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The Costs and Perceived Quality of Care for People Living with HIV/ AIDS in the Western Cape Province in South Africa

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Partnerships for Health Reform
PHR

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Mission

The Partnerships for Health Reform (PHR) Project seeks to improve people's health in low- and middle-income countries by supporting health sector reforms that ensure equitable access to efficient, sustainable, quality health care services. In partnership with local stakeholders, PHR promotes an integrated approach to health reform and builds capacity in the following key areas:

- *better informed and more participatory policy processes in health sector reform;*
- *more equitable and sustainable health financing systems;*
- *improved incentives within health systems to encourage agents to use and deliver efficient and quality health services; and*
- *enhanced organization and management of health care systems and institutions to support specific health sector reforms.*

PHR advances knowledge and methodologies to develop, implement, and monitor health reforms and their impact, and promotes the exchange of information on critical health reform issues.

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Abstract

A report by the United National Development Programme (1998) indicates that "South Africa is currently experiencing one of the most rapidly progressing HIV epidemics in the world." The majority of South Africans are dependent on the public health system, which is straining under the impact of the epidemic. The aim of this study is to evaluate the costs of care for people with HIV/AIDS at the different levels of care in the Western Cape metropolitan area and the patients' perception of care.

A total of 350 HIV/AIDS patients were interviewed: 64 percent were women; approximately 25 percent of these women were between the ages of 16 and 26; 42 percent lived in an informal dwelling; 30 percent had only a primary level education; almost half of them were unemployed; and the majority reported a monthly income of less than R1000.

Across disease stages and different HIV-related conditions, costs of care were significantly higher at the hospital level than at the lower levels. A large number of terminal Stage 4 inpatients could have been discharged sooner to hospice services and home-based care. Several of the respondents were readmitted with reactivated tuberculosis (TB), suggesting poor compliance with TB treatment at the primary levels.

Overall, respondents were generally satisfied with the health services they received. Dissatisfaction with the health services related mainly to the provision of "inadequate and ineffective drugs," poor staff attitudes, and fears of discrimination and confidentiality being compromised by staff. To avoid having their HIV status discovered, patients sometimes sought care further away from home. Changing attitudes on the part of the health care providers and communities is crucial if barriers are to be overcome.

A key recommendation based on study findings is to improve the management of TB at all levels, and this is necessary if expensive secondary and tertiary inpatient costs are to be reduced. In addition, the development of standard treatment guidelines for the management of those infected with HIV is essential. This will assist in ensuring that early diagnosis and appropriate treatment of patients are conducted at the appropriate levels of care. Improved knowledge and awareness of HIV/AIDS is critical if discrimination against those with HIV/AIDS is to be reduced, if not eliminated, in communities and health care facilities

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Acronyms

AIDS	Acquired Immune Deficiency Syndrome
ALOS	Average Length of Stay
CDC	Centre for Disease Control
CHC	Community Health Centre
Conradie INP	Conradie Hospital Inpatients
Conradie OPD	Conradie Hospital Outpatients
CSIR	Council for Scientific and Industrial Research
DOTS	Directly Observed Treatment
FBC	Full Blood Count
GIT	Gastro-intestinal Tract
GPs	General Practitioner
GSH INP	Groote Schuur Hospital Inpatients
GSH OPD	Groote Schuur Hospital Outpatient
HIV	Human Immunodeficiency Syndrome
INH	Isoniasid
NDoH	National Department of Health
OPD	Outpatient Department
PAWC	Provincial Administration of the Western Cape
PHC	Primary Health Care
PHR	Partnerships for Health Reform Project (USAID)
PTB	Pulmonary Tuberculosis
STD	Sexually Transmitted Disease
TB	Tuberculosis
UCT	University of Cape Town
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
WHO	World Health Organisation

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Foreword

Part of the mission of the Partnerships for Health Reform Project (PHR) is to advance "knowledge and methodologies to develop, implement, and monitor health reforms and their impact." This goal is addressed not only through PHR's technical assistance work but also through its Applied Research program, designed to complement and support technical assistance activities. The main objective of the Applied Research program is to prepare and implement an agenda of research that will advance the knowledge about health sector reform at the global and individual country levels.

An important component of PHR's applied research is the Small Applied Research (SAR) program. SAR grants are awarded, on a competitive basis, to developing-country research institutions, individuals, and non-profit organizations to study policy-relevant issues in the realm of health sector reform. The SAR program has twin objectives: to provide data and analyses relevant to policy concerns in the researcher's own country, and to help strengthen the health policy research capacity of developing country organizations. While PHR provides technical advice and support to the SAR grantees, the content and conclusions in the final research reports are the responsibility of the grantees. They do not necessarily reflect the views of USAID or PHR.

A total of 16 small research grants have been awarded to researchers throughout the developing world. Topics studied include health financing strategies, the role of the private sector in health care delivery, and the efficiency of public health facilities.

SAR grant recipients are encouraged to disseminate the findings of their work locally. In addition, final reports of the SAR research studies are available from the PHR Resource Center and via the PHR website. A summary of the findings of each study are also disseminated through the PHR "in brief" series.

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Dr. R. Neil Soderlund (University of Witswatersrand). "The Design of a Low Cost Insurance Package."

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Mathias L. Kamugisha (National Institute for Medical Research- Amani Research Center). “Health Financing Reform in Tanzania: Appropriate Payment Mechanism for the Poor and Vulnerable Groups in Korogwe District, Northeastern Tanzania.”

Dr. Joses Kirigia, Dr. Di McIntyre (University of Cape Town Health Economics Unit, Department of Community Health). “A Cost-Effectiveness Analysis of AIDS Patient Care in Western Cape Province.”

Executive Summary

A report by the United Nations Development Programme (1998) indicates that "South Africa is currently experiencing one of the most rapidly progressing HIV epidemics in the world." The tenth annual National Human Immunodeficiency Syndrome (HIV) survey has indicated a prevalence of 22.4 percent of women attending antenatal clinics in public health facilities as being HIV positive. In the Western Cape, where the study was conducted, HIV prevalence has increased by 36.5 percent between 1998 and 1999. This increase has been highest in areas of poorer socioeconomic status. In South Africa, the majority of people are dependent on the public health system, and the strain on the health services has increased as the number of HIV infections increases. Moreover, the reemergence of tuberculosis (TB) as a co-infection with HIV is likely to place an additional burden on an already resource-strapped health care system. Under these circumstances, the cost-effective care of patients with HIV/AIDS at the appropriate levels is critical. In the absence of treatment guidelines, evaluating performance compliance is difficult. As a result, this study could only assess quality of care from the patient's point of view. The aim of this study was to evaluate the costs of care for people with HIV/IAIDS at the different levels of care in the Western Cape and patients' perception of care.

