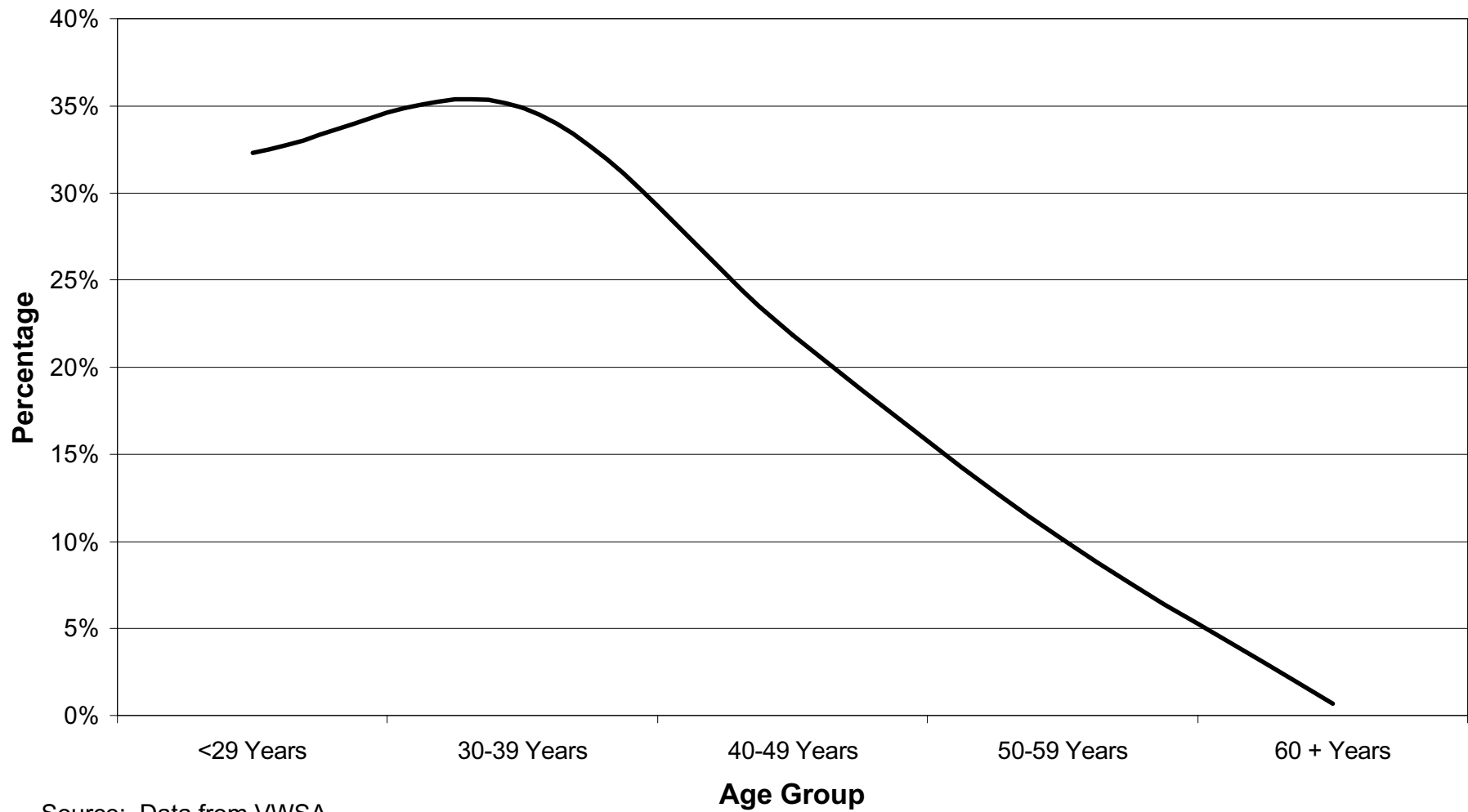
Source: Data from VWSA

FIGURE 4.10: WORKFORCE ETHNIC PROFILE (JUNE 2000)



Source: Data from VWSA

FIGURE 4.11: WORKFORCE AGE PROFILE (JUNE 2000)



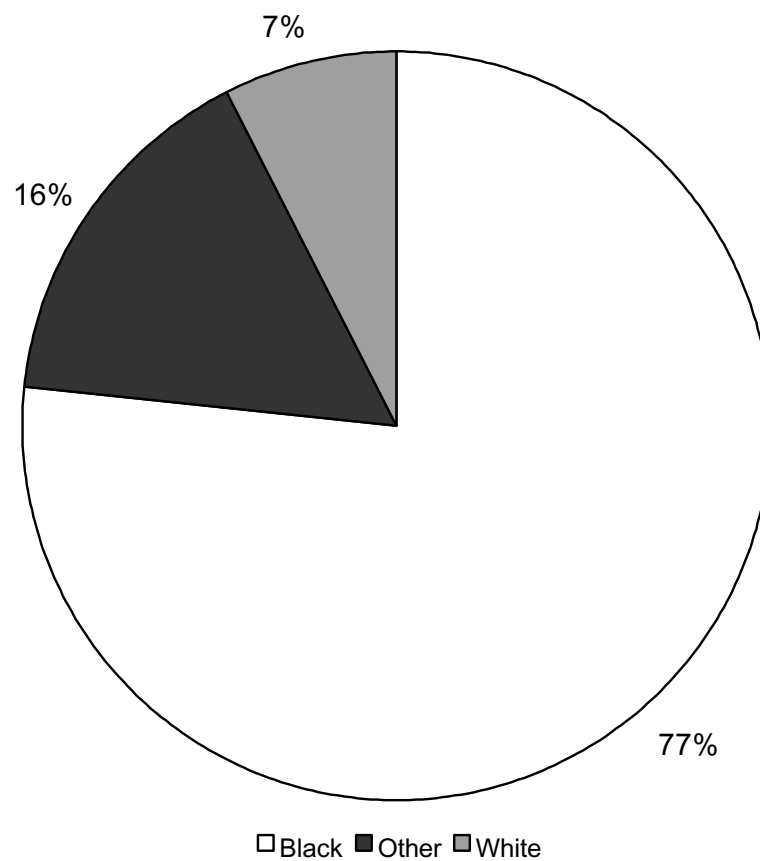
(2) Experience and Exposure to HIV/AIDS

More than a quarter (± 1311) of the workforce knew at least one HIV-positive person. The majority of those who did know someone who was HIV-positive were black people (Figure 4.12). This was disproportionate to the ethnic demographics and suggested that HIV was a greater threat to the black community than to any other ethnicity in the company.

From the two survey disclosures it was estimated that about 98 people at the company were infected. This was far below the figure of 487 predicted by Evian (2000) for the year 2001. Since neither value was a direct measurement but rather a prediction based on a different approach, this difference indicated that Volkswagen of South Africa would need to undertake a serum study to establish the true prevalence in the workforce, if such figures were required.

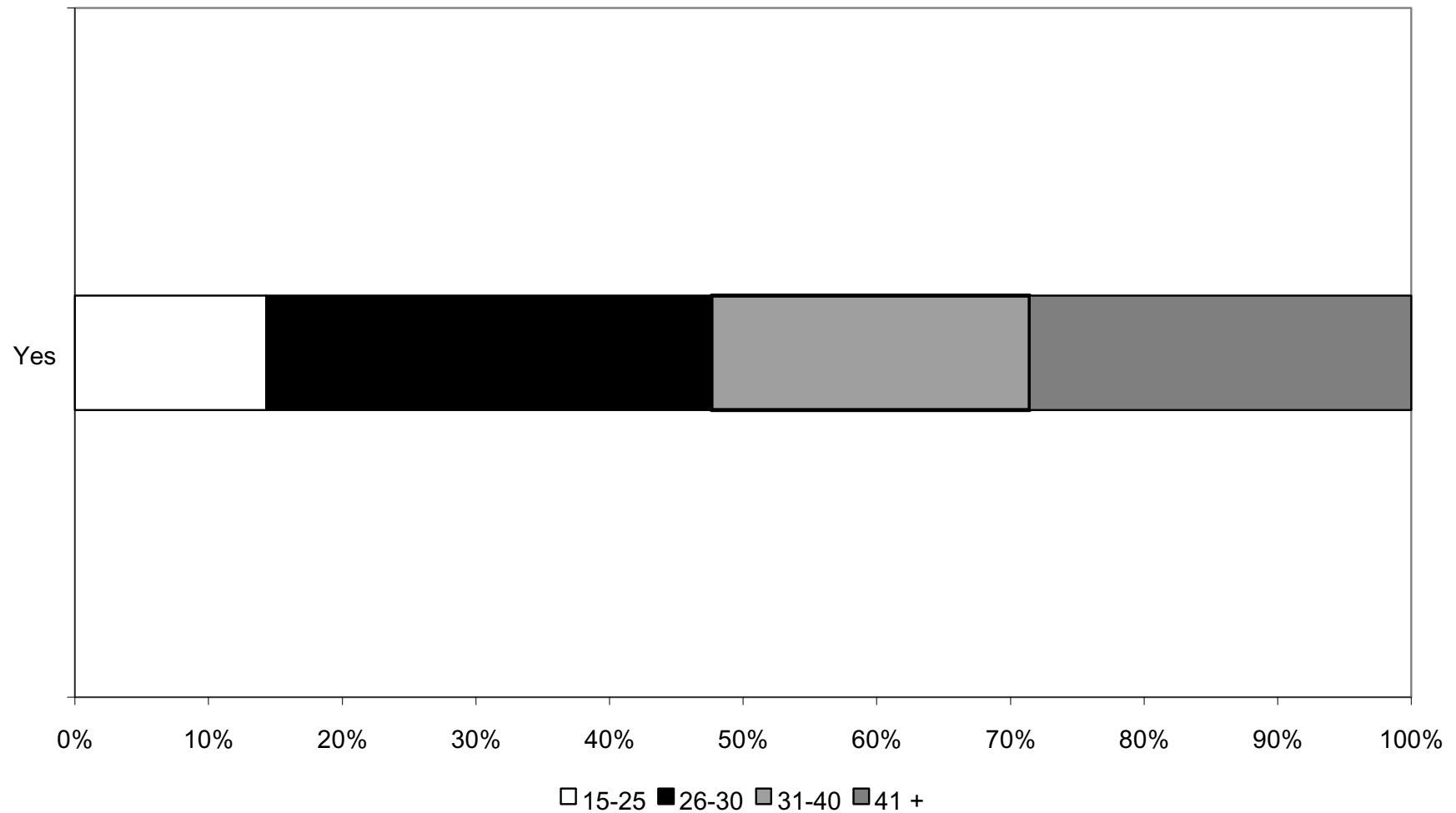
Eight percent (± 427) had lost family members and 16.5% (± 849) had lost one or more friends to the epidemic. Figure 4.13 shows the distribution of these people in terms of their ages. Despite this intimate exposure very few (± 262) were found to be incurring regular monthly expenses directly related to the epidemic.

FIGURE 4.12: ETHNIC COMPOSITION OF THE GROUP OF ±1311 VWSA WORKERS WHO KNEW AN HIV-POSITIVE PERSON



Source: Survey, 2001

FIGURE 4.13: AGE GROUP COMPOSITION VWSA WORKERS WHO HAD LOST A FRIEND OR RELATIVE TO HIV/AIDS



Source: Survey, 2001

(3) Sexual Health and Attitudes

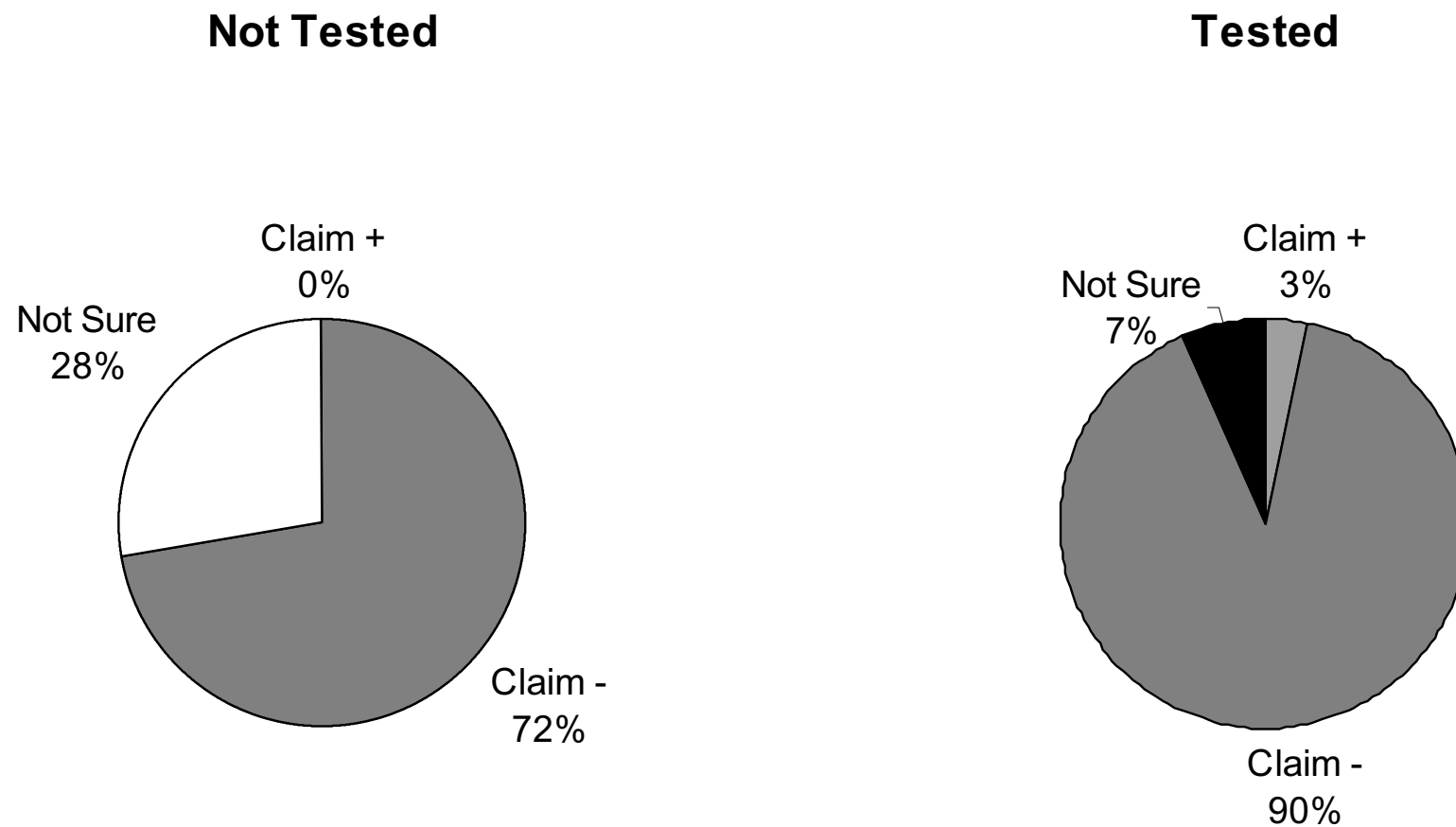
About 1214 people in the company had a STD at some stage in their lives. Approximately 2854 had been tested for HIV infection at some stage and ± 1990 employees had not been vaccinated against TB.

Most of the people who have not been tested for HIV believed that they were not infected with it. The group who had been tested were however less uncertain of their HIV status than the group who had not been tested (Figure 4.14).

A large number of employees (± 1712) said they would not seek assistance from the VWSA medical centre if they feared they had a sexually transmitted disease. Marginally more (± 1826) would not consider VWSA's medical centre for help in the event of a concern about HIV infection.

Approximately 926 of the people at VWSA believed that HIV (and implicitly, AIDS) could be cured. A further group of ± 926 employees was not sure whether it could or could not be cured. Only ± 278 employees believed that HIV did not cause AIDS, although a further group of ± 463 employee was not sure.

FIGURE 4.14: ANALYSIS OF RESPONDENTS TESTED FOR HIV VERSUS THEIR SELF-EXPECTED HIV STATUS



Source: Survey, 2001

Almost all of the employees understood that having multiple sexual partners increased their chances of contracting the HIV. Most (± 3800) workers believed that STD's were associated with increased risk of HIV infection, but about 879 were not sure.

Nearly 1388 employees thought that having sex with an infected partner was the only way a person can contract HIV. In addition, about 370 employees were not sure.

About 473 employees thought that it was unsafe to work or live with someone who is infected with the HIV. A further group of about 473 employees was unsure.

Only about 46 employees did not think that there were many HIV infected people working at VWSA. The remainder were mostly unsure (± 3667) although about 1297 workers believed that there were many such people in the company.

Most employees (± 4335) thought that HIV-positive individuals could still form an active part of society. About 381 employees did not think so and a further ± 427 were not sure.

About 525 people felt it was possible to identify a person who was HIV-positive without the need for a test. Some 669 were unsure on this.

About 612 people either thought that using condoms did not reduce the chance of getting HIV, or were at least unsure.

Close to 1743 people at the company believed that babies born of HIV-positive mothers would always be HIV positive. Another ± 1414 were uncertain.

About 4047 people at the company felt it was not fair to blame people who are HIV-positive for their plight. Around 1095 were either unsure or felt that those people should be blamed.

Approximately 715 people at the company do not know where to go for help if they ever become afraid that they may have contracted HIV. At least 98 had some idea, but remained unsure.

Nearly 2144 people at the company were not aware of the potential damage that a non water-based lubricant can cause to a condom. A further 1347 were unsure.

(4) Opinions about what VWSA should do about HIV/AIDS

The majority of the people (± 4489) felt that the company should make free condoms available to the workers. Around 555 people did not think so, however, and ± 103 were not sure.

The workforce was almost unanimous (± 5040 workers) in saying that the company should teach them about HIV/AIDS. Only ± 103 workers did not feel this was necessary.

About 4376 workers felt that VWSA should help the local community to manage the epidemic. However, a group of about 509 did not think so and ± 257 were not sure.

About 653 of the people in the company felt that those who had HIV should be treated differently. The majority (± 4032) felt that HIV-positive workers should be treated in the same way as other workers. A group of about 453 were not sure. It was not asked how the employees felt that treatment should or should not differ. This would be a valid issue for future research,

The workforce was strongly in favour (± 4690 people) of VWSA offering counselling to sick workers. A group of ± 303 did not condone the idea and ± 149 were unsure.

The majority of workers (± 4741) thought that VWSA should offer voluntary HIV tests to employees. The remaining people were split between being unsure and being against such free testing.

A majority, ± 3769 workers, thought that VWSA should provide medication for HIV-positive employees. Around 663 felt that they should not. Almost 715 were unsure.

The survey group was not taught the details of the concept that is known as home-based care, however the majority of them (± 3497) thought it was a good idea. Almost 946 thought it was not a good idea and about 669 were not sure.

(5) Sexuality Profile

There were approximately 252 people in the workforce who had not previously engaged in sexual intercourse.

About 756 employees had their first sexual intercourse before the age of 16. The majority (± 2875) had this experience between the ages of 16 and 20.

While the majority of workers had only one sexual partner in the 12 months prior to this survey, approximately 1172 had two or more partners in the same period.

The survey indicated that there were approximately 3939 heterosexual men, 1892 heterosexual women, and 231 bisexual people in the workforce (the CI's were high for these questions).

Only about 283 employees had taken money in exchange for sex at some time prior to the survey and ± 334 had paid for sex.

About 4464 people in the workforce have had sex without a condom. The remaining group, had always used a condom, were not yet sexually active or were female and did not categorise themselves as the users of condoms in sex.

Nearly 1676 people in the workforce object to using a condom during sex. About 710 people have used a condom together with a lubricant.

4.4 SUMMARY

Empirical evidence was documented in this chapter. Certain trends associated with the HIV/AIDS epidemic at VWSA were documented (to the extent that data was available). Of these trends the only measured (as opposed to predicted) trend that was clearly worsening was that of visits per employee to the company medical centre. The data for the other trends was however limited thus further research could reveal more.