The study was based in the Cape Town metropolitan area. The sites included Groote Schuur Hospital (inpatients and outpatient departments (OPD)), Conradie Hospital (inpatients and OPDs), and three primary level facilities. The sample included all patients diagnosed with HIV/AIDS, excluding newly diagnosed cases. Patient perception of quality of care was derived from patient exit interviews. The costs (recurrent and capital) of HIV/AIDS care and patient costs in relation to transport were determined.

A total of 350 HIV/AIDS patients were interviewed (200 inpatients, 150 primary level, and OPD patients). Of the 350 respondents, 64 percent were women; 59 percent of the women were single; approximately one-quarter of them were between the ages of 16 and 26; 42 percent lived in an informal dwelling; 30 percent had only a primary level education; almost half of them were unemployed; and the majority reported a monthly income of less than R1,000. Of the total number of respondents, 64 percent were categorized as stage 3 or 4 patients. Of these, 116 presented with TB and 51 of them were diagnosed with pulmonary TB. Average length of stay was approximately 7.8 days at Groote Schuur Hospital (GSH) and 8.1 days at Conradie Hospital).

Average cost per admission was R5,238.79 at GSH and R4,071.15 at Conradie Hhospital. The cost per inpatient day was R673.37 at GSH) and R500.14 at Conradie. Nonpatient-specific inpatient costs (excluding drugs, laboratory, and radiology) were approximately 85 percent of total costs. Across disease stages and different HIV-related conditions, costs of care were significantly higher at the hospital level than the lower levels of care.

On average, respondents travelling to the primary level facilities, OPDs, and hospital inpatients paid R9.84, R12.54, and R21.52, respectively, for transport. Among the respondents from the primary level facilities, the hospitals and general practitioners were the most frequently visited alternative health service providers. Reasons for visiting other providers included shorter queues, less waiting time, more medication, better quality care, friendlier staff, and anonymity. Patients sometimes sought care further away from home to avoid having their HIV status discovered. Overall, respondents indicated that they were satisfied with the health services that they received. Inadequate and ineffective drugs were often cited as reasons for dissatisfaction with the health services. Poor

staff attitudes and fears over discrimination and confidentiality being compromised by staff were also raised.

Costs of care across different stages and HIV-related conditions were significantly lower at the primary level facilities. A large number of terminal Stage 4 inpatients could have been discharged sooner to hospice services and home-based care. Several of the respondents were readmitted with reactivated TB, suggesting poor compliance with TB treatment at the primary levels.

Quality of care as well as patients seeking anonymity often meant that patients sought care at facilities that were not necessarily closer to their homes. With regard to the issue of anonymity, patients might often bypass facilities closer to home or work, or not seek care at all, to avoid their HIV status being discovered. In some instances, patients also feared discrimination from the health workers. A change in attitude on the part of the health care providers and communities is crucial if barriers are to be overcome.

The following are key recommendations based on study findings:

> The improved management of TB at all levels is critical. Close collaboration among the respective departments in the National Department of Health is essential. The early discharge of these patients to inpatient TB treatment facilities is important in reducing expensive secondary and tertiary inpatient costs.

> The development of standard treatment guidelines for the management of those infected with HIV is essential. This will assist in ensuring the early diagnosis and appropriate treatment of patients is carried out at the appropriate levels of care.

> Improved knowledge and awareness of HIV/AIDS is critical if discrimination by communities and health care workers against those with HIV/AIDS is to be reduced, if not eliminated.

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1. Introduction

1.1 Background

In the long-awaited "HIV/AIDS and STD Strategic Plan for South Africa: 2000-2005," Dr. Tshabalala-Msimang (1999) argued that, "HIV/AIDS is the most important challenge facing South Africa since the birth of our new democracy." Human Immunodeficiency Syndrome (HIV) is spread through infection, and if left untreated, leads to Acquired Immune Deficiency Syndrome (AIDS), within 5 to 10 years of infection (Nunn et al., 1997). Further Nunn et al. also argue that in Africa, HIV-infected people are 11 times more likely to die within five years. South Africa has the fastest growing epidemic and accounts for one in seven new infections on the African continent (UNAIDS 1998). This is borne out by statistics compiled by UNAIDS (1999), which indicate that by the end of 1999, South Africa had an estimated 4.2 million people infected with HIV/AIDS – the highest number of people living with HIV/AIDS in the world. This rapidly growing epidemic is further indicated by annual antenatal statistics, which show a steady increase in the prevalence of HIV/AIDS among pregnant women receiving antenatal services. The average incidence among pregnant women seeking antenatal care in South Africa increased from 0.7 percent in 1990 to 22.4 percent in 1999 (National Department of Health 1999). In KwaZulu-Natal where the epidemic has been the most severe, prevalence rates were as high as 32.5 percent.

Of the nine provinces in South Africa, the Western Cape has the lowest prevalence of HIV infection compared with the rest of the country (7.1 percent in 1999). However, this percentage is expected to rise rapidly. Prevalence of HIV/AIDS among antenatal clinic attendees for the whole Western Cape province has increased from 3 percent in 1996 to 5 percent in 1998, and is doubling every 12 months, especially in regions with low-income and peri-urban townships. In two such townships, namely Guguletu and Khayelitsha, National Department of Health (NDoH) (1999) antenatal surveys have shown that prevalence has increased from 13 percent and 14 percent in 1998 to 18 percent and 19 percent in 1999, respectively. Therefore, as the epidemic grows, the Western Cape is likely to mirror the trends of the worst hit provinces (e.g., KwaZulu-Natal).

Although there is no known cure for the HIV infection, various drugs are available (anti-retrovirals) that can reduce viral replication. HIV is a potentially lethal infection that can cause much morbidity and mortality, and it affects mainly the young, productive members of communities. It is anticipated that the care of HIV-infected individuals will consume large amounts of South Africa's resources as the number of infected individuals continues to rise. According to the NDoH, approximately 1,700 people in South Africa are infected with HIV daily.

Health care is not limited to those individuals living with AIDS (WHO Stage 4), but is required as soon as a person is diagnosed with the HIV infection (seroconversion is often missed by both patients and the medical fraternity). Because of a weakened immune system, a person infected with HIV is more vulnerable to opportunistic infections such as tuberculosis (TB) and, as a result, will require ongoing comprehensive compassionate care. Caring for people with TB is relatively expensive, and since people who have HIV/AIDS frequently develop secondary infection with TB, this poses a significant burden on existing health services. The HIV/AIDS epidemic is increasingly

placing a heavy cost burden on health care facilities in South Africa (Adler and Qulo 1999). The economic cost of providing this care will be rivalled only by the cost of lost productivity, due to potential years of life lost through HIV/AIDS. In the Western Cape the cost of adequate comprehensive care for people with HIV/AIDS is likely to be compounded by the already high prevalence of TB.

The resources available for HIV/AIDS treatment and prevention are limited. Thus, it is vital that the health facilities and programmes caring for HIV/AIDS patients collect information on their costs (operating costs, capital costs, and in-service training costs) and the consequences (outputs). Such information is urgently needed for budgeting, planning, accountability, and efficiency evaluations. Health facility and programme budgets set out the activities planned for the future and outline their expected input requirements. Collection of quality data on the costs of resources used in a health facility would help Department of Health planners to better predict future budgetary demands.

Health facility and programme managers are accountable to the government for the resources they use. Thus, to meet the obligations of accountability they need to know how they have spent the finances available to them. This will ensure that the money they control has been spent as intended (Creese and Parker 1994).

Information on health facility and programme costs is also necessary to keep track of the proportion of recurrent costs recovered through user fees. If health facilities and programmes will be required to cover all recurrent costs through fees for certain categories of patients, the average recurrent cost per unit of service will provide a good guide on how much to charge.

The health facility and programme costs can be used in several ways to further efficiency objectives. First, cost profiles highlight the input categories that health managers should focus on in further studies of efficiency: the larger the cost category, the more attention it should be given because the potential for savings is greater. Secondly, by comparing cost profiles of similar health facilities or programmes, health care managers can identify facilities or programmes with potential for efficiency improvement with reorganisation of resource allocation. Thirdly, comparisons of total costs and unit costs among health facilities or programmes at a given point in time (and over time) can be used to identify facilities or programmes with the highest or the lowest unit costs (Mills, 1990; Creese and Parker 1994). Lastly, the cost estimates if used within economic evaluation framework could identify areas of potential efficiency improvement.

1.2 Literature Review

This literature review is divided into three sections. The first section describes the global HIV/AIDS epidemic with a focus on developing countries, especially sub-Saharan Africa. The second section focuses on South Africa and briefly describes the impact of the HIV/AIDS epidemic on the demographics of the country and the implications for some of the key sectors, with the focus being on the health sector. A review of studies that have evaluated the costs of providing care for those with HIV/AIDS is also provided. The third section highlights the key issues of costing and quality of care relevant to this study.

1.2.1 Global Trends and Impact of the HIV/AIDS Epidemic

At the end of 1999, UNAIDS and the World Health Organization estimated that approximately 34.3 million adults and children were living with HIV/AIDS, and the vast majority of them (approximately 95 percent) were located in the developing world. Even more startling is that sub-Saharan Africa is home to almost 71 percent of the total number of adults and children infected. Many individuals infected in the sub-Saharan African region are likely to die relatively quickly from AIDS, since the majority of them have little or no access to basic drugs necessary for treating opportunistic infections associated with HIV/AIDS let alone the more expensive antiretrovirals. These populations also suffer from chronic malnutrition, poor sanitation, and inadequate access to clean water, leading to increased susceptibility to environmental pathogens including parasites. In addition, many of these sub-Saharan countries face extremely poor resources and inadequate health services. Furthermore, because those primarily affected by the disease are from the most economically active age group, the epidemic has devastating implications for socioeconomic development in a region that has been characterised by droughts, poverty, falling commodity prices, stagnating economic growth, and economic reforms in the form of structural adjustment programs that include increasing privatization and decreased spending on essential social services.

The obstacles to clinically acceptable and humane care are significantly greater in developing countries than in developed countries (N'galy et al., 1990). For those who are already infected, provision of adequate and appropriate health services is significantly compromised by rapidly increasing resource constraints. Many African countries are spending less than US$5 per capita per year on drugs, and only one-third of sub-Saharan Africa's population has regular access to basic essential drugs (Foster 1990).

1.2.1.1 Health Care Resource Use and the Cost of Managing HIV/AIDS

Much of the literature on the costs of care for those with HIV/AIDS has tended to focus on developed countries. However, the results of some of these studies are relevant to discussions on the costs of care. For example, it was discovered that the management of an AIDS patient in the United Kingdom was four times as expensive as the average cost of care for a non-AIDS patient (Nageswaran et al., 1995). As early as 1988 it was estimated that the lifetime costs of treating those infected ranged from US$132 to US$1585 in Zaire and US$104 to US$631 in Tanzania (Ober et al., 1988).

Ayres and Binswanger (1999) argued that those infected with HIV/AIDS occupy approximately 20 to 50 percent of hospital beds in sub-Saharan African countries. In 1987, 42 percent of all patients hospitalised in 15 Uganadan hospitals were HIV positive. Eight percent of these had severe symptoms of HIV infections and AIDS. Floyd and Gilks (1996) compared patient admissions at Kenyatta National Hospital in Kenya in 1988 and 1989 with those in 1992. They found that the number of HIV-positive admissions had more than doubled over this period, accompanied by an 18 percent drop in HIV-negative admissions. The authors suggested that this occurred because either the epidemic was making it more difficult for those who were uninfected to obtain care, or the government's attempts to ration the allocation of increasingly scarce beds changed the mix of HIV-negative beds towards those with more severe illnesses.

The issue of displacement of beds by HIV-positive patients has been raised repeatedly in the literature (World Bank 1997, UNDP 1998). Ngaly et al. (1990) concluded that over 50 percent of

HIV-negative patients had been displaced after finding that 50 percent of the medical wards in Mama Yemo Hospital in Zaire were occupied by HIV-positive patients. The next section discusses these issues in relation to the HIV/AIDS epidemic in South Africa.

1.2.2 HIV/AIDS in South Africa

1.2.2.1 Background of HIV/AIDS in South Africa

A report by UNDP (1998) indicates that "South Africa is currently experiencing one of the most rapidly progressing HIV epidemics in the world." It has been estimated that as many as 1,500 people are infected with HIV daily, which will cause the average life expectancy to drop from 60 years to 40 years between 1998 and 2008 (Adler and Qulo 1999). HIV prevalence among women attending antenatal clinics increased from 17 percent to 22.8 percent in 1998, an increase of 34 percent,. The prevalence is most advanced in KwaZulu Natal (26.9 percent) (Adler and Qulo 1999). Although some provinces, for example the Western Cape, had a relatively lower prevalence rate than others, Floyd (1997) warns that this province is "vulnerable to rapid spread of HIV in the near future," noting that the rate of HIV prevalence in the Western Cape increased by 36.5 percent between 1998 and 1999 (NDoH 1999).