The findings of a survey of 111 employees were also documented and explained.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

The previous chapters documented the problem, the research design, the academic and the empirical findings of the impact study. In this chapter key conclusions that can be drawn from those previous chapters are summarised. In addition a comprehensive list of recommendations is given.

5.2 CONCLUSIONS

This document cannot be summarised into neat conclusions. It must therefore be read in its entirety in order to put into context the conclusions that are drawn here and also in order to benefit from those implicit conclusions of the paper which have not been re-written here.

5.2.1 POLICY

There should be a clear and explicit company policy in respect of HIV/AIDS. That policy should form the strategic foundation that directs HIV/AIDS programs in the company. VWSA did not, at the time of research, have an explicit policy on this topic. This restricted the degree of co-ordination and support for HIV/AIDS. In turn this impeded the efforts of company officials and departments to manage the impact of the epidemic.

It must be noted (positively) that a VWSA company policy in respect of HIV/AIDS was in the process of being established. It must also be noted (negatively) that the evident but not documented company policy at the time of this research was not focussed and was accordingly relatively ineffective. There is a degree of urgency to the need for a properly planned and negotiated company policy. Such a policy, correctly implemented, could be used to bring together the individual efforts against HIV/AIDS.

5.2.2 LEVEL OF SUPPORT

Since the impact of HIV/AIDS is significant across the company and is expected to grow more significant, the level of support that is required is extremely high. This means both the number of people in leadership positions who visibly support HIV/AIDS management and also the authority levels of those people. This support appeared to exist during the research but certainly still had to manifest itself in an effective program against HIV/AIDS before it would gain credibility.

5.2.3 EMPLOYEE BENEFITS

HIV/AIDS must be seen as a discrete and significant strategic factor in the planning and management of risk benefits. This research did not involve discussions with the individual insurers of benefits to VWSA employees. There was no data at VWSA forecasting the predicted effects of HIV/AIDS on the benefits costs. There was no indication that risk benefit costs were being forecast by VWSA with due recognition of the probably future impact of HIV/AIDS. VWSA therefore did not seem prepared to plan for the financial protection of the company or the employee in respect of the epidemic. Any and all such planning was apparently left to the individual insurers.

5.2.4 INTERVENTIONS PROGRAMS

VWSA had actively intervened in aspects of the HIV/AIDS epidemic in the company but had been unable to form a comprehensive strategic plan to coordinate these interventions.

It is vital that interventions become more focussed, visible and coordinated. The GTZ partnership contract must be exploited along these principles. HIV/AIDS training programs are clearly required within the workforce but have previously been poorly supported by management, as clearly indicated by the low number of trained workers. The availability of condoms, HIV tests and counselling was not effectively communicated through the company. The apparent value of these services to the employees was therefore severely compromised.

5.2.5 WORKFORCE SUSCEPTIBILITY

The workforce was poorly educated in respect of the epidemic. There was a high degree of risky behaviour amongst workers and some instances of intolerance towards people with HIV. The group of black people had greater exposure to HIV/AIDS than did the groups of white or other people, suggesting that interventions might be most effective if concentrated on this group. The low level of understanding of what was and was not dangerous in respect of HIV/AIDS indicates that without immediate and concerted intervention there will be a significant growth in the number of HIV infected workers. As a result of the low level of knowledge about HIV/AIDS and the high degree of risk related behaviours, the author cannot support the mathematical findings of Evian (2000) (see Figure 4.1) who calculated a reducing incidence of HIV for the workforce since 1996.

The workforce was reasonably young (on average) and therefore would have a high level of sexual activity. About 20% of the employees had between two and five sexual partners in the twelve months leading up to the survey. More than 80% of the workforce engage at least occasionally in sex without using condoms. Added to this, over 65% of the workforce are not sure whether there are many HIV positive people working in the company and nearly 17% think that HIV can be cured. The risk of transmission is extremely high. Amongst the workforce, the level of knowledge about all aspects of HIV/AIDS is particularly low.

5.2.6 COSTS

The costs of HIV/AIDS to VWSA are incalculable due to their complex nature. They are self-evidently high in total monetary terms but because they are spread in small amounts across a spectrum of day-to-day and exceptional expenses, it would be necessary to introduce certain new measurements in order to estimate, with some degree of accuracy, the amount of this expense. The findings of the employee survey clearly show that the workforce is not aware of the dangers of certain actions or inactions and accordingly that the epidemic is likely to grow rapidly within the group. This growth will cause significant losses to the company but could possibly be retarded by interventions if these were taken immediately and maintained for the duration of the epidemic.

5.3 RECOMMENDATIONS

The size of the workforce and the magnitude of the impact motivate the recommendation that a dedicated management and treatment unit be established to take care of purely HIV related matters.

The capacity of the existing medical centre will quite probably not be sufficient to maintain suitable levels of care for the number of HIV infected workers. In addition to this limitation, the medical centre lacks the administrative capacity to monitor the growth and development of the epidemic or related problems such as STD's.

5.3.1 SURVEILLANCE AND MEASUREMENT

5.3.1.1 HIV Sero-prevalence

The disparity in predictions from the survey and Evian's (2000) predictions of prevalence show that actual testing is required in order to establish a confident measure of HIV prevalence in the workforce. In order to monitor the effectiveness of the HIV/AIDS interventions, such a survey should be conducted annually and careful trend analysis should be conducted. Random groups should be tested and sputum testing (approximately R75 per test at the time of research) would be sufficiently accurate for statistical purposes. This information would also provide rationale for setting boundaries on expenses for management of the epidemic.

5.3.1.2 Risk Benefits

The growth in risk benefits should be monitored by VWSA in order to facilitate the determination of abnormal fluctuations and in order to forecast trends. In order to do this with the constant changes in insurance policies it is recommended that a base

year be selected and that all future data be calibrated in terms of that base year. Price differentials attributed only to the move from one insurer to another can be calibrated out of the trend in this manner. This surveillance data could prove exceptionally beneficial not only in terms of AIDS costs forecasts, but in the climate of high inflation in South Africa they might also assist in company financial planning by improving forecast accuracy for these costs.

5.3.1.3 Diagnoses at the VWSA Medical Centre

A system by which specific diagnoses, or classes of diagnoses, could be monitored by absolute trend and trend per 1000 employees is clearly required. There is a very real opportunity to identify trends in the workforce objectively if such a system is put in place. The system would need to operate in such a manner that anonymity could be afforded to the individual whilst not losing the knowledge of the sickness or the area of the plant in which it was reported. Further potential benefits of such a system could be computerised early warning of flu-epidemics etc. Medical professionals could further examine the categorisation of diagnoses to determine the likelihood of, inter alia, HIV infections in certain areas of the plant and also specific STDs. This would facilitate a 'rifle' approach to HIV (and other issues) intervention instead of a 'shotgun' approach. This is important in cases where certain employees present a pattern of diagnoses that could indicate that further examination is required.

5.3.2 POLICY

5.3.2.1 Company Policy

The company policy in respect of HIV/AIDS must be expedited. Care must be taken to ensure that the policy presents a fair and sustainable strategic direction and clarity for the company.

The policy of the company in respect of HIV/AIDS should be dynamic to account for the rate of change of the epidemic in scale, medical discovery and risk benefit changes. The emphasis of the policy should not be on documentation but rather on principle and application of those principles to specific situations. For this purpose a policy of explicit principles and limited absolute rules is recommended. To augment this policy a council of interpreters representing the interests of the company, the worker and the medical fraternity would be required to mediate or arbitrate any queries in respect of the policy of principles. They would need to meet on a regular basis for such deliberations. In addition, the policy should be frequently reviewed and the council of interpreters must have a higher level of authority than the written policy.

5.3.2.2 Policy of the VWSA Medical Centre

The fundamental HIV/AIDS policy of the medical centre should be reduced to writing and all members of the department should become well acquainted with it. This is necessary in order to ensure that employees never perceive a double standard in the medical core of the HIV/AIDS program and also to ensure that the medical professionals have a clear idea of how they should treat standard and abnormal incidents.

5.3.3 FUNDING

Ownership of a fund for use only in the management of HIV/AIDS should be established. The funding available must be carefully allotted to the chosen instruments for intervention and measurement (such as medical treatment, surveys, studies, home based care programs etc). Whilst due care for financial matters must be exercised in the normal way, the personal commitment of each owner of an instrument of intervention must be weighed to establish the degree of control to be implemented in respect of the spending of the HIV/AIDS program funds. The HIV/AIDS unit, if established, would be ideal the managing area for this funding.

5.3.4 EDUCATION

5.3.4.1 General Knowledge of HIV/AIDS

The education of employees on aspects of HIV/AIDS is critical and the survey shows that it is urgently required. Since the medical centre at VWSA has the expertise to provide this training, but not the manpower, it is strongly recommended that the education and training element of VWSA form a partnership with the medical centre and conduct the required training under the leadership of the medical professionals.

This training needs to begin with the most basic (which every employee and every new employee must receive) and run through to highly complex concepts (which management and other figures looked to for advice must attend). There is a strong conviction amongst members of the medical profession that the lack of proper understanding of the epidemic is at the foundation of the extent of risky behaviours that actually drives the growth of the epidemic. The survey indicated that the workforce had a particularly low level of knowledge of both simple and complex

matters related to the epidemic. Such training must take place during paid working hours since it is a benefit to VWSA and full attendance is vital.

Although the design of a training program is beyond the scope of this paper, the importance of effective attention to this subject is pivotal to the overall success in managing HIV/AIDS impact at VWSA.

5.3.4.2 Disclosure of Available Assistance

A large percentage of employees were not aware of the fact that VWSA would provide them with free condoms if they required, or were not aware of how to go about obtaining such free condoms. Even fewer employees were aware of the fact that VWSA would provide them with a free HIV test on request. In effect, for most employees these assistances were unknown and therefore could not be considered in their times of need. Clearly active publicising of the services offered by the medical centre, together with their limitations (One free test, must subject to counselling *et cetera*) and some advice as to when the employee should consider using them, would greatly improve their meaningfulness. An agreement in the pre-test counselling could see anonymous results entered into the ongoing surveillance survey recommended earlier. An appropriate calibration factor would need to be established to account for the bias inherent in the group of people that would apply for HIV testing.

5.3.5 ASSISTANCE BY NEUTRALS

The contract signed with the GTZ is an example of such assistance by neutrals. It would be wise to request the assistance and advice of people who have studied the impact of the epidemic for some time in deliberation of whichever policy or

operational problems develop along the path of managing HIV/AIDS. It would be unwise to base decisions solely on the advice of such neutrals however since their experience would be polarised to specific points of view. VWSA must be an active partner in any such assistance program.

5.3.6 OTHER RECOMMENDATIONS

5.3.6.1 Community Outreach

The local community is a provider of labour for VWSA. It would be both humane and sensible to become actively involved in fundamental programs to educate the people in these communities and assist in caring for those afflicted or affected by HIV/AIDS.

5.3.6.2 Co-ordinated management

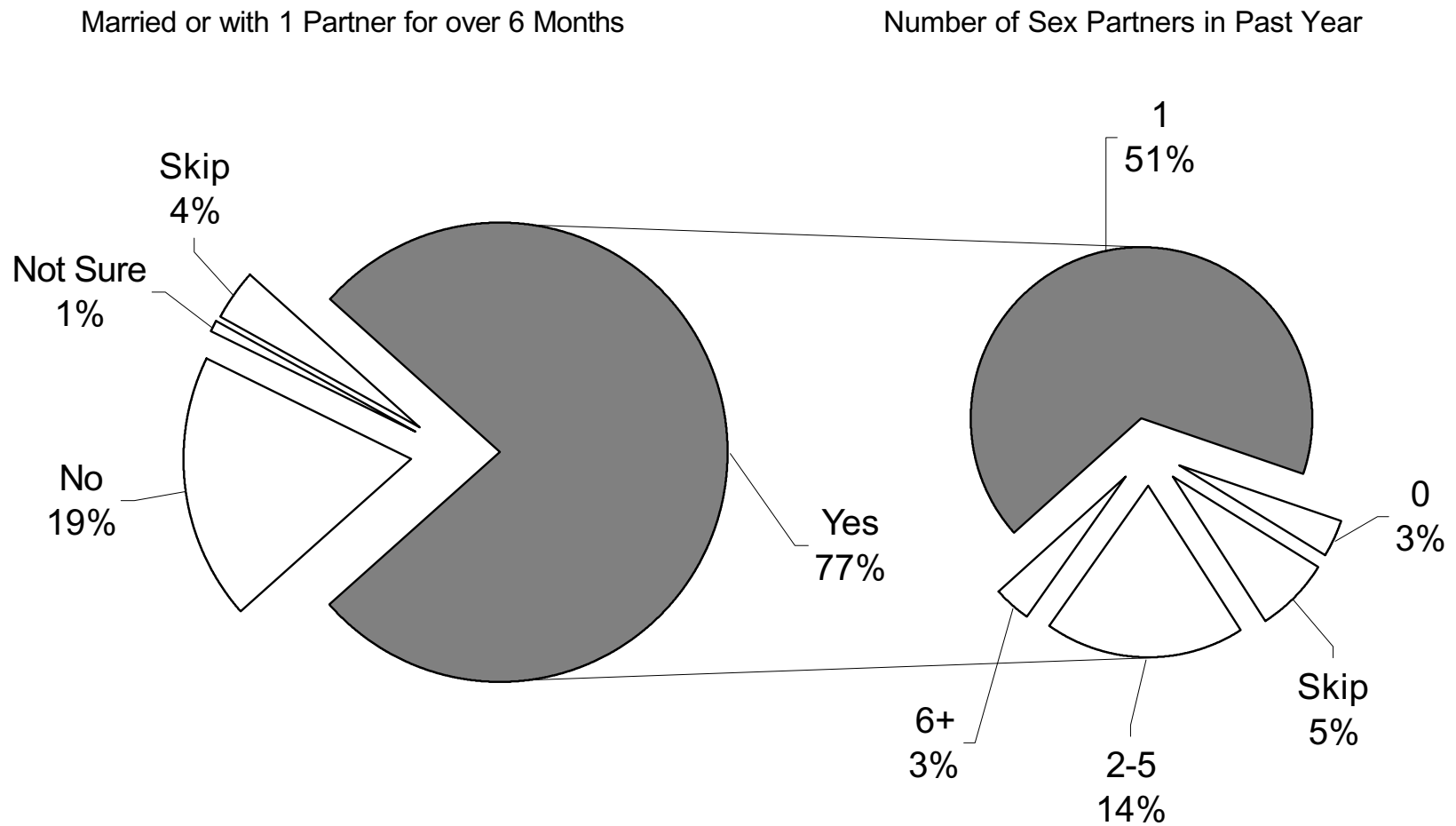
Co-ordinated and active management of the group of VWSA people known to be HIV-positive is possible without compromising the policy of confidentiality. It would require that the single holder of all such knowledge (the company doctor) execute the required analyses to identify risk groups and groups of individuals whose progression along the HIV route was more accelerated than the mean. This analysis could be used to direct special interventions to determine possible causes for the deterioration and recommend actions to slow it.

5.3.6.3 Additional Insights to be taken from the Survey Data

The survey data yielded far more information than this research paper could accommodate. The data is available from the author as a computerised database and in a raw form for *bona fide* research use. It is recommended that VWSA arrange for further analysis of this data by a qualified statistician in order to draw from it as

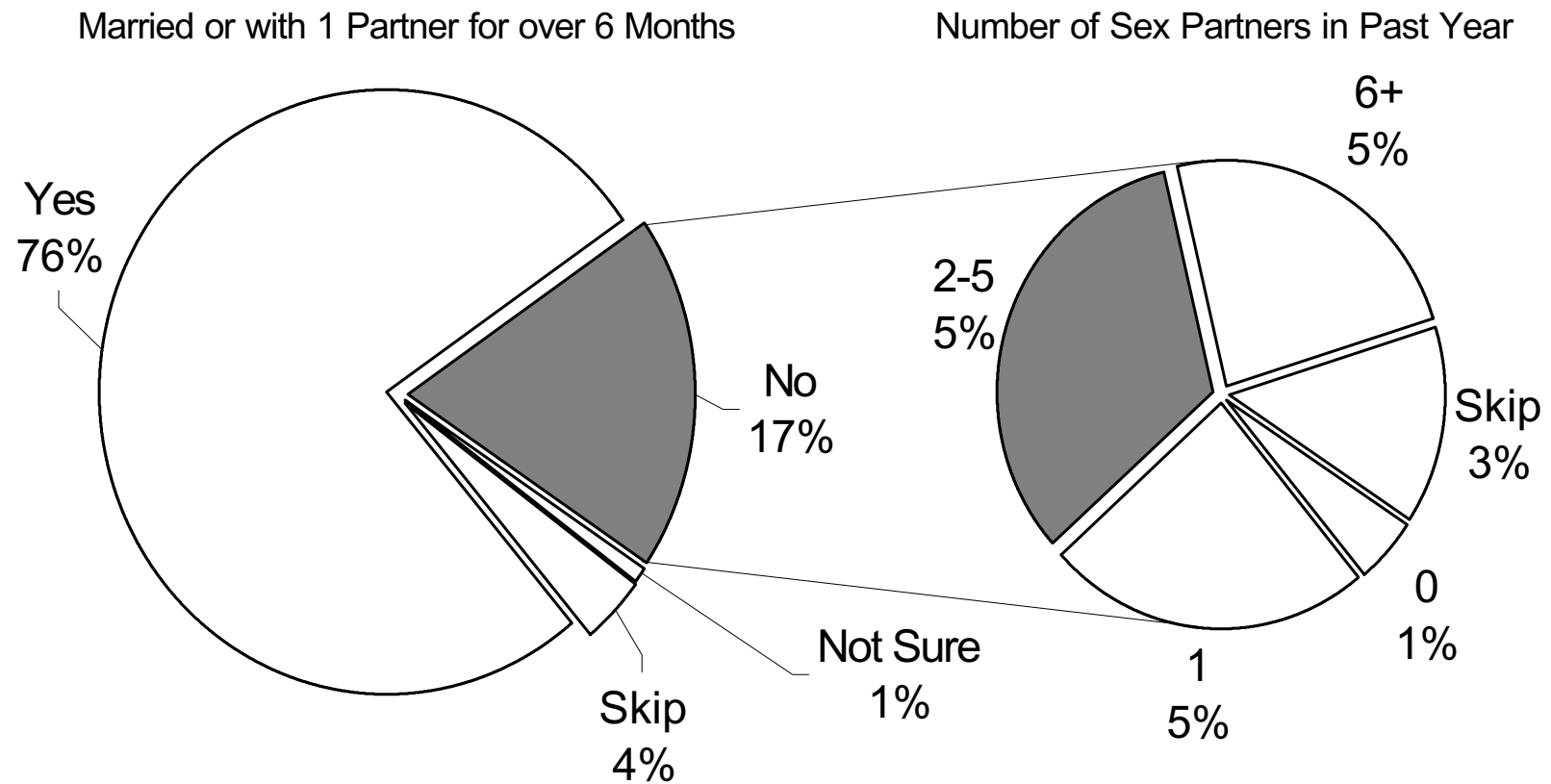
many useful conclusions as possible. This data could be used to identify required areas for intervention, specific weaknesses in the workforces understanding of the epidemic, the consequences of certain behaviours and more. One example of such an insight is that 20% of the people who were married or who have been in a single relationship for more than six months at the time of the survey had more than one sexual partner during the previous year (Figures 5.1 and 5.2).