TB is a very common initial presentation in South Africa, and the HIV/AIDS and TB infections are being dubbed the dual epidemic. Bamford (1999) warns that 40 to 50 percent of TB cases in South Africa are co-infected with HIV. In Hlabisa, in rural KwaZulu Natal, Wilkinson and Davies (1997) found that TB with HIV co-infection among adults rose from 8.7 percent in 1991 to 28.3 percent in 1995, and up to as high as approximately 70 percent in 1997. Equally alarming is that one-third of people infected with HIV are expected to contract TB before they die.

Although HIV infection has increased across all age groups, infection is particularly high among adults, at approximately 12 to 14 percent (Adler and Qulo 1999). At a macroeconomic level, since the epidemic affects mainly those who are most often the economically productive, it has adverse implications for the growth of the economy. This is reflected in "declining productivity, rising rates of absenteeism, loss of skilled and experienced labour" (UNDP 1998). For South Africa, the impact is even more devastating for those sectors that are highly labour intensive (e.g., mining). Productivity and the level of production will decline as mortality from HIV-related illnesses increases and outstrips the pace by which replacements can be trained (UNDP 1998).

Turning to the public sector, as the epidemic progresses, the demands on key social services will increase. Welfare payments in the form of disability grants are likely to increase with rising HIV infections. The capacity of the education sector to deliver and maintain an adequate level of services will be severely compromised as the number of teachers lost to HIV/AIDS increases. Similarly, defense, policing, and other service sectors will be severely affected, leading to poorer delivery of service. The implications for the health sector are discussed in the following paragraphs.

1.2.2.2 Implications for the Health Sector

The majority of South Africans are dependent on the public health system, as only about 20 to 25 percent of the population have access to private health care (Wolvardt 1997). The NDoH's response

to the epidemic, as with responses globally, has been essentially to focus on preventative intervention programmes and the treatment of some opportunistic infections.

The importance of prevention, in the form of life skills, responsible sex education programmes at schools and youth centers, and mass communication strategies, is reflected in the National AIDS Plan, which the Ministry of Health adopted in 1994 (Whiteside and Barnett 1996). In the absence of a cure, combined with the potential for the epidemic to consume an increasingly larger proportion of the health sector budget, there is clearly sufficient justification for early and appropriate preventive and control measures. Sadly however, it is the controversial incidences and decisions by the NDoH that have received attention. Such incidences include the much publicised "Sarafina issue" (staged musical focusing on AIDS), the Minister of Health's controversial decision to only allow research projects related to vertical transmission, and the more recent attempts by the NDoH to make AIDS a notifiable disease.

However, one can argue that the least amount of progress has been made in the area of management and care of HIV/AIDS patients. With regard to the provision of care, the National AIDS Plan outlines the need for "stepping up STD (sexually transmitted disease) management" and the "development of guidelines for the provision of appropriate levels of care and support" (Whiteside and Barnett 1996). Many would consider this statement rather weak and inadequate considering that projections are that by 2005, HIV/AIDS has the potential to consume between 35 to 84 percent of the public health sector budget (Broomberg 1992). This would effectively reduce the amount of resources available for other health services and potentially other social sectors (e.g., education, welfare).

The NDoH has yet to release standard treatment guidelines for the management and care of HIV/AIDS infected patients at different levels of care. In the continued absence of treatment guidelines, those with HIV/AIDS may receive either very limited care or expensive treatment, which does little to improve either length or quality of life of those infected (UNDP 1998). Presently, the care of AIDS patients has been dominated by hospital care, with standards varying considerably across facilities (Floyd 1997).

The day-to-day care of HIV asymptotic and symptomatic patients could be more appropriately addressed at the primary health care (PHC) level. If an adequate primary care system is not in place, AIDS will continue to put a huge strain on the hospital system, as is being seen in KwaZulu Natal (Whiteside 1996). In Hlabisa Hospital in KwaZulu Natal, the total number of admissions increased by 57 percent from 7,204 in 1991 to 11,332 in 1997. A recent survey of admissions to the adult medical wards has indicated that approximately 55 percent of patients were HIV positive (UNDP 1998). This is perhaps one of the most important challenges facing the NDoH. As the number of those requiring care increases rapidly, additional strain will be placed increasingly on existing health facilities, particularly hospitals, as well as on staff who have to deal with numerous deaths in younger people.

1.2.2.3 Cost of Managing HIV/AIDS

In South Africa, a limited number of studies have attempted to quantify the costs, and perhaps more importantly the technical aspects of clinical care, associated with HIV/AIDS care. This is largely due to the fact that the management of care for those infected is palliative and that there are no treatment guidelines. In the absence of such guidelines, it is very difficult to assess performance compliance. Consequently, much of the literature has tended to focus on the costs of care without evaluating the effectiveness or the outcomes.

Broomberg and Reese (1992), who conducted one of the earliest studies estimating the costs of care, found that costs associated with a primary health care centre were almost 50 percent less than that of HIV outpatient care. Kinghorn et al. (1996), estimated the costs of inpatients and outpatients with HIV at Baragwanath Hospital in Gauteng. The main findings of the study were the following:

- Eighty percent of contacts at the medical outpatients could have been seen at a primary care site.
- At the outpatient level, investigations (30.26 percent), drugs (22.15 percent), and staff (21 percent) were the largest cost drivers.
- At the inpatient level, staff and overhead costs accounted for the majority of costs.
- As the disease progresses from asymptotic infection to periods of sickness and ill health, the risk of opportunistic infections becomes increasingly high, with a consequent increase in costs of care.

The finding that 80 percent of the patients could have been seen at the primary level needs further examination. This raises the question of why patients continue to bypass primary level services in favour of hospital care. In many areas, access to primary level services is poor, facilities are overcrowded and offer insufficient privacy, prompting patients to seek care through the hospital's outpatient department (Doherty et al. 1996).

Opportunistic infections continue to be the predominant cause of mortality and morbidity among patients with advanced HIV disease. The growing incidence of TB with HIV/AIDS is placing further strain on already overburdened health care facilities, thereby playing a significant role in overall costs. Kinghorn et al. (1996) argued that given the large costs associated with TB, TB prophylaxis and drugs for treating multi-drug resistance require careful cost-effectiveness evaluation. The authors further supported the WHO recommendation that TB services be integrated at the primary level with existing curative care services, in part to relieve the burden on the hospitals. This recommendation has been implemented at public health facilities in South Africa. The successful integration at the primary level hinges on the capacity and ability of the primary level services to absorb these patients.

It is clear that in South Africa, as in other developing countries, financial and human resources are already severely limited and will come under increasing strain as the epidemic progresses. It is within this context that economic evaluation, and in particular evaluating the costs and quality of care, has an important role to play in guiding policy makers among competing programmes.

1.2.3 Measuring Costs and Quality of Care for HIV/AIDS

1.2.3.1 Costs of Care

Cost-effectiveness analysis is becoming an increasingly popular method for evaluating the costs and the outcomes of different programmes. The costs in a health care setting refer to the value of resources used in the production of a health care programme, intervention, or specific services (Creese and Parker 1994). These include both operating and organising costs (e.g., health professionals' time, drugs, equipment, capital costs, and so forth) and those costs borne by the patients and their families (e.g., out-of-pocket expenses, time lost from work, and psychological costs).

In relation to cost-effectiveness, the consequences or the outcomes are measured by using indicators related to the change in health status. The outcome measure depends on the objective of the intervention or programme. If a prevention strategy is being evaluated, the chosen outcome measure is likely to be the number of infections averted. In the case of AIDS-related clinical care, a likely outcome might be that of opportunistic infections treated and cured (UNAIDS 1998). Cost and outcomes under cost-effectiveness are generally expressed as cost per case prevented, cost per life saved, or cost per year of life extended.

In South Africa, where there are no standard treatment guidelines for the management of patients with HIV/AIDS, treatment varies widely between facilities, providers, and areas. Further, since HIV/AIDS care is essentially palliative in nature, there is little room for evaluating effectiveness, for example in terms of the opportunistic infections prevented or treated, days saved from hospitalization, and so forth. This makes it almost impossible to evaluate the effectiveness and/or efficiency of different alternatives. Since it is not possible to determine primary outcome measures in evaluating a programme, it is suggested that intermediate outcomes be used together with a qualitative assessment. Quality of care is one such qualitative assessment.

1.2.3.2 Quality of Care

Available literature widely discusses issues relating to the definition, scope, and measurement of "quality of care" (Donabedian 1988; Ellis and Whittington 1993; Leger et al., 1992). Donabedian (1988) views quality of care as comprising two components, namely technical and interpersonal. Technical performance depends on the knowledge, judgement, and skill used in arriving at appropriate strategies of care. Interpersonal performance relates to the relationship between the doctor (and any other health care worker) and the patient. Donabedian (1988) argues that this process is the "vehicle by which technical care is implemented and on which its success depends." Interpersonal performance is just as important as technical performance but is much less predictable in its impact.

Patient satisfaction has been the main vehicle through which interpersonal performance has been evaluated. Some of the key factors influencing patient satisfaction include staff attitudes or interpersonal aspects of care, waiting and consultation times, general perception of different aspects of the health facility, hotel facilities for inpatients, and outcome of care received (Leger et al., 1994).

Despite their widespread use, patient satisfaction surveys have several limitations. Factors such as age, social class, sex, race, level of education, and type of medical insurance influence satisfaction. This might either be a function of care provided for different social groups, or it might reflect different expectations or different susceptibility to answering questions in a positive way (Ellis and Whittington 1993). It has also been argued that satisfaction with the interpersonal aspects of care is assessed more frequently than satisfaction with the technical aspects.

Notwithstanding these weaknesses, patient satisfaction surveys have several uses. They serve to identify problems and potential areas for improvement. They also provide an overall estimate of satisfaction with a given service or episode of care. They are sometimes used as part of an initiative in increasing participation in care (Ellis and Whittington 1993). Also, the inclusion of qualitative analysis can assist in bringing forth issues of a more sensitive nature, especially those relating to stigmatisation and discrimination. This is especially important in the context of HIV/AIDS, where people living with HIV/AIDS are continuously marginalised through social isolation and discrimination, particularly where awareness regarding the disease is poor. The implications are that "they are denied some of the basic human rights – like the right to work, access to basic health care, fair labour practice and privacy" (Provincial Administration: Western Cape Provincial Department of

Health 1997). In the context of these issues, patient satisfaction surveys become increasingly important as a tool in identifying barriers to seeking care, in addition to financial and time cost barriers.

1.3 Summary

Some of the key issues that emerge from the above literature review are as follows: As the HIV/AIDS epidemic gains momentum, increasing numbers of HIV-infected people will develop AIDS, and many of them will require expensive tertiary care. This, in turn, could displace HIV-negative patients from health facilities. The re-emergence of TB, as a co-infection with HIV, is likely to place an additional burden on already overburdened health care systems. In addition to the resource implication issues, this review also highlighted some of the quality of care issues relevant to the present study.

2. Methodology

In the Western Cape Province, public sector health facilities currently available for treating people with AIDS include secondary and tertiary inpatient hospitals, secondary and tertiary hospital outpatient departments (OPDs) (some with specialist HIV clinics), and primary level facilities, which include the community health centres and clinics. HIV specialist clinics are also provided at selected PHC clinics.

As previously outlined, no clinical guidelines for the management of patients with HIV/AIDS currently exist. In view of this, evaluating the effectiveness of services in relation to the provider's technical efficiency is very difficult. This has meant that the original aim and objectives of the study have had to be revised as outlined below.

The study focused on economic costs as opposed to the financial costs, where the latter narrowly concentrates on the monetary outlay of resources used. By adopting an economic perspective, the costs of resources that were not regarded as costs to the health facility (e.g., donated drugs) and the opportunity costs of capital outlays are also included. The study also focused on direct costs to the health services and costs incurred on the part of patients, which related mainly to transportation costs. With regard to time frame of the data collection, annual expenditure data and data based on patient episodes or visits were used to estimate provider costs, the details of which are outlined in Section 2.3.5. The main instruments used in collecting the required data were patient questionnaires, health facility personnel interviews, and chart abstraction forms for patients.

2.1 Aim

The aim of this study was to evaluate the economic costs to the health service providers and patients, and factors influencing patient satisfaction at the different levels of care.

2.2 Study Objectives

The aim of this study was to evaluate the economic costs to the health service providers and patients and to evaluate factors influencing patient satisfaction at the different levels of care.

The objectives were as follows:

1. Estimate the total direct costs to the health service providers and patients (e.g., transport costs) related to the treatment of HIV/AIDS per outpatient visit at the primary level facilities and hospital OPD

2. Estimate the total direct cost per inpatient admission to a tertiary hospital and a secondary hospital for patients with HIV/AIDS

3. Estimate the total direct costs of treating a patient with HIV/AIDS at different World Health

Organisation/U.S. Centers for Disease Control and Prevention (WHO/CDC) clinical stages for each of the different levels of care

4. Estimate the total direct costs of treating a patient with HIV/AIDS for each of the common HIV/AIDS-related conditions, for each of the different levels of care

5. Obtain the number of HIV/AIDS-related outpatient visits and admissions (and the average length of stay) by facility for use in estimating the total annual cost of treating persons with HIV/AIDS

6. Determine which is the least cost setting within which to care for HIV/AIDS patients

7. Identify factors influencing patient perception of quality of care.

2.3 Methods

The methods described fall into four main sections: the case definition, the sampling and selection of facilities and patients, the approach to assessing quality of care as perceived by the patients, and the costs of providing care for people with HIV/AIDS.