FIGURE 5.1: EMPLOYEES SEXUAL COMMITMENT VERSUS PARTNERSHIPS (1)



Source: Survey, 2001

FIGURE 5.2: EMPLOYEES SEXUAL COMMITMENT VS PARTNERSHIPS (2)



Source: Survey, 2001

ATTACHMENT 1

SELECTED INFORMATION ABOUT THE HIV

1 *DISCOVERY OF THE HIV*

Between 1979 and 1981 an outbreak of two previously rare diseases was noted in Los Angeles and New York. These diseases were PCP, a type of pneumonia spread by birds, and Kaposi's sarcoma (Sunter and Whiteside, 2000: 1; Brown *et al.*, 1986: 6). They were noted in previously healthy young men.

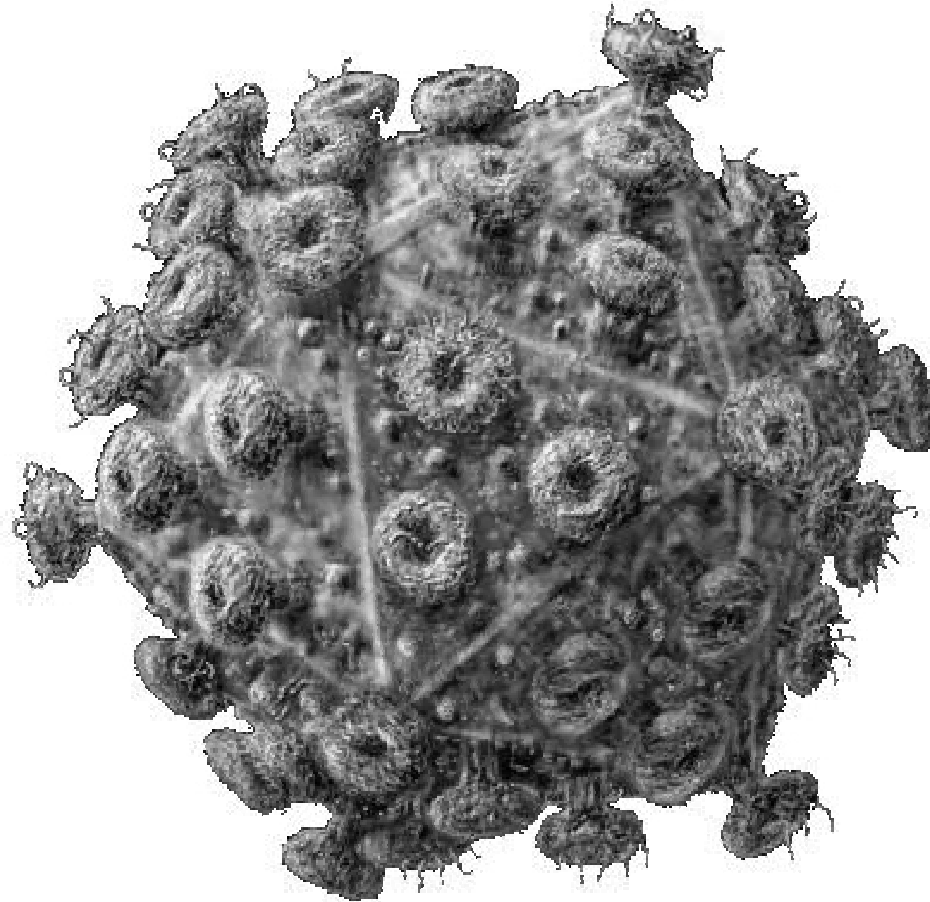
Prior to that outbreak, PCP had been diagnosed rarely and only in patients that were immunocompromised in some way. Similarly, Kaposi's sarcoma had normally been found in Jewish people or those of Mediterranean extraction. In addition to these abnormalities it was established that the diseases were occurring predominantly in two risk groups. In this regard 72% of the patients in the initial outbreak were homosexual and 17% were users of intravenous drugs (Brown *et al.*, 1986: 6).

The risk grouping indicated that a single causative virus, born in semen and blood, might have caused all of the sicknesses. This analysis was helpful in leading to the identification of the causative virus, but it also resulted in a widespread belief that the disease was restricted to or caused by homosexual men and intravenous drug users (Sunter and Whiteside, 2000: 1, Brown *et al.*, 1986: 6).

Using the sciences of epidemiology and immunology, doctors were able to establish that the sicknesses were associated with a decrease in the number of so called “helper lymphocytes” (also known as T4 cells, or CD4 cells) in the blood of the affected patients. While these are not the only cells affected by the HIV, the virus “primarily affects certain cells of the immune system” (Masi, 1990: 2).

A French scientist, Luc Montagnier, identified the virus in 1983. Shortly after this, in 1984, the American scientist Robert Gallo reputedly also discovered the virus (Sunter and Whiteside, 2000: 2). There is some controversy surrounding the claim that Gallo also discovered the virus but for the purpose of this paper that controversy is disregarded. Figure 1 shows a visualisation of the virus.

FIGURE 1 OF ATTACHMENT 1: A VISUALISATION OF A CELL OF THE HIV



Source: Avert, 1999

2 *NAMING OF THE HIV*

Both of the scientists who discovered the virus gave it their own choice of name, since they initially it was thought that two different viruses had been found. It was later found that the two discoveries were the same virus. An international scientific committee gave the virus the designation 'HIV' in 1986.

Prior to the designation HIV the virus was known by several names. Amongst these were 'Human T-Lymphotropic Virus Type III' (HTLV-3, by Robert Gallo), 'Lymphadenopathy Associated Virus' (LAV, by Luc Montagnier), 'Acquired Immunodeficiency Syndrome Retro Virus' (ARV, source unknown) and 'Gay Related Immune Deficiency Syndrome' (GRIDS, source unknown) (Masi, 1990: 2; Barnett and Blaikie, 1992: 1).

3 *CLASSIFICATION OF THE HIV*

HIV is part of the family of viruses called lentiviruses. The other viruses from the lentivirus family have been found in many nonhuman primates. These other viruses have been termed simian immunodeficiency viruses (SIV) and are usually specific to a species of origin (Avert, 1999).

The HIV is part of the class of viruses called retroviruses. This is because the HIV has genes comprised of ribonucleic acid (RNA) molecules. As a result of this composition the HIV can only replicate with a living host cell by integrating itself with the host cell deoxyribonucleic acid (DNA).

4 *LIFE CYCLE OF THE HIV*

To cause infection in a person the HIV has to enter the body and attach to T4 cells. The HIV attaches primarily to T4 cells and macrophage cells. Macrophage cells attend to foreign bodies and assist in developing immunity to future attacks from foreign bodies (Sunter and Whiteside, 2000: 7, Brown *et al.*, 1986: 11). The effect of this bifocal infection and the resulting long-term destruction of T4 cells is that the bodily immune system is compromised.

The cycle of replication of the HIV is shown in Figure 2 of this attachment.

Once the HIV has penetrated the wall of a T4 cell (post block binding), the body can no longer destroy it. At this invulnerable stage the RNA inside the HIV is reverse transcribed into viral DNA using an enzyme protein called p51. P51 is also known as reverse transcriptase. This enzyme is part of the nucleus of the HIV cell (See Figure 3 of attachment 1).

The viral DNA enters the nucleus of the host cell and is inserted into the DNA of the host cell using an enzyme called integrase, also known as P32 (See Figure 3 of attachment 1). At this time the host T4 cell has been modified and its DNA has changed into what is called a provirus. The provirus is then replicated by the host cell, which can then release new infectious particles (Sunter and Whiteside, 2000: 7; Brown *et al.*, 1986: 11; Avert, 1999).

In this cyclical manner the T4 cells in the host body are depleted and the body eventually becomes immunodeficient (See Attachment 2). This process takes a considerable period of time and can be slowed or hastened by a variety of factors, including medication and illness. Ultimately the HIV cells begin to outnumber the CD4 cells, and the CD4 cells begin to decline in number (Colvin, 2000).

A HIV cell is substantially smaller than a CD4 cell. A visualisation of the infection at cellular level is shown in figure 4.

The HIV passes from person to person through body fluids such as blood, semen and vaginal secretions (Barnett and Blaikie, 1992: 3). It is classified as a sexually transmitted disease even though a high percentage of infections result from intravenous drug use.

FIGURE 2 OF ATTACHMENT 1: SCHEMATIC OF THE REPLICATION CYCLE OF THE HIV

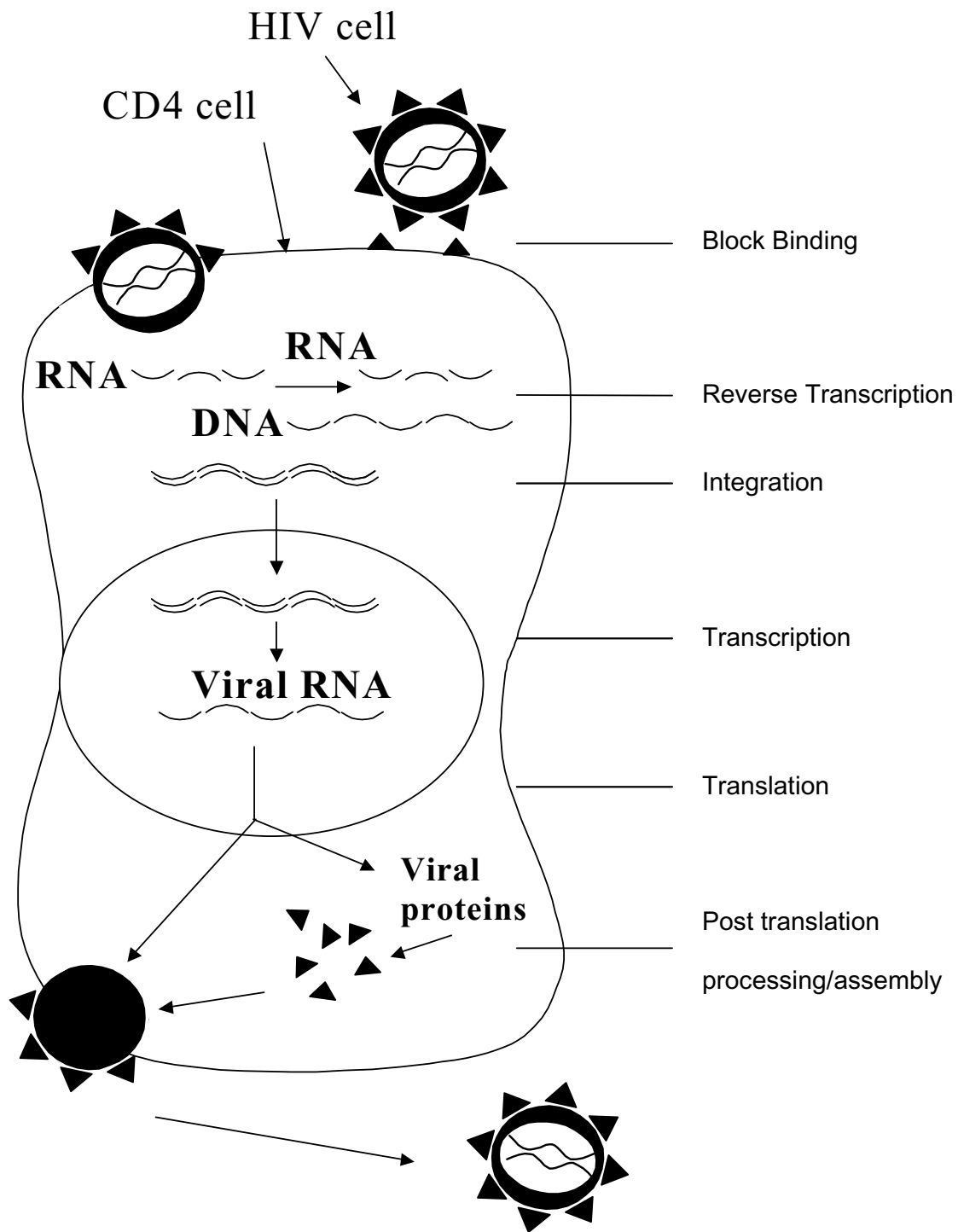
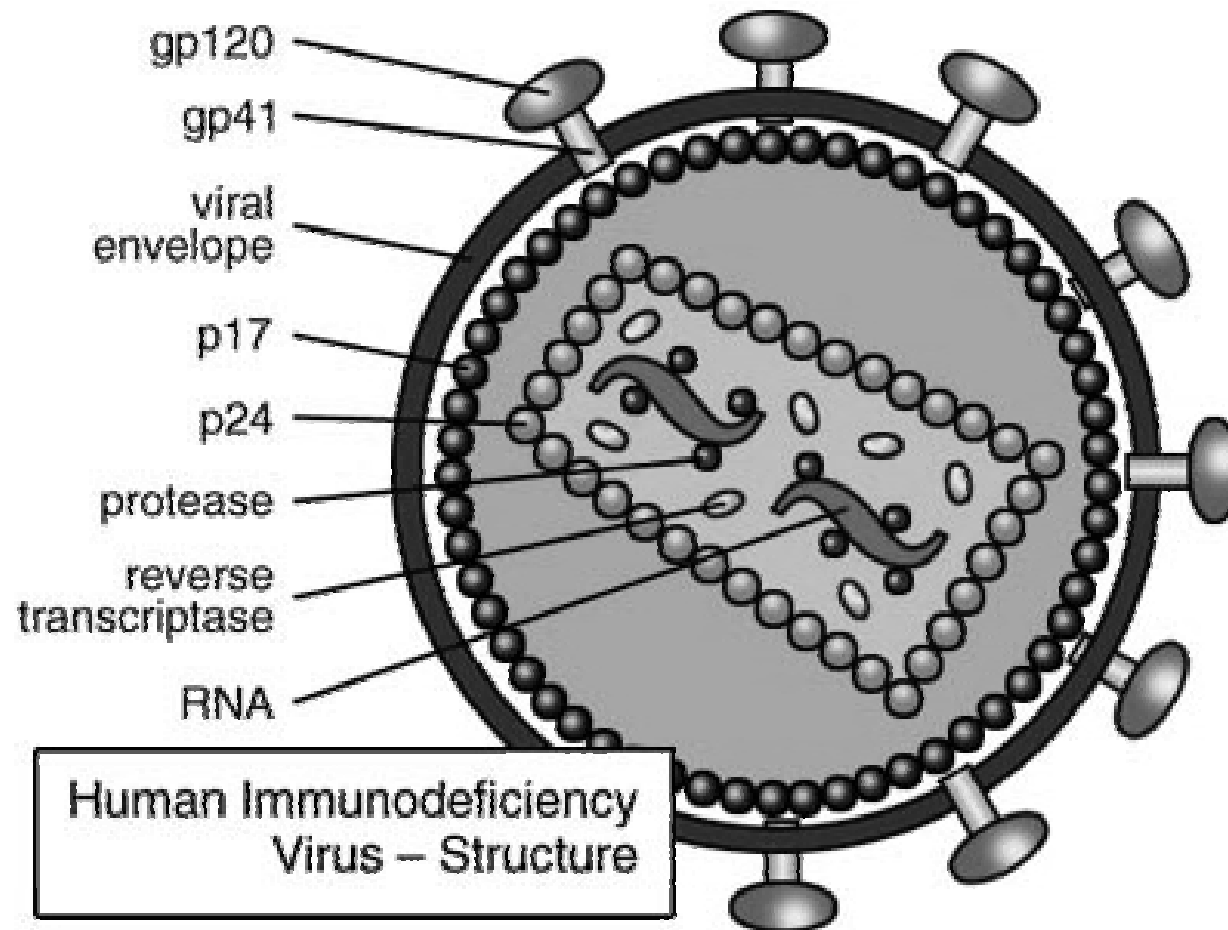
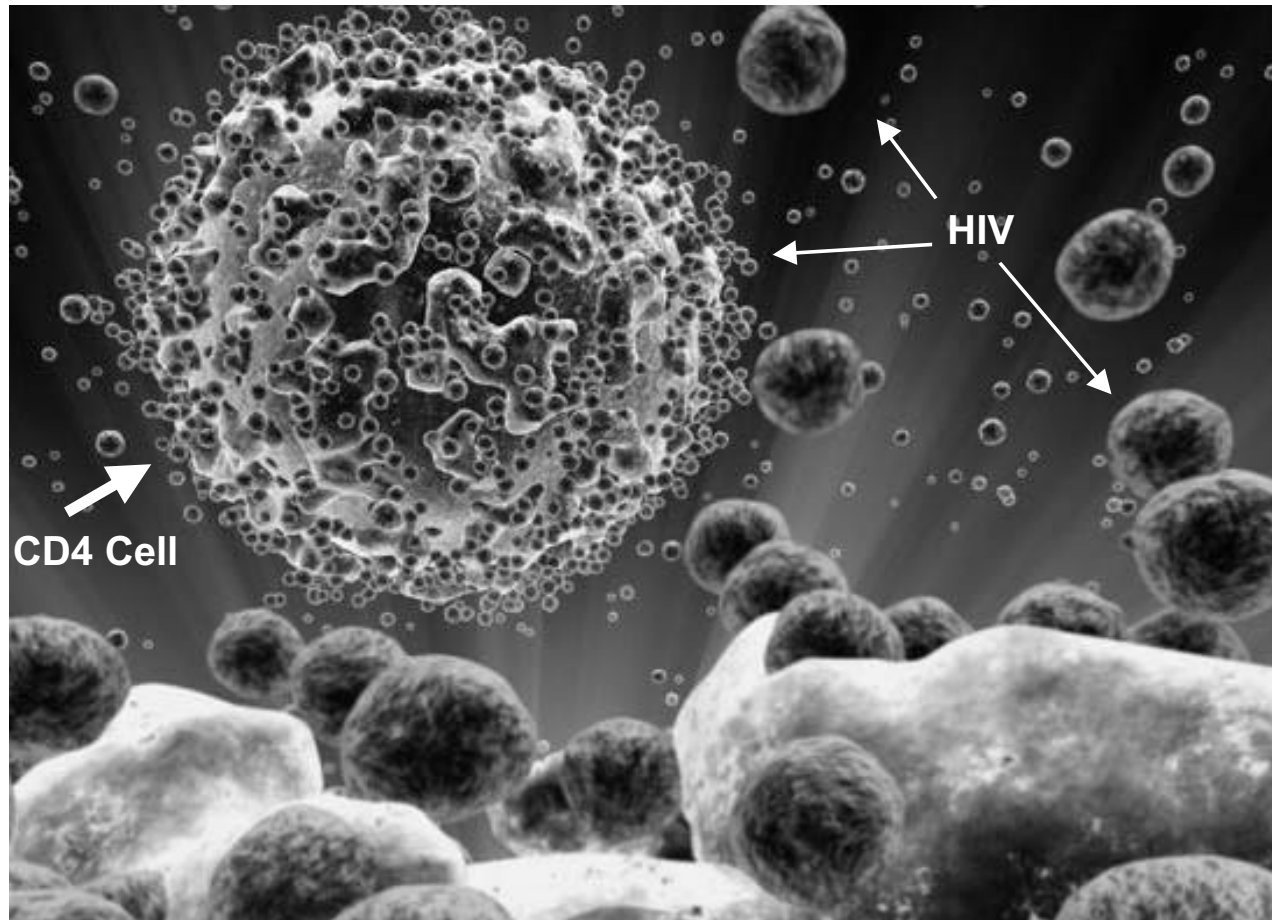


FIGURE 3 OF ATTACHMENT 1: STRUCTURE OF THE HIV



Source: Avert, 1999

FIGURE 4 OF ATTACHMENT 1: A VISUALISATION OF HIV INFECTION AT CELLULAR LEVEL



Source: Avert. 1999

5 *HIV VACCINE RESEARCH*

There is currently no vaccine for HIV.

HIV is able to mutate which makes vaccine development more difficult (Barnett and Blaikie, 1992: 2). There are currently two known major strains of HIV and these are identified as HIV-1 and HIV-2. These strains have different epidemiologies but the same reproductive mechanism and therefore the same damaging effect on the human immune system.