2.3.1 Case Definition

In terms of case definition, the study included all those patients who had been previously diagnosed with HIV/AIDS. The sample was categorised using two approaches (see Annexes B and C). The first approach was to categorise patients according to the WHO/CDC classification of patients into four clinical stages. Stage 1 includes patients who are asymptomatic and able to perform normal activities. Those in Stage 2 are symptomatic, have begun to show weight loss, but are still able to carry out normal activities. Stage 3 infections are those patients who are only able to carry out routine tasks with considerable difficulty, are bedridden for a significant amount of time, and present with various conditions that might include chronic diarrhoea, thrush, or candidiasis, among others. Stage 4 patients present with an AIDS-defining condition (e.g., extrapulmonary tuberculosis, HIV wasting syndrome, or Kaposi's sarcoma) and are bedridden for more than 50 percent of the day.

The second approach was to classify patients according to common conditions found in HIV/AIDS patients. This was considered necessary since patients are not only managed in accordance with the clinical stage of the disease but also in relation to the cognisance of their HIV-related conditions. Moreover, these conditions might overlap with the WHO staging system, and this has resource and cost implications. Based on discussions held with clinicians involved in public health settings and on previous studies (Kinghorn et al., 1996) conducted on the most frequently presenting HIV-related conditions, the following list of conditions was developed:

- Mucocutaneous (e.g., herpes zoster, folliculitis)
- Gastro-intestinal tract (GIT) (e.g., oral candidiasis, chronic diarrhoea)
- Pulmonary (e.g., TB, bacterial pneumonia)
- Neurology (e.g., peripheral neuropathy, meningitis, dementia)

- Sexually transmitted diseases (e.g., syphilis, herpes simplex).

Since TB is a very common initial presentation in South Africa, all patients presenting with TB were grouped together into a separate category.

2.3.2 Sampling and Selection of Facilities

This section describes both the selection of patients and the health facilities.

2.3.2.1 Sample Frame

The study was based in the Cape Town metropolitan area. The sample frame included all tertiary and secondary hospitals, hospital OPDs, and primary level facilities in the metro area from which the health facilities were selected. The primary level facilities were purposively selected to reflect the different local authorities and the provincial department of health (Provincial Administration of the Western Cape (PAWC).

The facilities included in the study were Groote Schuur Hospital (tertiary), Conradie Hospital (secondary), Guguletu Clinic in Guguletu (administered by the City of Cape Town), Guguletu Community Health Centre (CHC) (administered by PAWC), and Nomzamo Clinic (administered by South Peninsula Municipality). These particular facilities were selected on the basis of discussions held with the respective health service managers from the different local authorities (City of Cape Town and South Peninsula municipalities) and PAWC. Guguletu Clinic, which falls under the City of Cape Town, is one of the few clinics that provides specialised HIV/AIDS services for adults in the Western Cape.

The following offers thumbnail sketches of the suburbs in which the primary level facilities are based:

- *Guguletu* – an established "African" working class township in the Cape metropolitan area. It has a mixture of housing with informal shacks, council houses, and private houses. The population is approximately 79,000.

- *Nomzamo* – more formally, the area is known as Masiphumelele Site 5. Like Guguletu, the residents speak predominantly Xhosa. Housing predominantly consists of informal dwellings (shacks) and a few council houses. The population is approximately 15,000.

2.3.2.2 Patient Sample Size

To determine the required sample size for each of the health facilities, the study used the average number of HIV/AIDS patients seen at each of the facilities together with the population of the community. These data were obtained from the patient statistics collected daily and recorded into monthly databases at the health facilities. The study sample consisted of all HIV-positive patients presenting at the study sites. All newly or recently diagnosed patients were excluded from the study because it was considered inappropriate and unethical to subject them to an interview since many of them were still struggling emotionally with the knowledge that they were HIV positive. It should be noted that "newly or recently diagnosed" does not necessarily mean that these patients were

asymptomatic and in Stage 1; patients who were diagnosed at relatively advanced stages of the disease were also included in that category.

Interviews of 30 randomly chosen patients were conducted at the OPDs of Groote Schuur Hospital, Conradie Hospital, Guguletu clinic, Guguletu CHC, and Nomzamo Clinic. In addition, 100 inpatients at Groote Schuur Hospital and another 100 at Conradie Hospital were interviewed.

2.3.3 Measuring Consultation Time

The actual time spent on a consultation with an HIV/AIDS patient was recorded at the clinics and outpatient services at each of the hospitals. This served two purposes: first, to determine whether there was significant variation in consultation times among the different facilities, and second, to determine the allocations of personnel time to HIV/AIDS patient care.

2.3.4 Measuring Patient Perception of Quality of Care

The study sought to evaluate patients' perception of quality of care by assessing interpersonal relations and appropriateness and acceptability of services. This was done through patient exit interviews.

2.3.4.1 Patient Exit Interviews

Patient exit interviews were restricted to those patients for whom a cost analysis was done. The exit interviews sought to obtain the following information: socioeconomic and demographic characteristics, waiting and consultation times, interpersonal relations between patients and health service providers, appropriateness and acceptability of services, patient's knowledge of how HIV/AIDS is transmitted, and economic impact of the disease on the patient and his or her family. The questionnaire consisted of both open- and close-ended questions.

The patient exit interview was initially developed in English and thereafter translated into Afrikaans and Xhosa – two other official languages widely spoken in the Western Cape. The Afrikaans and Xhosa interviews were initially translated by a first-language speaker and back-translated to ensure that the meaning of the questions was consistent in all three languages. The English version of the questionnaire is contained in Annex A. The interviewers were either first-language Afrikaans or Xhosa speakers, and were recruited from the Western Cape. The confidential nature of the interviews and the sensitive nature of HIV/AIDS were constantly stressed to the interviewers.

2.3.4.2 Pilot Study

The patient exit interview was then piloted to identify errors in the design of the questionnaire and, where possible, any misunderstanding of questions that might occur. The pilot also served to familiarise the interviewers with the questionnaire and allowed them to carry out the interviews under conditions that would be similar to the actual interviews. Based upon discussions held with the health service manager from the South Peninsula local authority, Seawind Clinic was chosen as an appropriate pilot site since the clinic draws patients from all three language groups. Based on the

findings of the pilot study, the questionnaire was revised, especially in terms of the phrasing and clarity of some of the questions.

2.3.4.3 Procedure for Patient Exit Interviews

The timing of interviews differed between the hospitals (inpatients) and primary level facilities (outpatients). At the clinics and CHC, HIV services were provided on specific days of the week. In this instance, interviews were conducted on those specified days. With regard to the inpatients, interviews were conducted throughout the week, depending on the number of admissions of HIV-positive patients.

The procedure for the interviews was as follows. Interviewers did not approach the patients directly. During the consultation with the doctor, the doctor would inform the patient that an HIV/AIDS study was being conducted. After briefly informing the patient about the nature of the study, the doctor would then enquire whether the patient would agree to an interview, emphasising the voluntary nature of the interview. If the patient declined, he or she was not included in the study. If the patient agreed, he or she met privately with an interviewer in one of the consulting rooms, which was not being used at the time. The interviewer read through the "informed consent" on the first page of the questionnaire (refer to Annex A), and once again stressed the voluntary nature of the patient's participation in the study. If a patient declined or showed any reluctance to being interviewed, he or she was excluded from the study. This system of providing information to the patients through the doctor assisted in ensuring a satisfactory response rate. The number of patients who declined to be interviewed after being informed by their doctor differed among facilities, with response rates higher for some facilities than for others, although the response rates were not recorded at each facility.

2.3.5 Method for Assessing Cost of Care

The objective of the cost analysis was to determine the costs of care across the different facilities for each of the patients interviewed. More specifically, the objective was to determine the cost of care across the different WHO clinical stages, for the most commonly presented HIV-related conditions.

Costs were calculated for the 1999/2000 financial year. They included recurrent and capital costs, as well as external costs, (for example, where the diagnostic tests were carried out by an outside laboratory service.) Capital costs included the building and equipment. Recurrent costs included personnel, drugs, small equipment, nonpharmaceutical supplies, and buildings operation and maintenance. The main data sources were financial records, patient folders (records), and cost information from the various laboratories and pharmacies. An estimation of patient costs in relation to the costs of transport to and from the health facilities were also obtained during the patient exit interviews. The method for estimating costs differed between the inpatients and the clinics, and this warrants a separate discussion.

2.3.5.1 Inpatient Costs

The inpatient costs associated with HIV/AIDS were determined for the four medical wards (G5, G16, G8, and G12)[1] at GSH and A8 at Conradie Hospital. The information systems at the two hospitals differ significantly. GSH has moved towards a cost and management information system (management accounting process) based on the development of cost centres, which can provide relatively detailed information for each of the wards. Such a system does not exist at Conradie Hospital, and therefore a different approach was required to obtain the relevant cost information. However, the method of estimating costs of care for HIV/AIDS patients at the hospitals was standardised. Below is a broad overview of the steps taken for calculating inpatient costs, and the specific details of certain calculations and assumptions are given thereafter. HIV inpatient costs were calculated as follows:

1. Ward-specific costs – The costs of capital and equipment were calculated for each of the wards. The following recurrent costs were obtained: personnel, catering, telephone, consumables, bulk stores, and direct issues. Personnel costs for ancillary services were obtained and apportioned on the basis of approximation by personnel within the ancillary departments of the utilisation patterns of ancillary services by the inpatient wards and OPDs. The costs of drugs, laboratory investigations, and radiology were directly allocated to each HIV/AIDS patient.

2. Overhead costs (hospital administration, kitchen, etc.) – These costs were shared by several centres in the hospital and were not apportioned directly to the specific cost centres but were allocated to the wards according to accepted criteria for allocating shared costs (Shepard et al. 1998).

3. The ward-specific costs (1) were then added to the shared costs (2) to obtain the total ward cost (3), and the ward cost per inpatient day was calculated.

4. For each of the patients interviewed, the costs of drugs, laboratory investigations, and radiology were calculated.

5. Total cost per HIV/AIDS patient interviewed was calculated as follows: [Ward cost per inpatient day (3) x length of stay] + [patient-specific costs (4) (drug costs + laboratory investigations + radiology

2.3.5.1.1. Capital Costs

The costs of building and equipment were estimated according to Council for Scientific and Industrial Research (CSIR) estimates of current replacement values for each of the hospitals and tender prices. The equivalent annual costs were calculated assuming a useful lifespan of 30 years for buildings and 10 years for equipment and a discount rate of 8 percent per annum to allow for depreciation and the opportunity cost of capital investment (Creese and Parker 1994).

[1] As a result of restructuring of the hospital, the names of the wards have since changed.

2.2.5.1.2 Human Resources Costs

GSH and Conradie medical wards are staffed by different cadres of doctors (senior specialists, specialists, medical officers, and registrars) as well as various cadres of nurses (professional nurses, nursing assistants), administrative staff, and support staff, and they are supported by administrative, ancillary (e.g., radiology), and support services (e.g., food services). The salary costs for all staff were obtained from the human resource departments at the respective hospitals and were adjusted to take account of benefits. With regard to the doctors, their remuneration packages were adjusted to exclude time spent on activities outside the wards, including teaching, research, and outpatient care. This was considered necessary since the costs associated with these activities are not directly related to patient care and their inclusion would result in the overall costs for the wards appearing higher.

All personnel costs were allocated equally between HIV-positive and uninfected patients, without weighting for differences in clinical care time. This was done on the assumption that the HIV-positive patients receive the same amount of clinical (doctors and nurses) time as other inpatients. Key hospital personnel believed that this was a reasonable assumption. Further, the possibility of actually being able to measure clinical care time would have been very difficult. It would have required doctors and nurses to keep log books in which they recorded their activities, and given their time constraints, this would have been difficult to maintain.

2.3.5.1.3 Drug Costs

Drug costs included the cost of the drugs only and excluded dispensing costs. For each patient, the total drug, laboratory, and radiology costs were calculated using an inpatient chart abstraction form. This form was used to record any drugs and investigations that were carried out for each of the patients who had agreed to be interviewed. Drug dosages administered were obtained from the blue boards, which are the charts used to record all prescribed drugs. The inpatient chart abstraction form was developed by Brian Haile and Dr. James Kahn (Institute for Health Policy Studies at the University of California).

All drugs used were classified into the following categories: anti-tuberculosis, anti-fungal, anti-bacterial, and other. The costs associated with each of the drugs were obtained from a pharmacist at the Community Health Services Organisation of the Provincial Administration of the Western Cape. Drugs were costed at 1999 tender prices.

2.3.5.1.4 Laboratory and Radiology Costs

The costs of laboratory investigations (e.g., virology, chemical pathology) and radiology services performed at GSH were obtained by contacting the respective departments at the hospital. Costs relevant to Conradie Hospital were obtained from the South African Institute of Medial Research, which carries out the laboratory investigations for the hospital. All investigations carried out were classified into the following categories: microbiology, haematology, chemical pathology, and radiology.