The understanding of the functioning of the HIV, as described in paragraph 4 also forms a basis for understanding the focus on research into vaccine development.

The stages through which the virus acts, as shown in Figure 1 of attachment 1, indicate the various points at which future vaccination may inhibit the process of infection.

Currently available drugs including Zidovudine (AZT) and Lamivudine (3TC) are intended to interfere with the reverse transcription process. Drugs known as protease inhibitors are intended to interfere with the transcription and translation processes.

At the time of this research, the cost of the currently available drugs prohibited their use in most third world situations.

ATTACHMENT 2

SELECTED INFORMATION ABOUT AIDS

1 *WHAT AIDS IS*

AIDS is the acronym for a particular condition. The condition is diagnosed symptomatically. Its clearest symptoms are a diversity of specific diseases (Sunter and Whiteside, 2000: 1). This diversity of symptoms of a common illness is called a syndrome.

Ordinarily the human body is capable of destroying certain bacterial infections. This capacity is found in what has been called the immune system.

When a person who once had a properly functioning immune system loses the proper functioning of that system, then that person is said to have acquired immunity deficiency. Since this condition is only evident through the symptoms of a variety of diseases that would not be able to infect a healthy body, the condition is called acquired immune deficiency syndrome (AIDS).

2 *WHAT CAUSES AIDS*

The HIV causes AIDS.

There are other situations in which a person may lose the functionality of their immune system and thus enter the AIDS condition. Five types of immune system stresses can alter the

functioning of the immune system. These are chemical, physical, biological, mental, and nutritional (Giraldo, 2000).

The increase evident amongst these five does cause an increase in the number of AIDS diagnoses in the world. There are however no epidemic proportion changes in the environment other than the expansion of the HIV pandemic which can account for the fact that AIDS cases were rare before 1980 and are common in 2001.

During the research for this paper no evidence was found of any group of persons who had AIDS and were not also living with HIV. The academic possibility of acquiring immune deficiency syndrome as a result of some agent other than AIDS remains a nuance and not a concern.

3 *HOW HIV CAUSES AIDS*

The action of HIV is explained in Attachment 1. As the host bodies T4 cells are destroyed, the body becomes increasingly less immune to infections. Figure 1 of attachment 2 shows the typical progression of HIV infection.

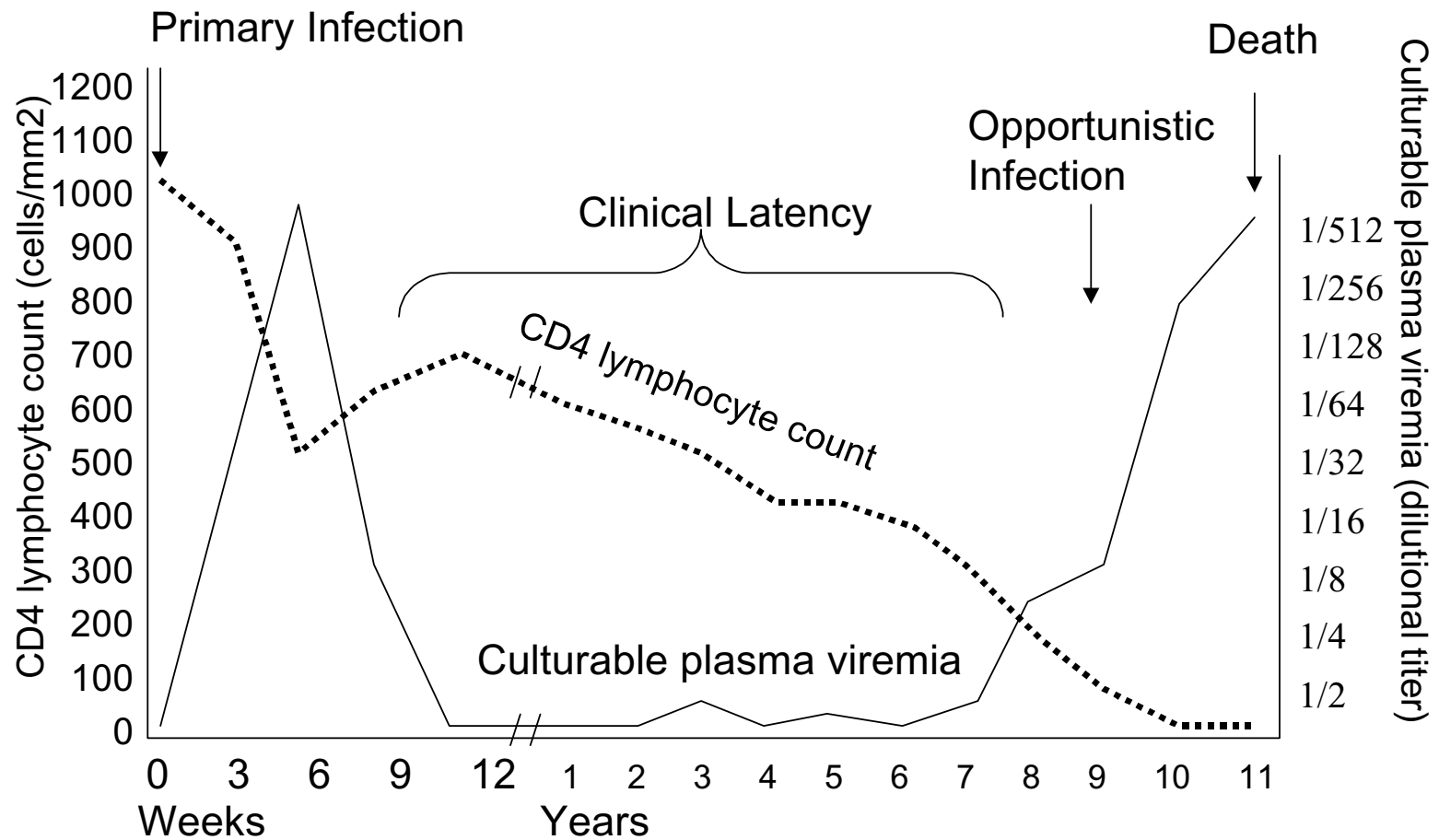
It can be seen from this Figure 1 that some signs of depressed immunity may be evident during weeks 6 to 9 of infection. These signs will soon pass as the body enters the so-called clinical latency period at about week 12 of infection.

The rate at which the HIV damages the CD4 cells of the host varies for many reasons. Amongst these are the quality of nutrition, exercise, rest and medication. This CD4 cell

depletion continues until the body starts to become infected by diseases it is no longer capable of fighting. These so called opportunistic infections mark the end of the clinical latency period.

The opportunistic infections speed the destruction of the immune system. The next stage is the death of the patient.

FIGURE 1 OF ATTACHMENT 2: CHANGES IN VIRAL LOAD AND CD4 CELL COUNTS OVER TIME



Source: National Institute of Allergy and Infectious Diseases as shown in Sunter and Whiteside, 2000: 9

ATTACHMENT 3

BLANK COPY OF SURVEY DOCUMENT

HIV/AIDS IMPACT SURVEY

Participation is voluntary
Awunyanselekanga ukuba uthathe inxaxheba
Vrywillige deelname

The survey is anonymous - your form can't be traced to you
Alifuneki igama lakho
Jou identiteit word nie gevra

Please drop your completed form in the survey box at a factory exit.
Nceda ufake iform yakho kwibhokisana elungiselelwe oko xa ophuma
kumnyango we fektri.
Plaas asseblief u voltooiide vorm in die bussie by die uitgaan hek.

INSTRUCTIONS

Use a pen or a pencil.
Tick or cross the box showing your answer.

If you make a mistake, circle the correct box.
If you make two mistakes on the same question, get a new form.

Please do not submit more than one form per person.

The end of the survey will be announced on VIKI and News Today.

This survey is the independent work of a student who also works at VWSA.



1 About You / Linkcukacha Ngawe / Omtrent Jy

- Are you married or have you been with one sex partner for over 6 months?
- 1 Utshatile okanye kukho umntu obuhlala naye iinyanga ezi 6 na nangaphezulu? Is jy getroud of het jy n seksueele verhouding met een persoon vir die afgelope ses maande gehad?
- Are you a man or a woman?
- 2 uYindoda okanye umfazi? Is jy 'n man of 'n vrou?
- What ethnic group do you belong to?
- 3 Loluphi uhlanga lwakho? Aan watter ras groep behoort jy?
- What age group do you fall into?
- 4 Ithini iminyaka yakho? In watter ouderdoms bereik is jy?
- Where do you work within VWSA?
- 5 Usebenza phi apha eVWSA? Waar werk jy binne VWSA?
- Are you in a leadership position at work?
- 6 Ingaba ukhokela abantu apha emsebenzini? Hou jy 'n leierskap posisie by VWSA?

2 Your Personal Experiences with HIV/AIDS / Ulwazi lwako Nge HIV/AIDS/ Jou Persoonlike Ervarings met HIV/AIDS

- Do you know anyone who has is HIV positive?
- 1 Ukhona omaziyo one HIV? Ken jy enige iemand wat HIV positief is?
- Are you HIV positive?
- 2 Unayo i HIV? Is jy HIV positief?
- Has anyone in your family died because of AIDS?
- 3 Ukhona umntu wakokwenu osweleke yi AIDS? Is enige van jou gesin aan VIGS oorlede?
- Has any friend of yours died because of AIDS?
- 4 Unaso isihlobo esisweleke yi AIDS? Is enige van jou vriende aan VIGS oorlede?
- How much do you spend monthly to treat HIV problems?
- 5 Yimalini oyisebenzisayo ngenyanga ngenxa ye HIV? Hoeveel spandeer jy maandeliks op VIGS behandeling?

3 Your Medical History / Linkcukacha Ngezempilo / Jou Mediese Geskiedenis

- 1 Have you ever had a sexually transmitted disease (STD)?
Seke wanalo usulelwano lwezifo zangaphantsi?
Het jy ooit enige seksueele oordraagbare siektes gehad?
- Yes No Not Sure Skip
- 2 Have you ever been tested for HIV?
Wake walenziwa uvavanyo le HIV?
Is jy ooit vir HIV getoets?
- Yes No Not Sure
- 3 Have you been vaccinated against TB?
Wake walenziwa uvavanyo lwe TB?
Is jy teen pering ingeend?
- Yes No Not Sure
- 4 Would you go to the VW medical centre for help if you thought you had HIV?
Ungaya emedical ukuba ucinga ukuba ucinsa ukuba iHIV?
Sal jy by die VW mediese sentrum hulp soek as jy vermoed dat jy HIV het?
- Yes No Not Sure
- 5 Would you go to the VW medical centre for help if you thought you had an STD?
Ungaya emedical ukuba ucinga ukuba ucinsa ukuba iSTD?
Sal jy by die VW mediese sentrum hulp soek as jy bekommer jou dat jy 'n STD het?
- Yes No Not Sure

4 HIV Knowledge / Uvavanyo Lolwazi Lwakho Nge HIV / HIV Kennis

- 1 Can HIV be cured?
Inganyangeka i HIV?
Kan HIV genees word?
- Yes No Not Sure
- 2 Does HIV cause AIDS?
Ingaba i HIV ibangela i AIDS?
Veroorsaak HIV VIGS?
- Yes No Not Sure
- 3 Does having more than one sex partner increase your chance of getting HIV?
Ingaba ukuthandana namantombi angaphezu kwesinye kubangela i HIV?
Verhoog dit jou kanse van HIV as jy meer as een seks maat het?
- Yes No Not Sure
- 4 Do STD's increase your chance of getting HIV?
Ingaba ukuthandana namantombi angaphezu kwesinye kubangela i HIV?
Verhoog dit jou kanse van HIV as jy 'n STD het?
- Yes No Not Sure
- 5 Is HIV spread only through sex with an infected person?
Ingaba i HIV inwenwa ngenxa yokulalana nomntu one HIV kuphela?
Word HIV slegs deur seksueele kontak versprei ?
- Yes No Not Sure

- Is it unsafe to work/live with a person who is HIV positive or who has AIDS?
- 6 Ingaba kuyingozi ukusebenza okayna ukuhlala nomntu onesifo ugawulayo? ☐ Yes ☐ No ☐ Not Sure
- Is dit onveilig om met n persoon wat HIV positief is, of wat VIGS het, te werk of lewe?
-
- Are there many people at VWSA who are HIV positive?
- 7 Ingaba baninzi abantu aba nogawulayo e VWSA? ☐ Yes ☐ No ☐ Not Sure
- Is daar baaie mense by VWSA wat HIV positief is?
-
- Can HIV positive people remain an active part of society?
- 8 Ingaba abantu aba nogawulayo banako ukuthatha inxaxheba kwizinto zokuhlala na? ☐ Yes ☐ No ☐ Not Sure
- Kan mense wat HIV positief is steeds 'n aktiewe deel van die gemeenskap wees?
-
- Can you identify an HIV positive person without a test?
- 9 Ungakwazi na ukohlula umntu onentsholongwane kagawulayo ngaphandle kovavanyo zingcali? ☐ Yes ☐ No ☐ Not Sure
- Kan jy sonder toets 'n HIV positief persoon identifiseer?
-
- Does using a condom in sex reduce the chance of getting HIV?
- 10 Ingaba ukusebenzisa izikhuseli (condom) kwehlisa amathuba okusuleleka ngugawulayo? ☐ Yes ☐ No ☐ Not Sure
- Verminder dit die kans dat jy HIV sou kry as jy 'n kondoom gebruik?
-
- Are babies of HIV positive women always HIV positive?
- 11 Ingaba abantwana bamakhosikazi anentsholongwane, soloko besosuleleka na? ☐ Yes ☐ No ☐ Not Sure
- Is dit altyd waar dat die baba van 'n HIV positief ma ook HIV positief sou wees?
-
- Is it fair to blame HIV positive people for their sickness?
- 12 Ingaba kulungile na ukubasola abantu abanogawulayo ngokuthi buzenzile ukuba bagule? ☐ Yes ☐ No ☐ Not Sure
- Is dit geregverdig om 'n HIV positief persoon vir sy siekte te blameer?
-
- Do you know where to go for help if you think you might be HIV positive?
- 13 Ingaba uyayazi apho unokuya khona xa unokuba nengculaza? ☐ Yes ☐ No
- Weet jy waar om hulp te soek as jy bekommer dat jy miskien HIV positief is?
-
- Do you know that most lubricants (Except KY Gel) make condoms useless against HIV?
- 14 Ingaba uyayazi ukuba zonke izinto eniziqabayo zingayenza icondom ingasebenzi? ☐ Yes ☐ No ☐ Not Sure ☐ Skip
- Het jy geweet meeste smeermiddels maak dit moontlik om nog steeds vigs te kry, al gebruik jy 'n kondoom?

5 Your Opinion / Imbono Yakho / Jou Mening

- Should VWSA give condoms to employees.
1 Ingaba uVWSA anganikezelana ngezikhuseli (condoms) kubasebenzi bakha? Yes No Not Sure
Moet VWSA kondome vir werkers gee?
-
- Should VWSA teach workers about HIV?
2 Ingaba uVWSA angaba fundisa na abasenzi ngesisifo ugawulayo? Yes No Not Sure
Moet VWSA vir werkers omtrent HIV inlig?
-
- Should VWSA help the community to deal with HIV?
3 Ingaba iVWSA angabanceda na abahlali jikelele ngendlela zokuhlangabezana no gawulayo? Yes No Not Sure
Moet VWSA 'n rol speel om die gemeenskap met hulp te voorsien in verband met HIV?
-
- Should VWSA treat you differently if you get HIV?
4 Ingaba kufuneka uVWSA akuphathe ngendlele eyohlukileyo kwabanye abasebenzi ngokuba une HIV? Yes No Not Sure
Moet VWSA vir jou anders behandel as jy HIV positief is?
-
- Do you think VWSA should provide counselling for HIV positive people?
5 Ucinga ukuba kulungile na ukuba uVWSA abe nabacebisi ngogawulayo? Yes No Not Sure
Dink jy VWSA moet hulp verskaf aan mense wat HIV positief is?
-
- Should VWSA to offer voluntary HIV tests to employees?
6 Ungathanda na ukuba uVWSA anikezele ngovavanyo lwe HIV ngokuzifunela komsebenzi? Yes No Not Sure
Moet VWSA vir werkers vrywillige HIV toetse offer?
-
- Do you think VWSA should offer HIV treatment medicine to employees?
7 Ucinga ukuba iVWSA kufuneka inekezele ngonyango kubasebenzi? Yes No Not Sure
Dink jy VWSA vir werkers HIV medisyne moes gee?
-
- Do you think home based care for HIV sufferers is a good idea?
8 Ingaba ucinga ukuba ukufundiswa malunga ne HIV emakhaya yinto elungileyo na? Yes No Not Sure
Dink jy dat tuis verpleeging vir HIV siektes n goeie idee is?

6 Your Sexuality / Ubume Bakho Ngezesondo / Jou Seksualiteit

- Have you ever had sexual intercourse?
 1 Ingaba wake wobalane ngesondo?
 Het jy ooit seks gehad?
- | | | |
|-----|----|------|
| Yes | No | Skip |
|-----|----|------|

If NO, go to end. Inteen NEE, gaan na einde. Ukuba awuzange wabelana ngesondo ugqibile.

- At what age did you first have sexual intercourse?
 2 Wawuneminyaka emingaphi xawawuqala ukobelane ngesondo?
 Hoe oud was jy toe jy eerste seksueele kontak gehad het?
- | | | | |
|-------|-------|-------|------|
| 10-15 | 16-20 | 21-25 | 26 - |
|-------|-------|-------|------|

- How many sex partners did you have in the last year?
 3 Bangaphi abantu awabalane nabo ngesondo kunyaka odlulila?
 Met hoeveel mense het jy in die laaste jaar seks gehad?
- | | | | |
|---|---|-----|-----|
| 0 | 1 | 2-5 | 6 - |
|---|---|-----|-----|

- Are you a man who has sex with women only?
 4 Ingaba uyindoda eyabalane ngesondo naba sethyini kuphela?
 Is jy 'n man wat net met vroue seks het?
- | | | |
|-----|----|------|
| Yes | No | Skip |
|-----|----|------|

- Are you a man who has sex with men only?
 5 Ingaba uyindoda eyabelana ngesondo namanye amadoda kuphela?
 Is jy 'n man wat net met ander mans seks het?
- | | | |
|-----|----|------|
| Yes | No | Skip |
|-----|----|------|

- Are you a woman who has sex with men only?
 6 Ingaba ungowasethyini owabelana ngesondo namadoda kuphela?
 Is jy 'n vrou wat net met mans seks het?
- | | | |
|-----|----|------|
| Yes | No | Skip |
|-----|----|------|

- Do you have sex with men and women?
 7 Wabelana ngesondo namadoda nabafazi?
 Het jy seks met mans en vroue?
- | | | |
|-----|----|------|
| Yes | No | Skip |
|-----|----|------|

- Have you ever taken money in exchange for sex?
 8 Ingaba wakhe wabelana nomntu ngesondo ngenjongo zokuzuza imali?
 Het jy ooit geld in ruil vir seks ontvang?
- | | | |
|-----|----|------|
| Yes | No | Skip |
|-----|----|------|

- Have you ever paid someone for sex?
 9 Seke wathenga ukwabelana ngesondo?
 Het jy ooit vir seks betaal?
- | | | |
|-----|----|------|
| Yes | No | Skip |
|-----|----|------|

- Do you sometimes have sex without a condom?
 10 Wayisebezisa na icondom ukugqibela kwakho ukwabelana nowakwakho ngesondo?
 Neem jy ooit in seks deel sonder om 'n kondoom te gebruik?
- | | | |
|-----|----|------|
| Yes | No | Skip |
|-----|----|------|

- Do you mind using a condom when you have sex?
 11 Uyakhathazekana ukusebenzisa icondom xa usabelana ngesondo?
 Gee jy om om 'n kondoom te gebruik?
- | | | | |
|-----|----|----------|------|
| Yes | No | Not Sure | Skip |
|-----|----|----------|------|

- Have you ever used a lubricant when using a condom?
 12 Ingaba wakhe wayisebenzisa na into yokuthambisa xa usebenzisa icondom?
 Het jy ooit n smeermiddel met 'n kondoom gebruik?
- | | | | |
|-----|----|----------|------|
| Yes | No | Not Sure | Skip |
|-----|----|----------|------|

Thank you. Enkosi. Dankie.

ATTACHMENT 4

HIV TESTING

1. WHAT IS AN HIV TEST?

This is a test that is done to find out if a person has the HIV inside him or her.

2. WHAT TESTS CAN BE DONE?

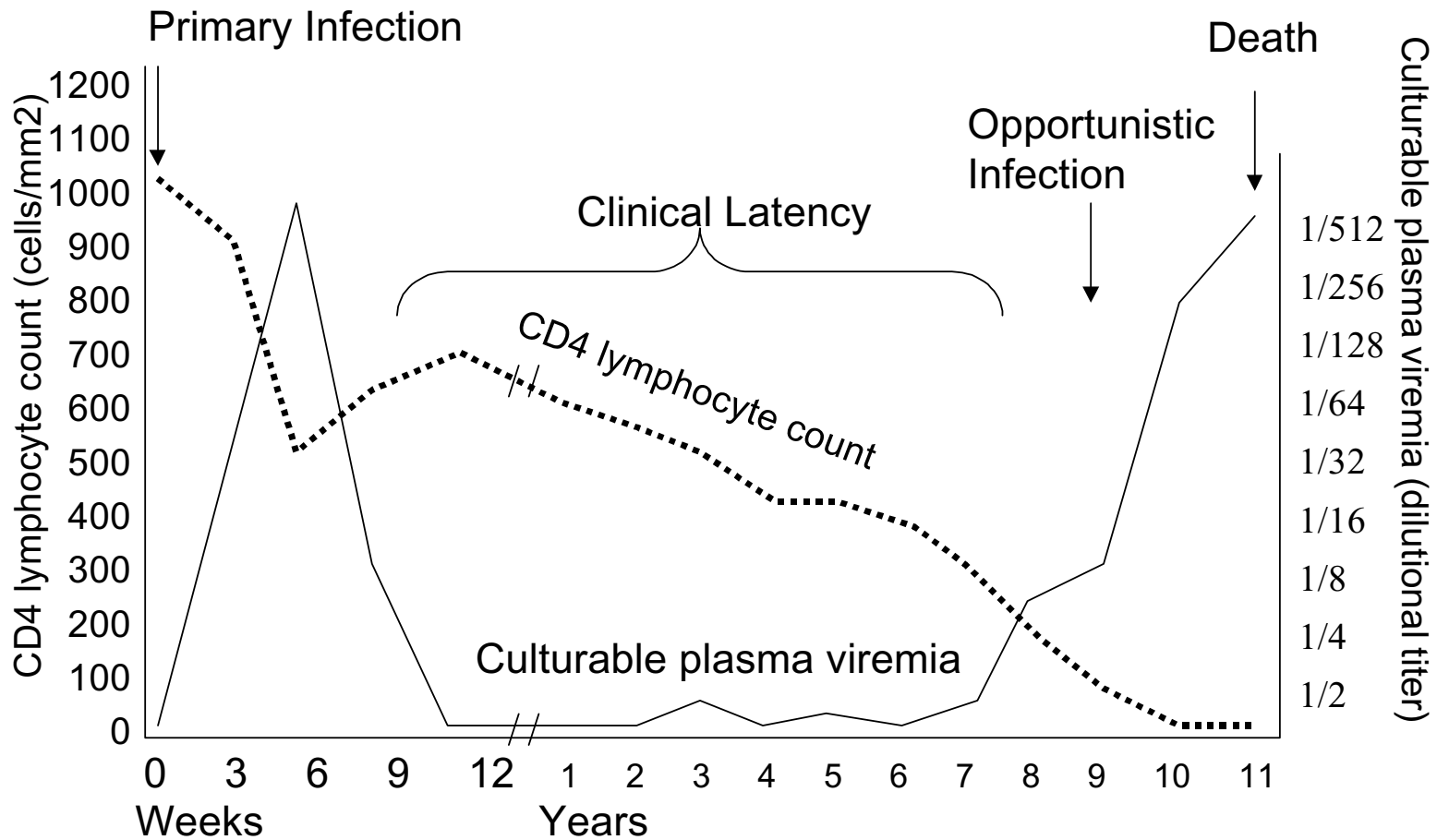
There are a number of ways to test a person for HIV and each is different.

2.1 THE ELISA TEST

This is the most commonly used test. It is the cheapest test (Approximately R97.70 at the time of research) with results felt to be reliable enough. It does not detect the actual presence of the virus. It detects the antibodies that the body makes to fight off HIV cells when they are inside the body (www.women-alive.org, 2001). It is the test that VWSA uses for people who ask to be tested for HIV.

However the human body takes some time (up to about three months – see Figure 1) to start producing HIV antibodies after first being infected with the HIV. During this time, an ELISA test may come out HIV negative even though the person is in fact HIV-positive. Since the viral RNA is quite high during this initial period, a viral load test may for that period be a better indication of HIV status (www.women-alive.org, 2001). The viral load test gives a reading of the culturable plasma viremia (Figure 1).

FIGURE 1 OF ATTACHMENT 4: CHANGES IN VIRAL LOAD AND CD4 CELL COUNTS OVER TIME



Source: National Institute of Allergy and Infectious Diseases as shown in Sunter and Whiteside, 2000: 9

A single positive result from an ELISA test does not automatically indicate that the patient is HIV-positive. It does however mean that further testing is required. A more expensive test called the Western Blot is often used to confirm the results of an positive ELISA test.

2.2 THE WESTERN BLOT TEST

This test is more expensive to conduct than is the ELISA test. In this test, the blood is also tested for antibodies, but the test is carried out in a very different way to the ELISA test. Basically a special method is used to lay out the HIV proteins from largest to smallest on a strip of film. Serum containing HIV antigens is added and this causes a reaction with any HIV antibodies on the strip of film. It results in a series of unique shaded strips on the film (if there is a positive reaction) and from this the positive, negative and indeterminate result is obtained (Museum of Science and Industry, 2001).

3. HOW ACCURATE ARE THESE TESTS?

The tests are based on observation of the reaction between antibodies in the blood and antigens artificially introduced to it. There are some proteins found in the HIV which are similar to those found in other infectious agents – thus the reaction which is taken as indicating the presence of HIV can be caused by something other than HIV. In short, their accuracy is less than 100% but a positive result from an ELISA followed by a positive result from a Western Blot should be taken as an absolutely positive result. While there remains some chance that the patient will in fact not be HIV-positive, assuming that he or she is gives opportunity to begin with some active form of treatment before the infection spreads too far.

ATTACHMENT 5

PROFILE OF RESPONDENT GROUP AND TABLATURE OF FINDINGS

1. *RESPONDENT GROUP PROFILE*

1.1 *DEMOGRAPHIC*

The respondents were mostly male and married or in some kind of stable relationship. White and black people were equally represented in the survey but the coloured community was slightly under represented.

More than 40% of the respondents were less than 30 years of age.

Most of the respondents were line workers, but the split was nearly even between line and office based people. About one quarter of the respondents were holding leadership positions within the company.

1.2 *EXPERIENCE AND EXPOSURE TO HIV/AIDS*

More than a quarter of the respondents knew at least one person who was HIV-positive. Two percent of the respondents disclosed that they were HIV-positive, eight percent had lost family members and 16.5% had lost one or more friends to the epidemic. Despite this intimate exposure very few of the respondents reported

regular monthly expenses directly related to the epidemic. Those that did report expenses did not report regular expenses in excess of R500 per month.

1.3 *SEXUAL HEALTH AND ATTITUDES*

One quarter of the respondents reported having at least one STD in their past and over half of them had been tested for HIV. Just over half of the respondents indicated that they would be willing to approach the VWSA medical centre for help if they believed they might have contracted the HIV or a STD.

Around 12% of the respondents felt that it was fair to say that people with HIV could only blame themselves.

The majority of the respondents believed that VWSA should intervene with condoms, training, counselling, testing and medication.

1.4 *UNDERSTANDING AND KNOWLEDGE OF HIV/AIDS RELATED MATTERS*

About 20% of the respondents believed that HIV could be cured. Almost 6% did not believe that HIV causes AIDS. Nearly thirty percent of the respondents believed that having sexual intercourse with an already infected was the only way they could contract the virus.

About ten percent of the respondents felt it was unsafe to live or work with someone who was infected with the HIV. Nearly 70% of the respondents were not sure whether or not there were many HIV-positive people working at VWSA. At the same

time, nearly 10% believed that people infected with HIV could be identified without the need for a blood test.

A third of the people believed that babies born of HIV-positive women would always be born HIV-positive.

Substantially more than forty percent of the respondents were not aware of the potential dangers of using a non water-based lubricant with a condom.

A resounding 98% of the respondents felt that VWSA should teach the workers about HIV/AIDS.

1.5 UNDERSTANDING AND KNOWLEDGE OF HIV/AIDS RELATED MATTERS

Nearly 15% of the respondents had their first experience of sexual intercourse between the ages of 16 and 20. Nearly ten percent had this first experience between the ages of 10 and 15. One respondent had it at the age of eight.

In terms of sexual fidelity, 23% of the respondents reported having more than one sexual partner in the preceding twelve-month period and 11% reported having six or more in that time.

Six percent of the respondents classified themselves as being either homosexual or bisexual people. Nearly six percent of them reported having accepted money in exchange for sex and nearly seven percent reported having paid for sex.

Most of the respondents said that occasionally or frequently had sexual intercourse without using a condom. A third of them said they did mind using one. About 14% of the respondents said that they had used a lubricant with a condom at some stage.

2. TABLATURE OF FINDINGS

Question	Answers							
	Yes		No		Not Sure		Skip	
1.1	Are you married/were you with 1 partner for over 6 months?		85	79.4%	21	19.6%	1	0.9%
			(Man)		(Woman)			
1.2	Are you a man or a woman?		96	87.3%	14	12.7%		1 0.9%
			(Black)		(White)		(Other)	
1.3	What ethnic group do you belong to?		40	37.4%	41	38.3%	26	24.3%
			(15-25)		(26-30)		(31-40)	
1.4	What age group do you fall into? (-0)		25	33.3%	22	29.3%	28	37.3%
			(Office)		(Line)		(Other)	
1.5	Where do you work within VWSA?		44	40.0%	52	47.3%	14	12.7%
1.6	Are you in a leadership position at work?		29	26.4%	81	73.6%	0	0.0%
2.1	Do you know anyone who is HIV-positive?		28	25.5%	65	59.1%	17	15.5%
2.2	Are you HIV-positive?		2	1.9%	88	82.2%	17	15.9%
2.3	Has anyone in your family died because of AIDS?		9	8.3%	99	91.7%	0	0.0%
2.4	Has any friend of yours died of AIDS?		18	16.5%	81	74.3%	10	9.2%

Question**Answers****Yes****No****Not Sure****Skip***(0)**(1-200)**(201-500)*

2.5	How much in Rands do you spend monthly to treat HIV?	93	94.9%	2	2.0%	3	3.1%	13	11.7%
3.1	Have you ever had a sexually transmitted disease?	26	23.6%	80	72.7%	4	3.6%	1	0.9%
3.2	Have you ever been tested for HIV?	61	55.5%	45	40.9%	4	3.6%	1	0.9%
3.3	Have you been vaccinated against TB?	51	46.8%	42	38.5%	16	14.7%	2	1.8%
3.4	Would you go to VW for help if you thought you had HIV?	63	56.8%	37	33.3%	11	9.9%	0	
3.5	Would you go to VW for help if you thought you had a STD	63	57.3%	39	35.5%	8	7.3%	1	0.9%
4.1	Can HIV be cured?	20	18.0%	71	64.0%	20	18.0%	0	
4.2	Does HIV cause AIDS?	95	85.6%	6	5.4%	10	9.0%	0	
4.3	Is your risk of HIV higher if you have more sex partners?	106	95.5%	5	4.5%	0	0.0%	0	
4.4	Does having a STD increase the risk of getting HIV?	82	73.9%	10	9.0%	19	17.1%	0	
4.5	Is HIV spread only by sex with infected people?	30	27.0%	73	65.8%	8	7.2%	0	
4.6	Is it unsafe to work/live with a person who has HIV/AIDS?	10	9.2%	89	81.7%	10	9.2%	2	1.8%
4.7	Are there many people at VWSA who are HIV-positive?	30	27.8%	1	0.9%	77	71.3%	3	2.7%
4.8	Can HIV-positive people remain active in society?	91	84.3%	8	7.4%	9	8.3%	3	2.7%
4.9	Can you identify an HIV-positive person without a test?	11	10.2%	83	76.9%	14	13.0%	3	2.7%
4.10	Does using a condom reduce the chance of getting HIV?	96	88.1%	7	6.4%	6	5.5%	2	1.8%

Question**Answers**

		Yes		No		Not Sure		Skip	
4.11	Are babies of HIV-positive women always HIV-positive?	37	33.9%	42	38.5%	30	27.5%	2	1.8%
4.12	Is it fair to blame HIV-positive people for their sickness?	13	12.0%	85	78.7%	10	9.3%	3	2.7%
4.13	Do you know where to go for help if you think you have HIV?	91	84.3%	15	13.9%	2	1.9%	3	2.7%
4.14	Do you know most lubricants reduce condom HIV protection?	33	32.0%	43	41.7%	27	26.2%	8	7.2%
5.1	Should VWSA give condoms to employees?	89	87.3%	11	10.8%	2	2.0%	9	8.1%
5.2	Should VWSA teach workers about HIV?	100	98.0%	2	2.0%	0	0.0%	9	8.1%
5.3	Should VWSA help the community to deal with HIV?	86	85.1%	10	9.9%	5	5.0%	10	9.0%
5.4	Should VWSA treat you differently if you get HIV?	13	12.7%	80	78.4%	9	8.8%	9	8.1%
5.5	Do you think VWSA should counsel HIV-positive people?	93	91.2%	6	5.9%	3	2.9%	9	8.1%
5.6	Should VWSA offer workers voluntary HIV tests?	94	92.2%	4	3.9%	4	3.9%	9	8.1%
5.7	Should VWSA offer HIV medicine to workers?	74	73.3%	13	12.9%	14	13.9%	10	9.0%
5.8	Is home-based care for sick HIV patients a good idea?	70	68.0%	19	18.4%	14	13.6%	8	7.2%
6.1	Have you ever had sexual intercourse?	98	95.1%	5	4.9%	0	0.0%	8	7.2%
		10-15		16-20		21-25		26 +	
6.2	At what age did you first have sexual intercourse? (-9)	15	14.7%	57	55.9%	23	22.5%	7	6.9%

Question**Answers**

		Yes		No		Not Sure		Skip	
		0		1		2-5		6 +	
6.3	How many sex partners did you have in the last year? (-10)	4	4.0%	63	62.4%	23	22.8%	11	10.9%
6.4	Are you a man who has sex with women only?	85	76.6%	4	3.6%	1	0.9%	21	18.9%
6.5	Are you a man who has sex with men only?	1	1.3%	75	97.4%	1	1.3%	34	30.6%
6.6	Are you a woman who has sex with men only?	14	36.8%	21	55.3%	3	7.9%	73	65.8%
6.7	Do you have sex with men and women?	3	4.5%	62	93.9%	1	1.5%	45	40.5%
6.8	Have you ever taken money in exchange for sex?	5	5.5%	86	94.5%	0	0.0%	20	18.0%
6.9	Have you ever paid someone for sex?	6	6.5%	87	93.5%	0	0.0%	18	16.2%
6.10	Do you sometimes have sex without a condom?	79	86.8%	11	12.1%	1	1.1%	20	18.0%
6.11	Do you mind using a condom when you have sex?	30	32.6%	59	64.1%	3	3.3%	19	17.1%
6.12	Have you ever used a lubricant when using a condom?	12	13.8%	73	83.9%	2	2.3%	24	21.6%

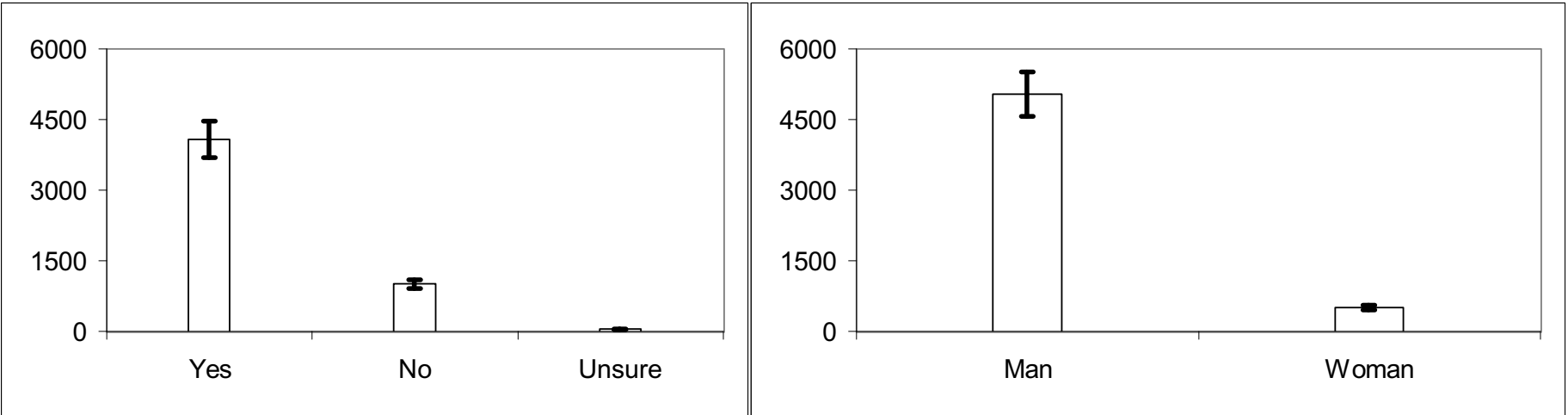
Source: Survey. 2001

ATTACHMENT 6

PROFILE OF WORKFORCE PROJECTED FROM SURVEY FINDINGS

Survey Question (Abbreviated)	CI	LCL	Mean	UCL	LCL	Mean	UCL	LCL	Mean	UCL
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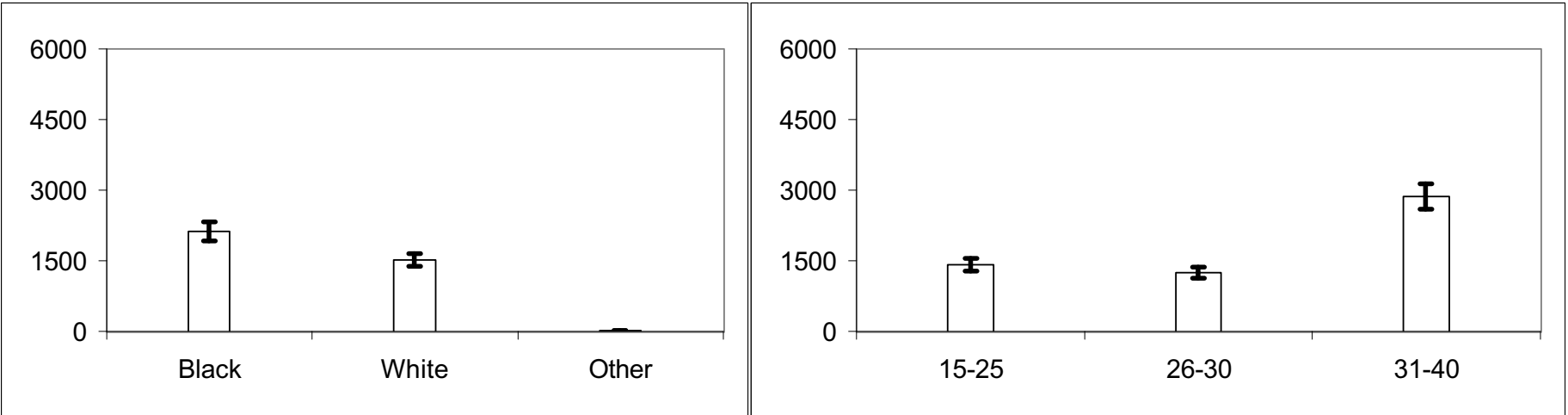
			Yes			No			Unsure		
1.1	Married/with 1 partner for over 6 months	9.4%	3699	4083	4467	913	1008	1103	42	46	51



			Man		Woman			
1.2	Gender	9.3%	4573	5042	5510	462	510	557

Survey Question (Abbreviated)	CI	LCL	Mean	UCL	LCL	Mean	UCL	LCL	Mean	UCL
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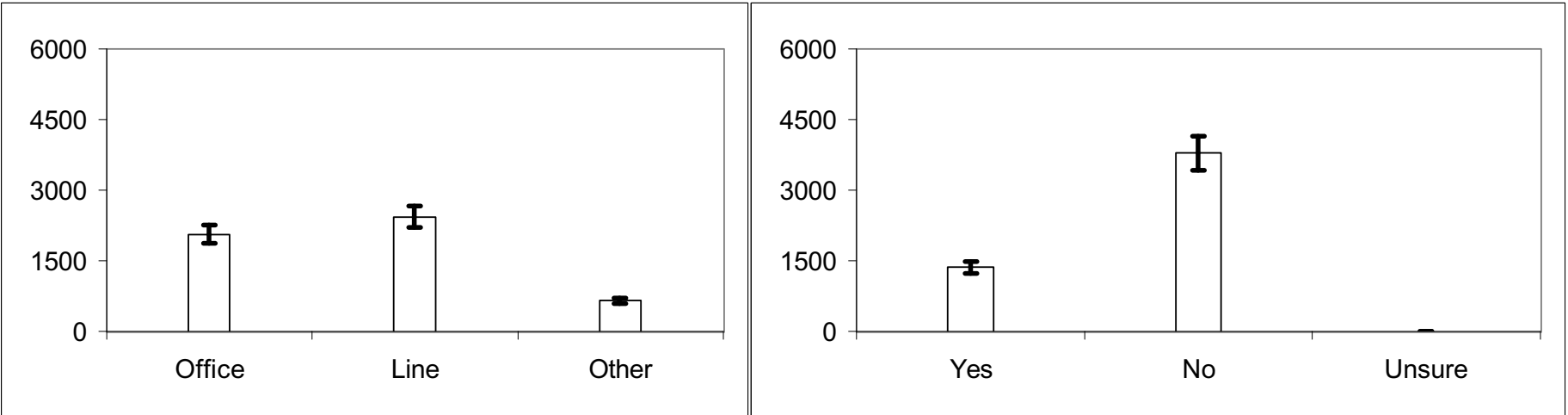
			Black			White			Other		
1.3	Ethnic group	9.4%	1920	2119	2318	1374	1517	1659	19	21	23



			15-25			26-30			31-40		
1.4	Age group	9.2%	1281	1410	1540	1127	1241	1355	2608	2872	3136

Survey Question (Abbreviated)	CI	LCL	Mean	UCL	LCL	Mean	UCL	LCL	Mean	UCL
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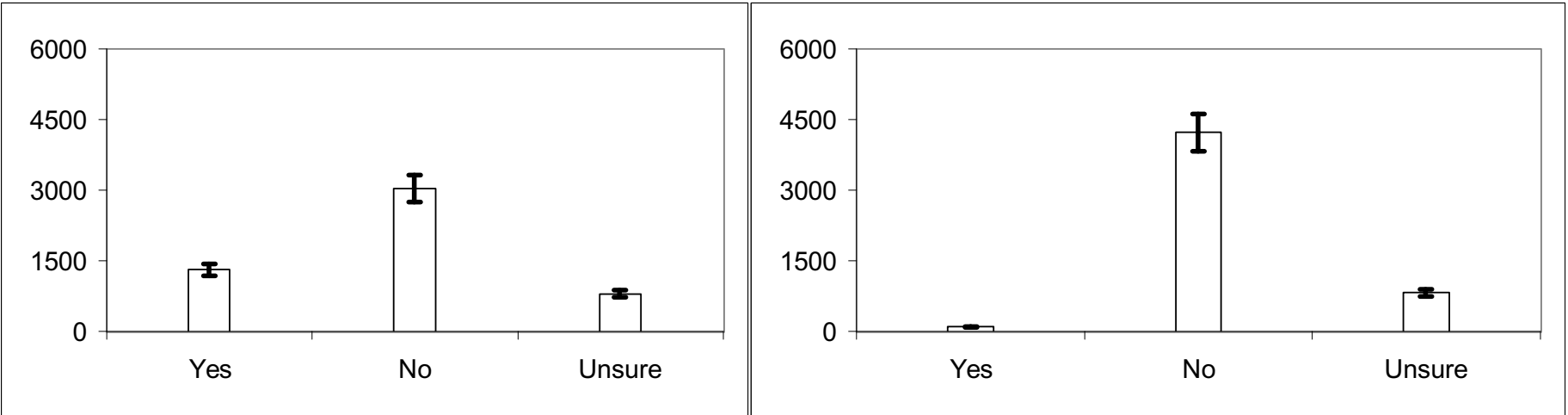
			Office			Line			Other		
1.5	Place of work inside VWSA	9.3%	1866	2057	2248	2206	2432	2659	592	653	714



			Yes			No			Unsure		
1.6	People who are leaders at VWSA	9.3%	1231	1358	1484	3433	3785	4137	0	0	0

Survey Question (Abbreviated)	CI	LCL	Mean	UCL	LCL	Mean	UCL	LCL	Mean	UCL
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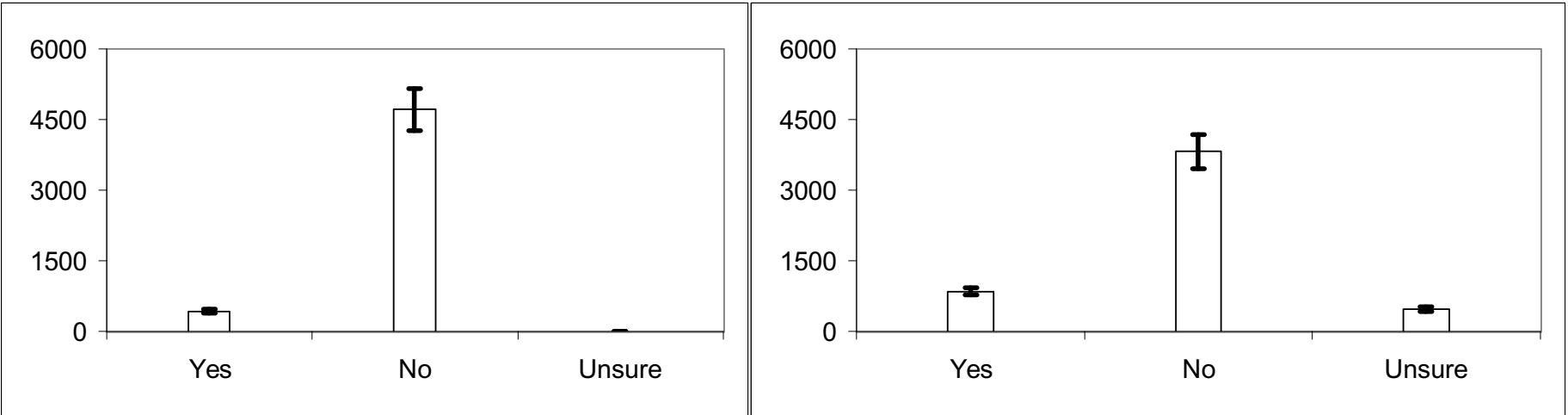
			Yes			No			Unsure		
2.1	People who know someone HIV+	9.3%	1189	1311	1433	2757	3039	3322	723	797	871



			Yes			No			Unsure		
2.2	HIV positive people	9.4%	89	98	107	3830	4227	4624	741	818	895

Survey Question (Abbreviated)	CI	LCL	Mean	UCL	LCL	Mean	UCL	LCL	Mean	UCL
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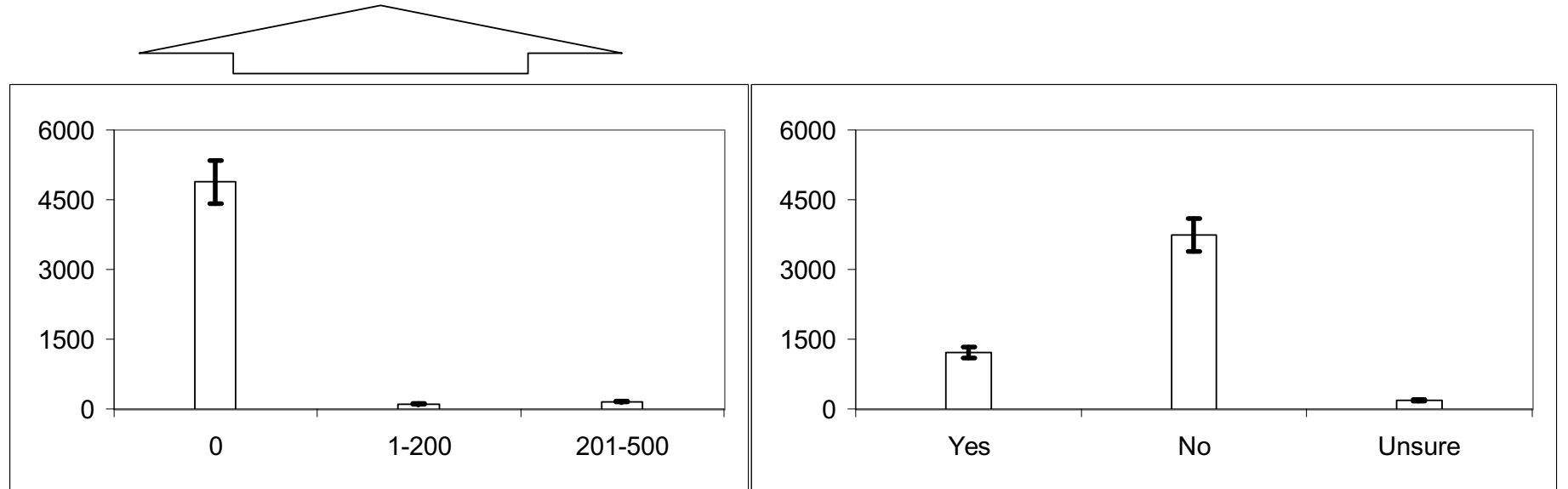
			Yes			No			Unsure	
2.3	People with family lost to HIV/AIDS	9.3%	387	427	467	4277	4716	5154	0	0



			Yes			No			Unsure	
2.4	People with friends lost to HIV/AIDS	9.3%	770	849	927	3466	3821	4176	429	473

Survey Question (Abbreviated)	CI	LCL	Mean	UCL	LCL	Mean	UCL	LCL	Mean	UCL
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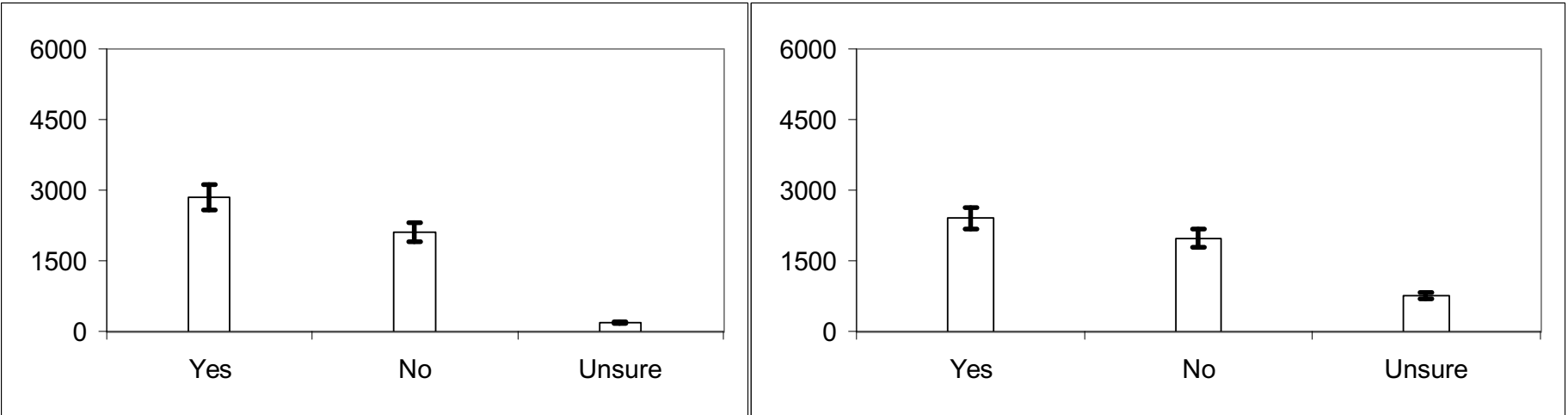
			0			1-200			201-500		
2.5	Monthly HIV related spending	9.8%	4402	4880	5358	93	103	113	144	159	175



			Yes			No			Unsure		
3.1	People with prior STD's	9.3%	1101	1214	1326	3391	3739	4086	168	185	202

Survey Question (Abbreviated)	CI	LCL	Mean	UCL	LCL	Mean	UCL	LCL	Mean	UCL
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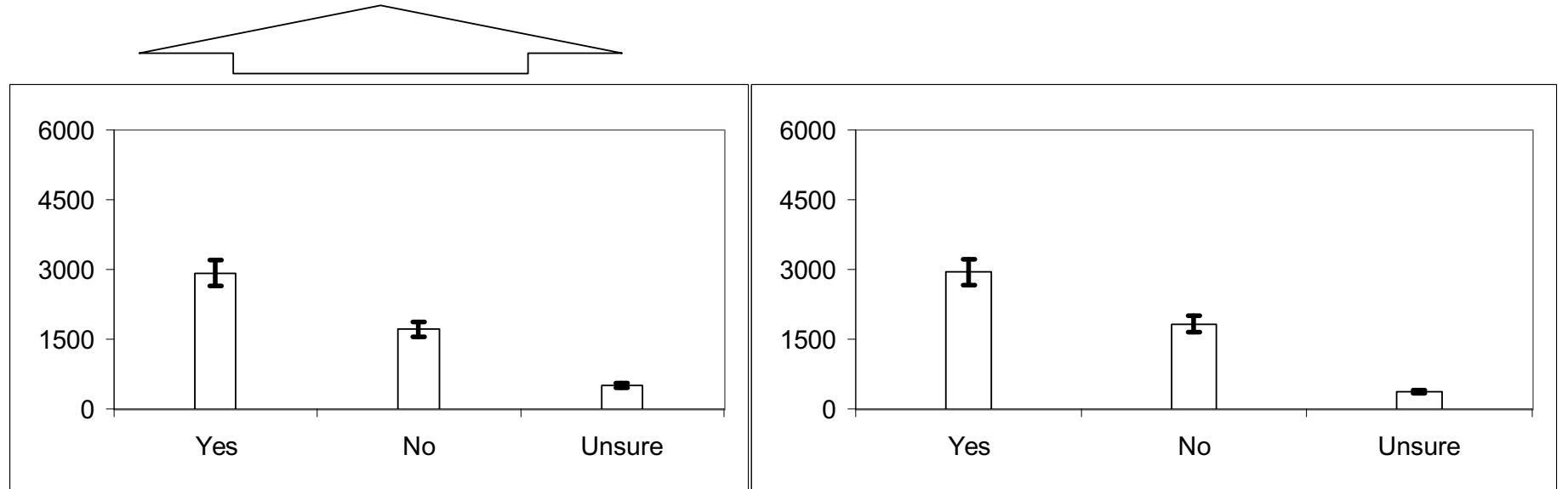
			Yes			No			Unsure		
3.2	People tested for HIV	9.3%	2589	2854	3120	1908	2103	2299	168	185	202



			Yes			No			Unsure		
3.3	People vaccinated against TB	9.3%	2183	2407	2631	1796	1980	2164	686	756	826

Survey Question (Abbreviated)	CI	LCL	Mean	UCL	LCL	Mean	UCL	LCL	Mean	UCL
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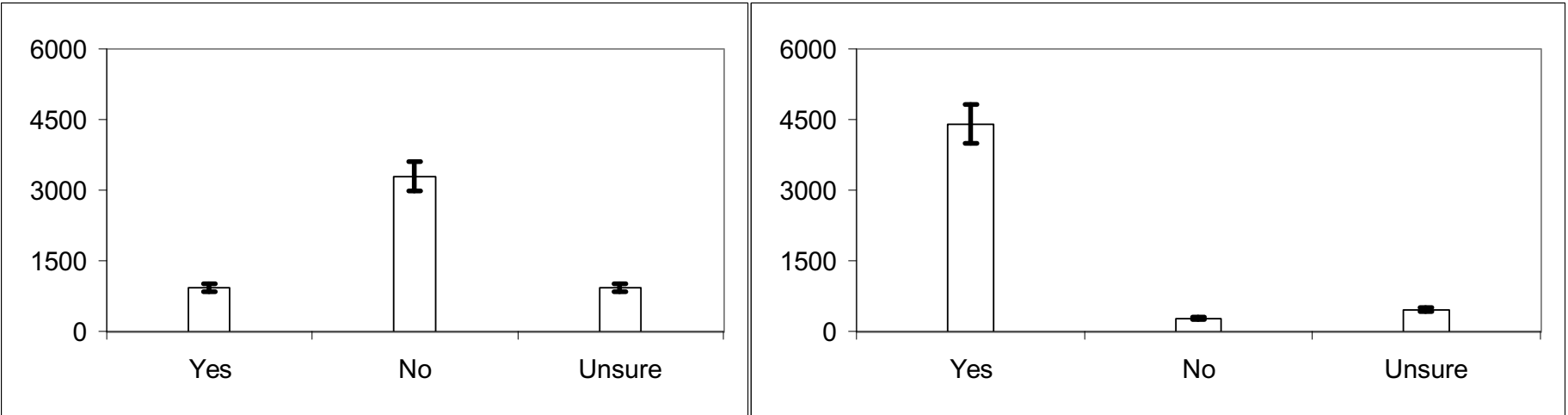
			Yes			No			Unsure		
3.4	Would go to VW medical for STD help	9.2%	2652	2921	3190	1555	1712	1870	462	509	556



			Yes			No			Unsure		
3.5	Would go to VW medical for HIV help	9.3%	2673	2947	3221	1656	1826	1995	340	375	410

Survey Question (Abbreviated)	CI	LCL	Mean	UCL	LCL	Mean	UCL	LCL	Mean	UCL
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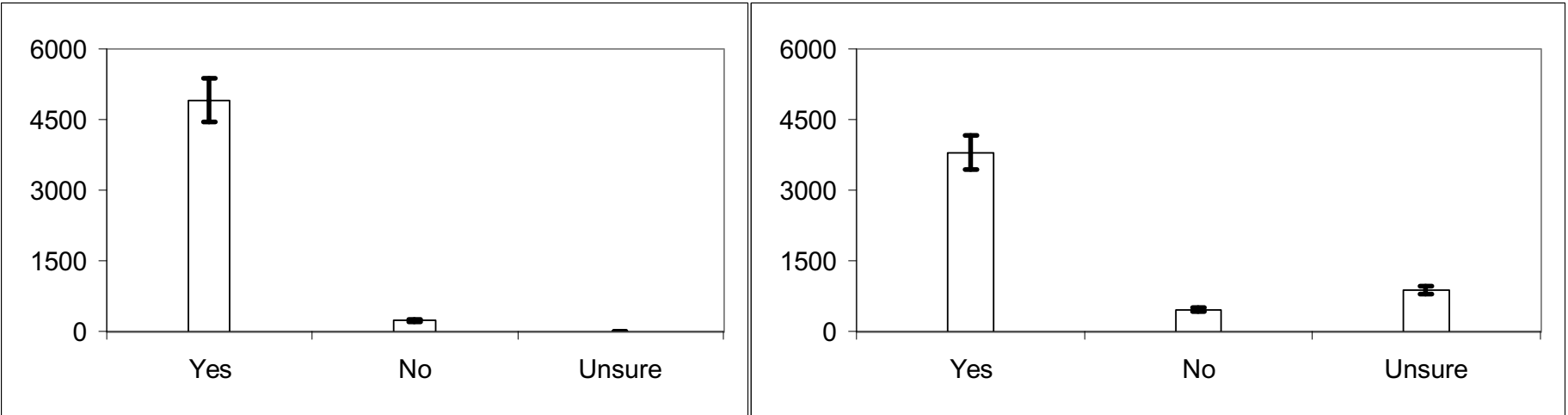
			Yes			No			Unsure		
4.1	Believe HIV is curable	9.2%	840	926	1011	2988	3291	3594	840	926	1011



			Yes			No			Unsure		
4.2	Believe HIV causes AIDS	9.2%	3997	4402	4807	252	278	303	420	463	505

Survey Question (Abbreviated)	CI	LCL	Mean	UCL	LCL	Mean	UCL	LCL	Mean	UCL
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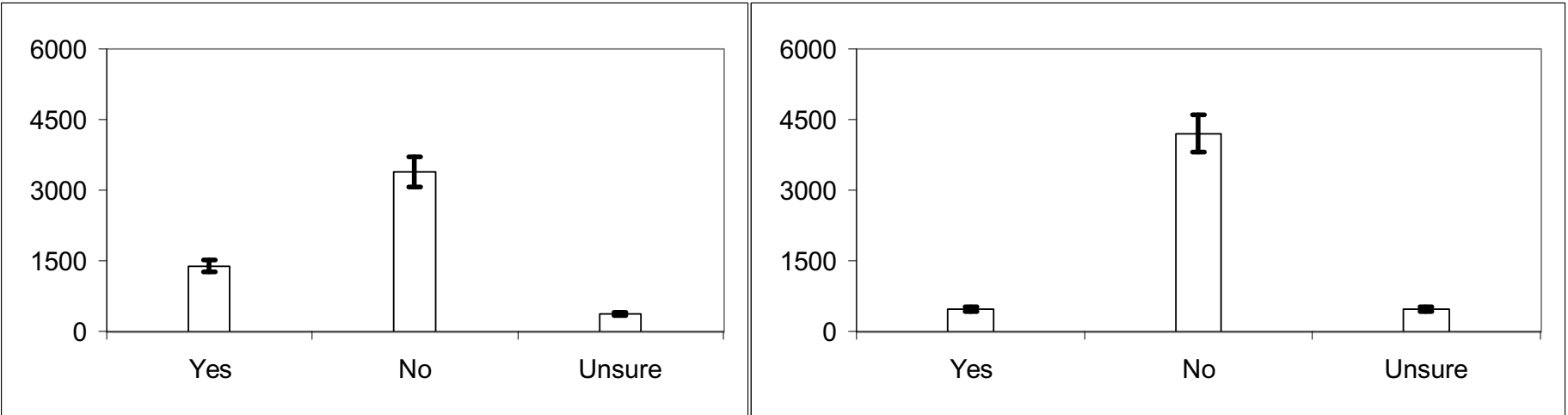
			Yes			No			Unsure	
4.3	Believe multiple partners increase risk	9.2%	4459	4911	5363	210	231	253	0	0



			Yes			No			Unsure	
4.4	Believe STD's increase risk	9.2%	3451	3800	4150	420	463	505	798	879

Survey Question (Abbreviated)	CI	LCL	Mean	UCL	LCL	Mean	UCL	LCL	Mean	UCL
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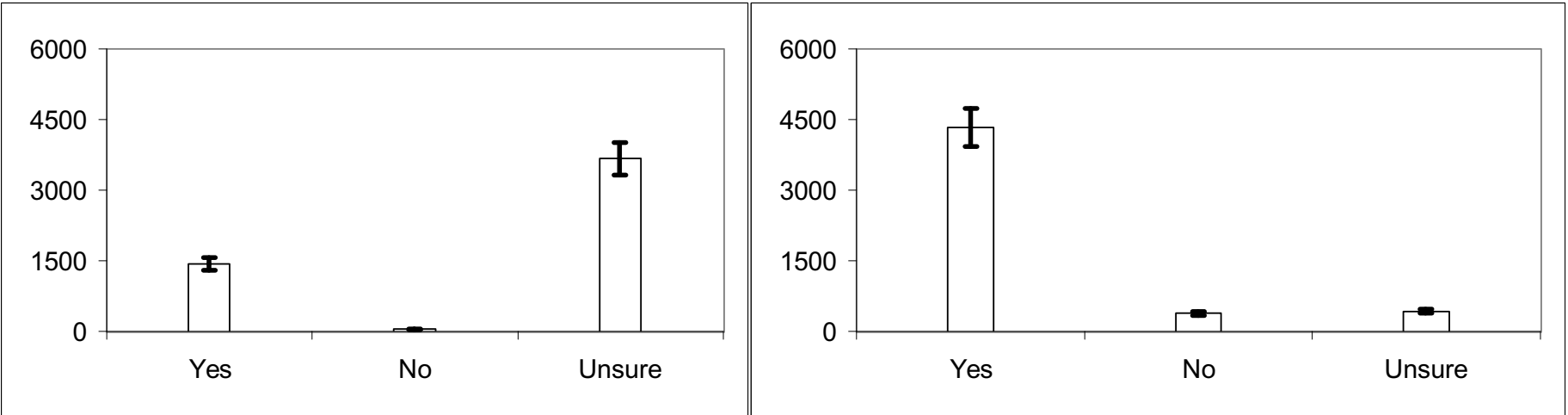
			Yes			No			Unsure		
4.5	Believe HIV only spread during sex	9.2%	1261	1388	1516	3072	3384	3695	336	370	404



			Yes			No			Unsure		
4.6	Believe it unsafe to work/live with HIV+	9.3%	429	473	517	3811	4201	4592	429	473	517

Survey Question (Abbreviated)	CI	LCL	Mean	UCL	LCL	Mean	UCL	LCL	Mean	UCL
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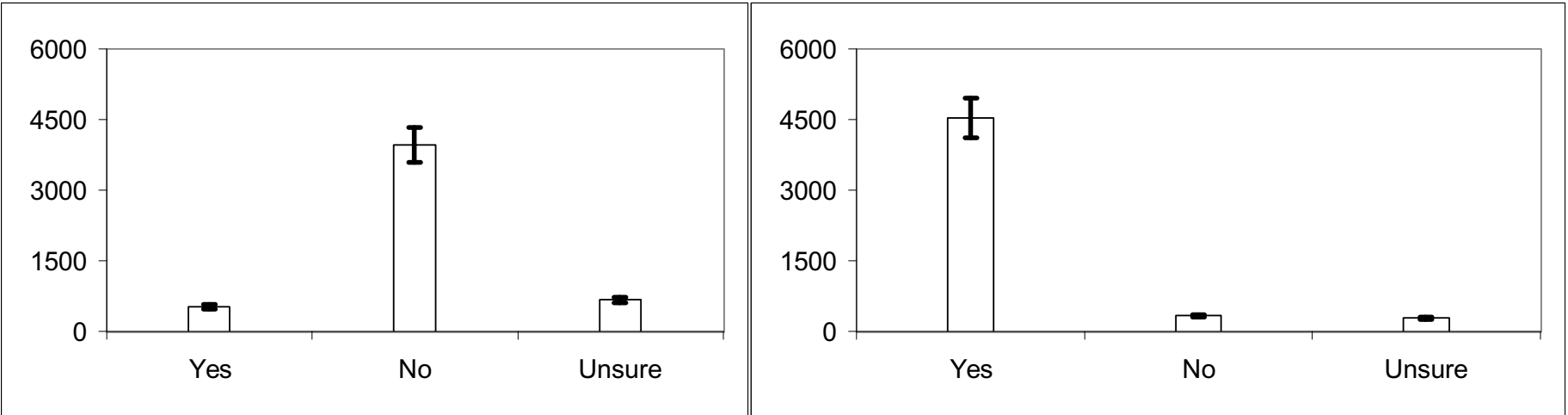
			Yes			No			Unsure		
4.7	Believe many at VWSA are HIV+	9.3%	1297	1430	1563	42	46	51	3326	3667	4008



			Yes			No			Unsure		
4.8	Believe HIV+ people still part social	9.3%	3932	4335	4738	345	381	416	387	427	467

Survey Question (Abbreviated)	CI	LCL	Mean	UCL	LCL	Mean	UCL	LCL	Mean	UCL
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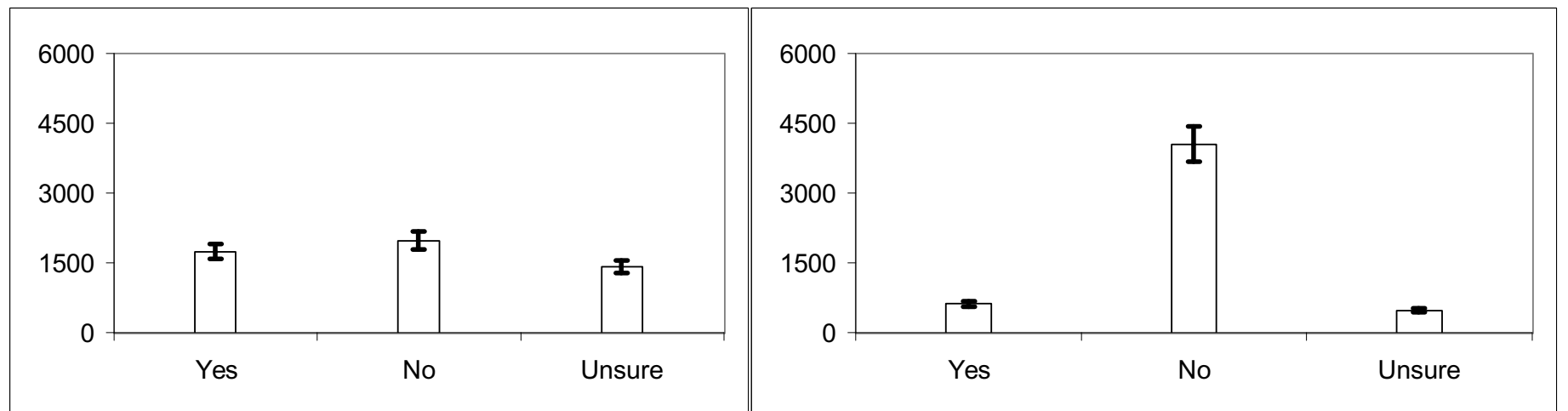
			Yes			No			Unsure		
4.9	Believe no test needed to see HIV+	9.3%	476	525	573	3587	3955	4322	606	669	731



			Yes			No			Unsure		
4.1	Believe condoms reduce risk	9.3%	4109	4531	4952	299	329	360	257	283	309

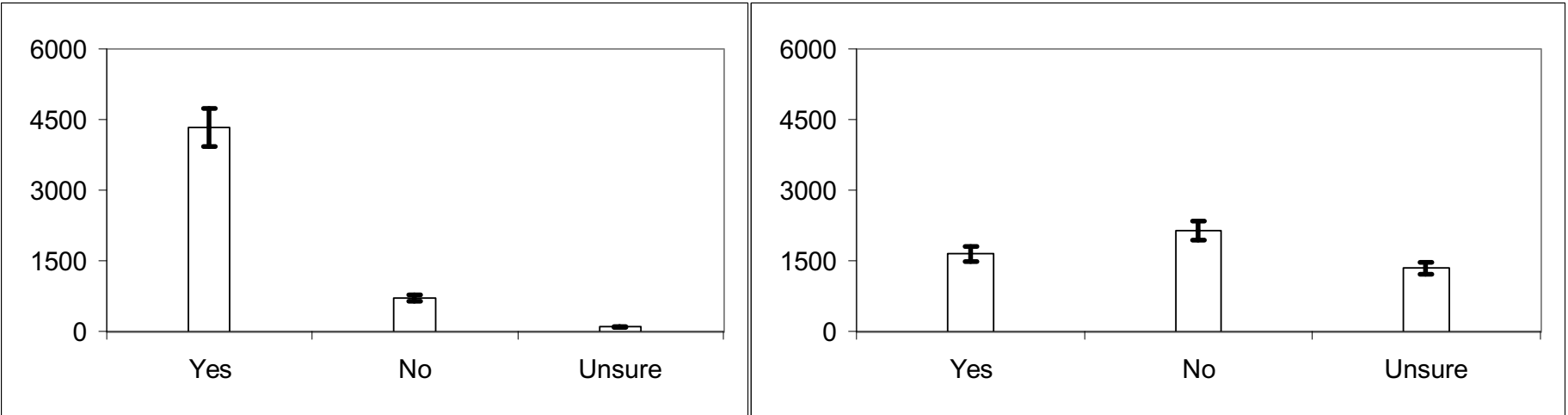
Survey Question (Abbreviated)	CI	LCL	Mean	UCL	LCL	Mean	UCL	LCL	Mean	UCL
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			Yes			No			Unsure		
4.11	Believe babies of HIV+ women +	9.3%	1581	1743	1905	1796	1980	2164	1283	1414	1546



			Yes			No			Unsure		
4.12	Believe blaming HIV+ people fair	9.3%	560	617	674	3671	4047	4424	434	478	523

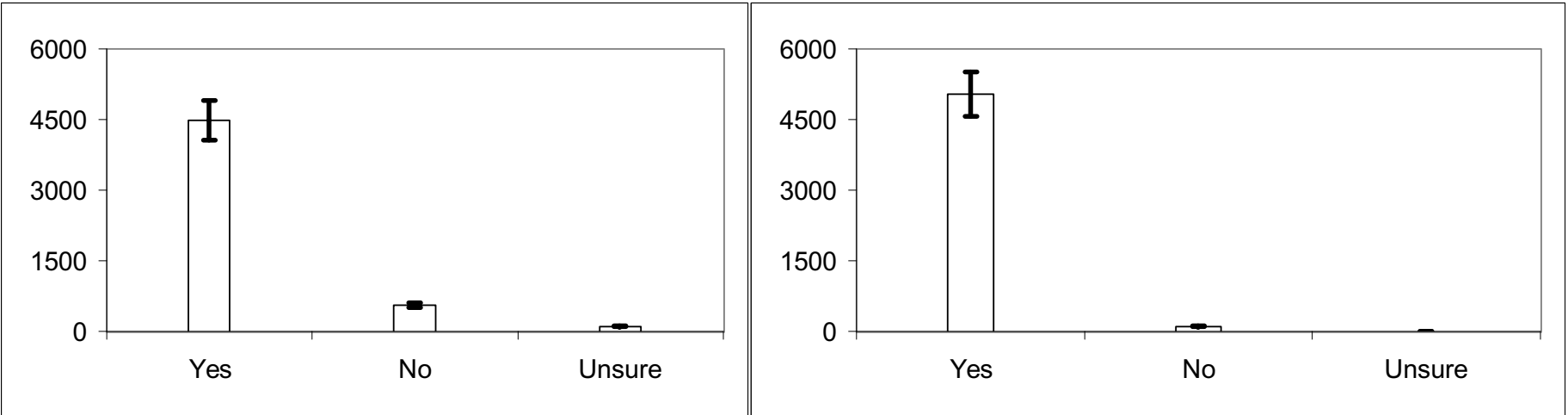
Survey Question (Abbreviated)		CI	LCL	Mean	UCL	LCL	Mean	UCL	LCL	Mean	UCL
				Yes			No			Unsure	
4.13	Know where to get HIV help	9.3%	3932	4335	4738	648	715	781	89	98	107



				Yes			No			Unsure	
4.14	Know lubricants can damage condoms	9.6%	1488	1646	1804	1939	2144	2350	1218	1347	1477

Survey Question (Abbreviated)	CI	LCL	Mean	UCL	LCL	Mean	UCL	LCL	Mean	UCL
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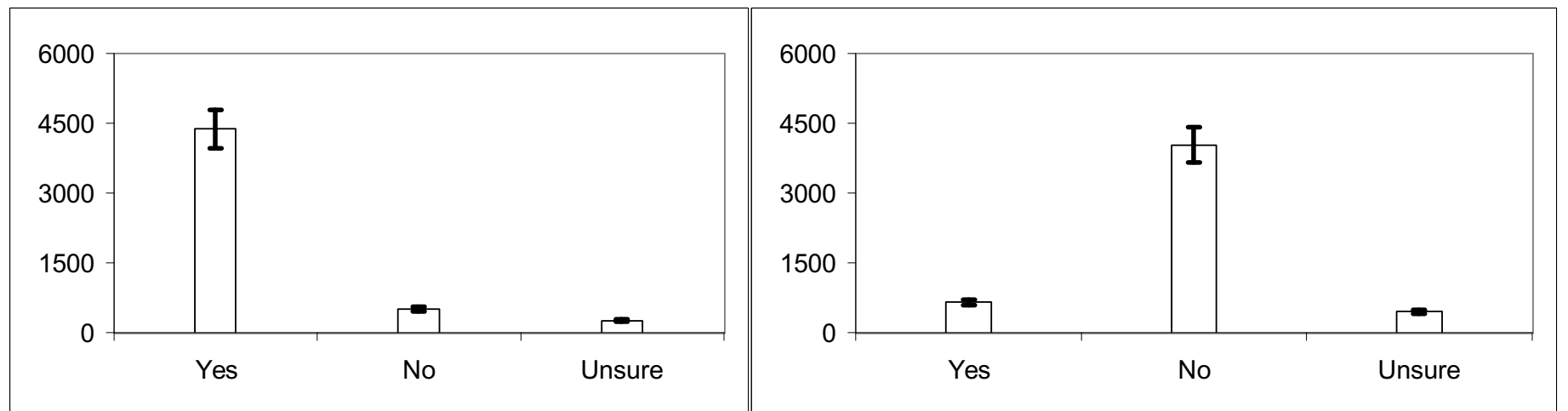
			Yes			No			Unsure		
5.1	believe VWSA should donate condoms	9.6%	4058	4489	4920	502	555	609	93	103	113



			Yes			No			Unsure		
5.2	Believe VWSA should teach workforce	9.6%	4556	5040	5523	93	103	113	0	0	0

Survey Question (Abbreviated)	CI	LCL	Mean	UCL	LCL	Mean	UCL	LCL	Mean	UCL
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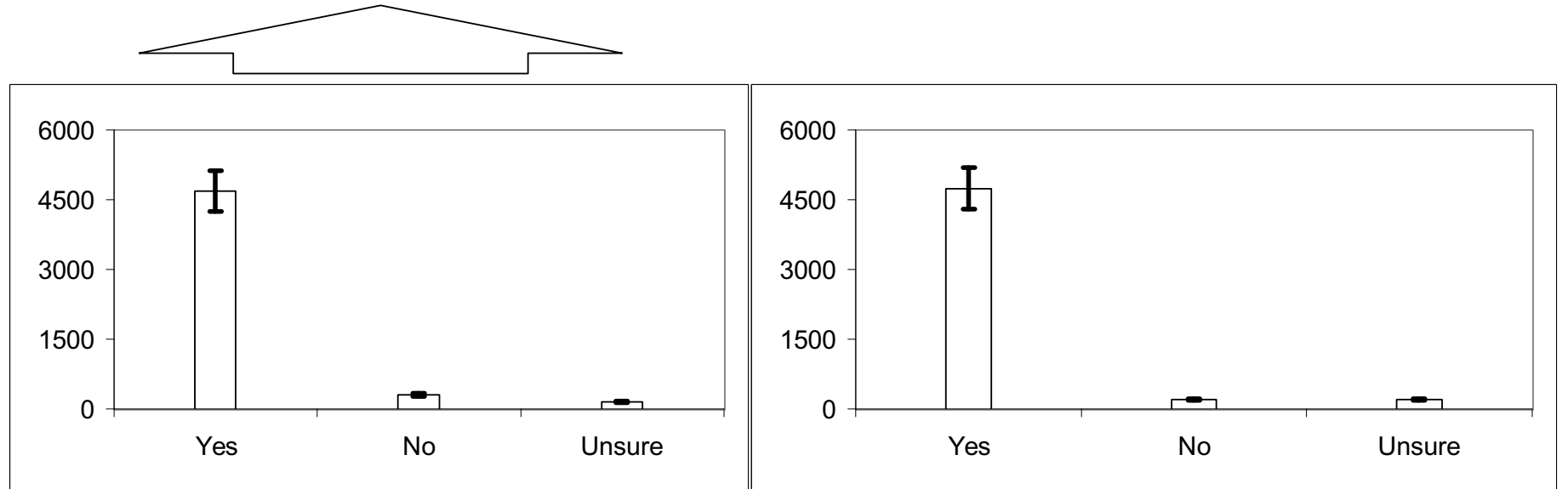
			Yes			No			Unsure		
5.3	Believe VWSA should help community	9.7%	3952	4376	4801	460	509	558	232	257	282



			Yes			No			Unsure		
5.4	Think VWSA should treat + differently	9.6%	590	653	716	3645	4032	4419	409	453	496

Survey Question (Abbreviated)	CI	LCL	Mean	UCL	LCL	Mean	UCL	LCL	Mean	UCL
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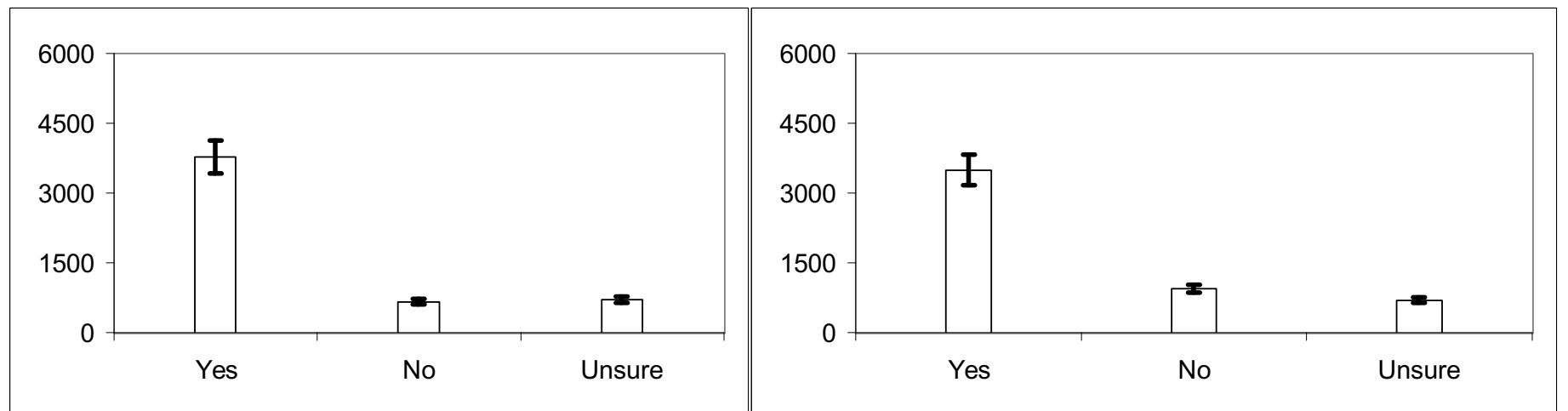
			Yes			No			Unsure		
5.5	Think VW should offer counselling	9.6%	4240	4690	5140	274	303	333	135	149	163



			Yes			No			Unsure		
5.6	Think VWSA should offer voluntary tests	9.6%	4286	4741	5197	181	201	220	181	201	220

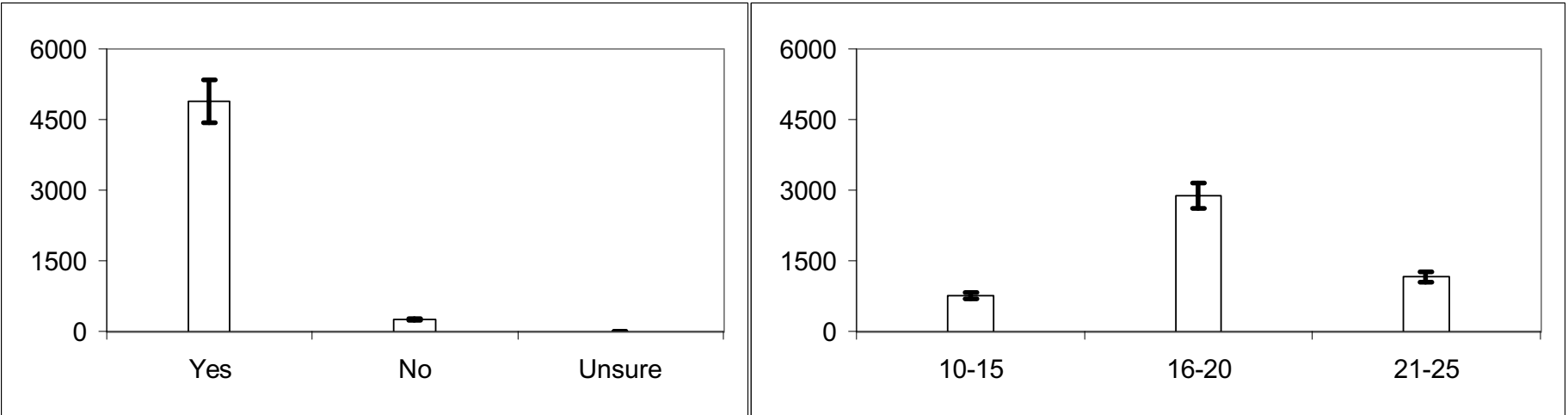
Survey Question (Abbreviated)	CI	LCL	Mean	UCL	LCL	Mean	UCL	LCL	Mean	UCL
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			Yes			No			Unsure		
5.7	Think VWSA should provide HIV drugs	9.7%	3404	3769	4135	599	663	728	645	715	784



			Yes			No			Unsure		
5.8	Believe home based care a good idea	9.6%	3161	3497	3833	855	946	1037	632	699	767

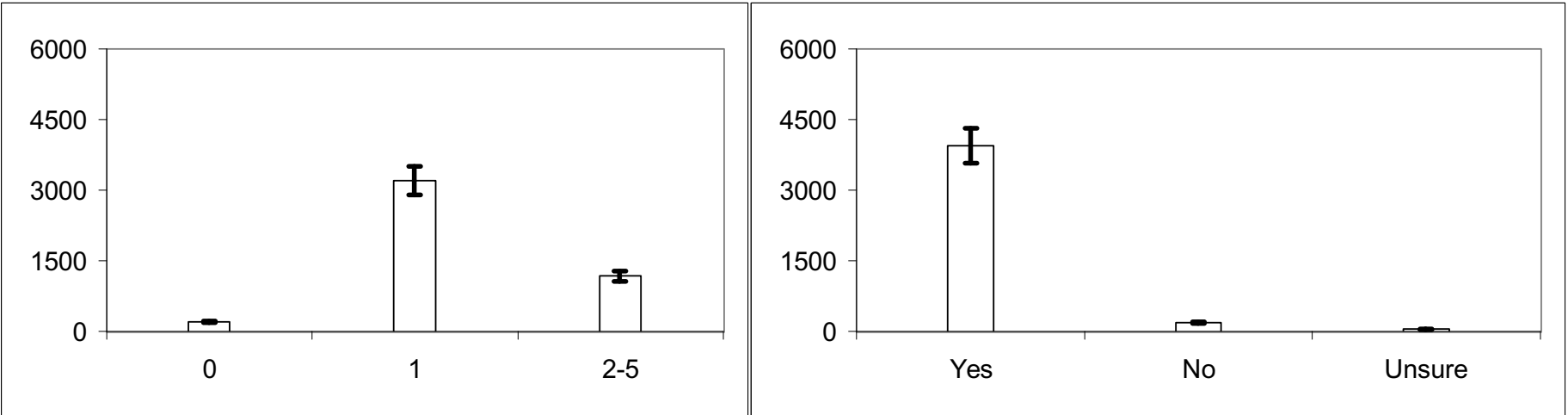
Survey Question (Abbreviated)		CI	LCL	Mean	UCL	LCL	Mean	UCL	LCL	Mean	UCL
				Yes			No			Unsure	
6.1	Have had sex	9.6%	4421	4891	5360	228	252	276	0	0	0



				10-15			16-20			21-25	
6.2	Ate of first sexual intercourse	9.5%	684	756	828	2602	2875	3148	1047	1157	1267

Survey Question (Abbreviated)	CI	LCL	Mean	UCL	LCL	Mean	UCL	LCL	Mean	UCL
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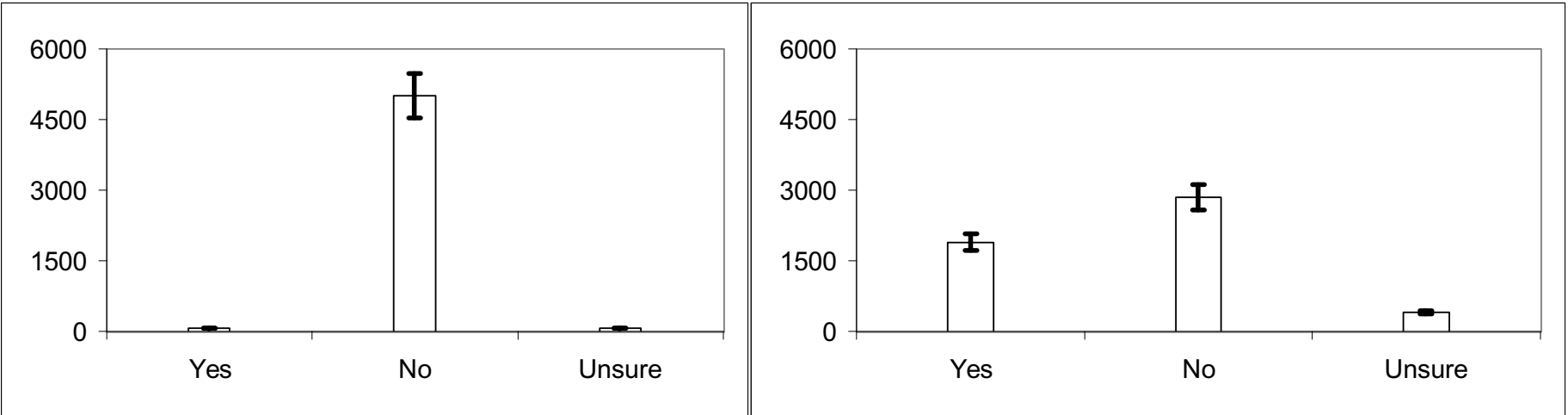
			0			1			2-5		
6.3	Sex partners in past year	9.7%	186	206	226	2898	3209	3520	1059	1172	1286



			Yes			No			Unsure		
6.4	Heterosexual man	10.2%	3537	3939	4341	166	185	204	42	46	51

Survey Question (Abbreviated)	CI	LCL	Mean	UCL	LCL	Mean	UCL	LCL	Mean	UCL
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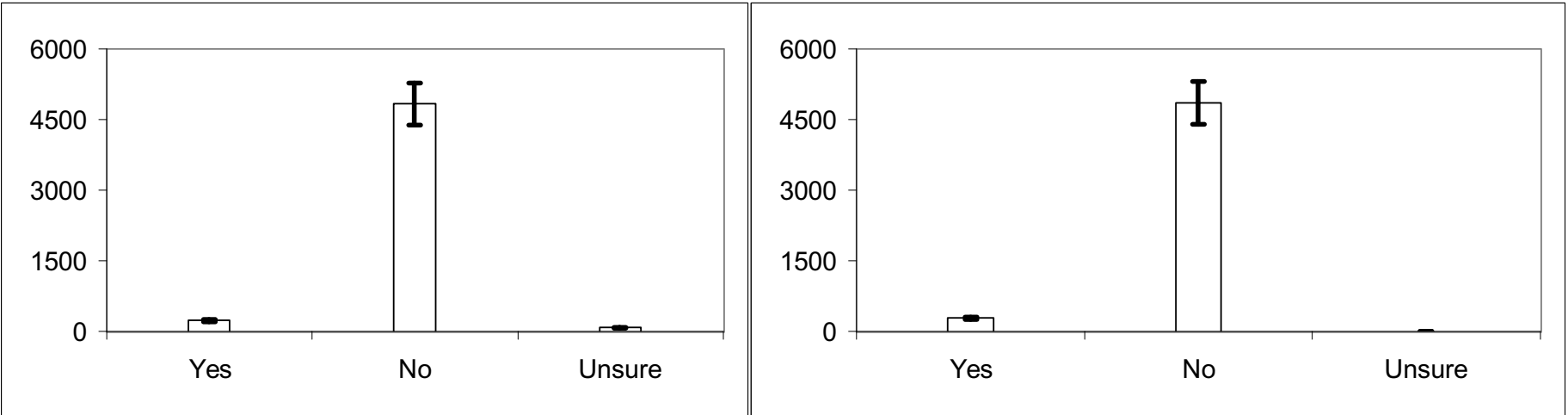
			Yes			No			Unsure		
6.5	Homosexual man	11.1%	59	67	74	4453	5009	5565	59	67	74



			Yes			No			Unsure		
6.6	Heterosexual women	15.8%	1593	1892	2191	2394	2844	3293	342	406	470

Survey Question (Abbreviated)	CI	LCL	Mean	UCL	LCL	Mean	UCL	LCL	Mean	UCL
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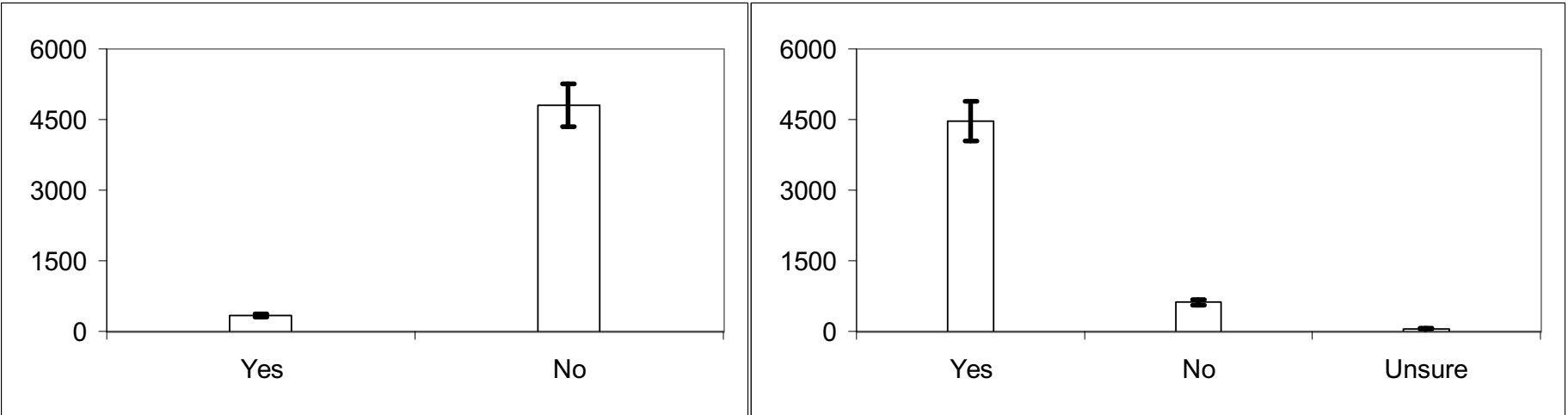
			Yes			No			Unsure		
6.7	Bisexual	12.0%	204	231	259	4249	4829	5408	68	77	86



			Yes			No			Unsure		
6.8	Have taken money for sex	10.2%	254	283	312	4364	4860	5355	0	0	0

Survey Question (Abbreviated)	CI	LCL	Mean	UCL	LCL	Mean	UCL	LCL	Mean	UCL
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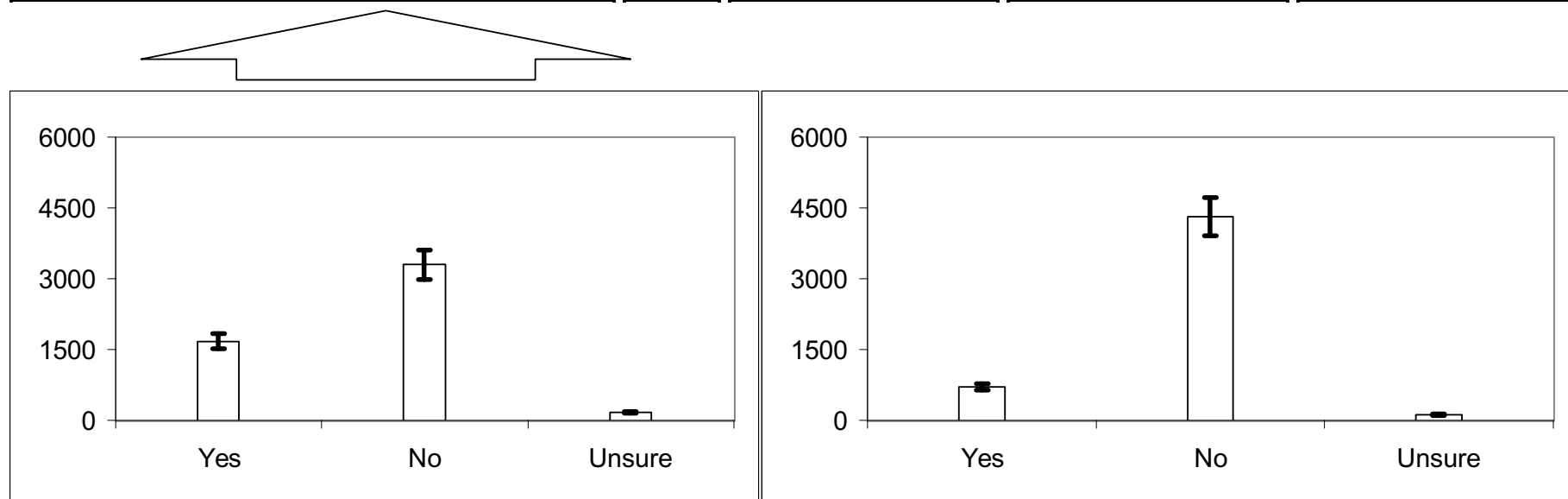
			Yes			No			Unsure		
6.9	Have paid for sex	10.1%	301	334	368	4323	4808	5294	0	0	0



			Yes			No			Unsure		
6.1	Have sex without a condom	10.2%	4008	4464	4919	559	622	686	51	57	62

Survey Question (Abbreviated)	CI	LCL	Mean	UCL	LCL	Mean	UCL	LCL	Mean	UCL
-------------------------------	----	-----	------	-----	-----	------	-----	-----	------	-----

			Yes			No			Unsure		
6.11	Mind using condoms	10.1%	1507	1676	1846	2963	3296	3629	153	170	187



			Yes			No			Unsure		
6.12	Have used lubricant with a condom	10.4%	636	710	783	3866	4315	4763	106	118	131

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