2.3.5.1.5 Allocation of Shared Costs

Shared costs included the costs of hospital administration, laundry services, and kitchen services, among others. Hospital administrative costs were apportioned according to the percentage of total

staff working in the medical wards and the other departments they serve. The administrative costs were first allocated to the other departments (e.g., laundry and catering) and were then allocated once again to the medical wards on the basis of percentage of total inpatient days. Electricity, water, and workshop maintenance costs were apportioned according to the percentage of total physical space occupied by the wards.

2.3.5.2 Outpatients and Primary Level Costs

HIV/AIDS hospital outpatient and primary level costs were calculated as follows:

- Human resources – Actual clinical time (doctors, professional nurses, etc.) spent on patients was estimated for each of the different facilities, and this was directly allocated to HIV/AIDS patients.

- The costs of capital and equipment were calculated using the same approach as that used with inpatients. Capital costs and overhead costs (lights, water, insurance), which were shared by several activities within the health facility, were allocated on the basis of weighted utilisation time (see details below).

- All drug, laboratory investigations, and radiology costs were directly allocated to HIV/AIDS patients.

- The total cost per HIV/AIDS patient interviewed was calculated as follows: Costs of clinical care (1) + capital and shared costs (2) + patient specific costs (3).

2.3.5.2.1 Human Resources

The costs of health personnel were estimated on the basis of actual time spent for each of the patients included in the sample. The total remuneration packages for health personnel were adjusted to take into account information on annual and sick leave and training. Information relating to leave and training was obtained from the human resources departments at the City of Cape Town municipality, South Peninsula municipality, and the PAWC. The estimation of doctor and nurse personnel costs differed slightly. The following approach was used to calculate the cost per nurse per HIV/AIDS consultation:

- Total potential time per health personnel: (5 days/week x 52 weeks) – 10 days statutory holidays = 250 days/nurse

- Total time out of the clinic (a): total number of days on annual leave, sick leave, and training

- Total time in the health facility (b): [250 days – (a)] x 8 hours/day – (time taken for lunch and tea)

- Nurse cost per hour: total remuneration cost/(b)

- Cost per HIV/AIDS consultation: personnel cost per hour x time spent on HIV/AIDS consultation (as fraction of an hour).

For those facilities that employed sessional doctors (Nomzamo and Guguletu clinics), doctors' time in the facility was not adjusted for holidays. These doctors were only paid for the sessions that they worked, and an absent doctor would be replaced by another sessional doctor, thereby not impacting on the total doctor's work time.

2.3.5.2.2 Allocation of Shared Costs

With the exception of personnel directly involved in HIV/AIDS care, drugs, investigative laboratory, and radiology costs, all other costs were allocated to HIV/AIDS care on the basis of total weighted utilisation (see details below). These other costs included capital and equipment, overhead costs (lights, transport, maintenance), and other personnel (general assistants, clerks).

At each of the different facilities, staff members were requested to indicate the average time taken for each of the services (including HIV services) they engaged in. The patient utilisation statistics were obtained for each of the services rendered by the facilities. The utilisation statistics were combined with the average clinical care time for each of the activities, and the weighted utilisation for each of the activities were then added together to arrive at a total weighted utilisation for the health facility. Since the objective of the study was to calculate the cost per HIV/AIDS patient, a single HIV visit was divided by the total weighted utilisation time to determine the proportion of allocated costs that should be allocated per HIV visit.

2.3.6 Data Capture and Analysis

The results from the patient exit interviews were captured onto EXCEL 97 and analysed using EpiInfo version 6. Codes were introduced for open-ended questions. The costing component of the study was captured and analysed on EXCEL 97.

3. Results

This section presents the results of the clinical conditions of the patients, the costs of care of treating people with HIV/AIDs across the different facilities, and the patient exit interviews. A total of 350 patients were interviewed: 100 inpatients at each of the two hospitals and 30 patients at each of the three primary level facilities and two hospital OPDs.

3.1 Demographic and Socioeconomic Profile

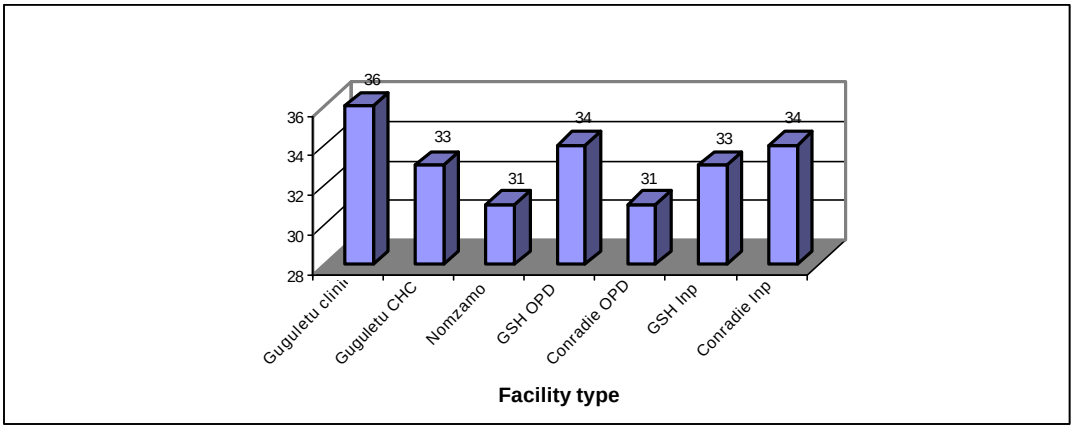
This section provides a demographic (gender and age) and socioeconomic description of the respondents. Table 1 indicates the gender profile of the respondents at the different facilities.

Table 1: Gender Distribution of Respondents by Health Facility (Percentage)

Health Facilities	Male (%)	Female (%)	Total
Nomzamo Clinic	8 (27%)	22 (73%)	30
Guguletu Clinic	12 (40%)	18 (60%)	30
Guguletu CHC	9 (30%)	21 (70%)	30
GSH OPD	11 (37%)	19 (63%)	30
Conradie OPD	14 (47%)	16 (53%)	30
GSH INP	29 (29%)	71 (71%)	100
Conradie INP	43 (43%)	57 (57%)	100
Total	126 (36%)	224 (64%)	350

Women accounted for 64 percent of the respondents (see Table 1). This was relatively consistent across all facilities, with women accounting for as much as 73 percent of respondents at Nomzamo Clinic. With regard to marital status, almost 59 percent of the respondents indicated that they were single. Approximately one-quarter of all the respondents (24.7 percent) were between the ages of 16 and 26. Figure 1 indicates the average age of the respondents across the facilities.

Figure 1. Average Age of Respondents

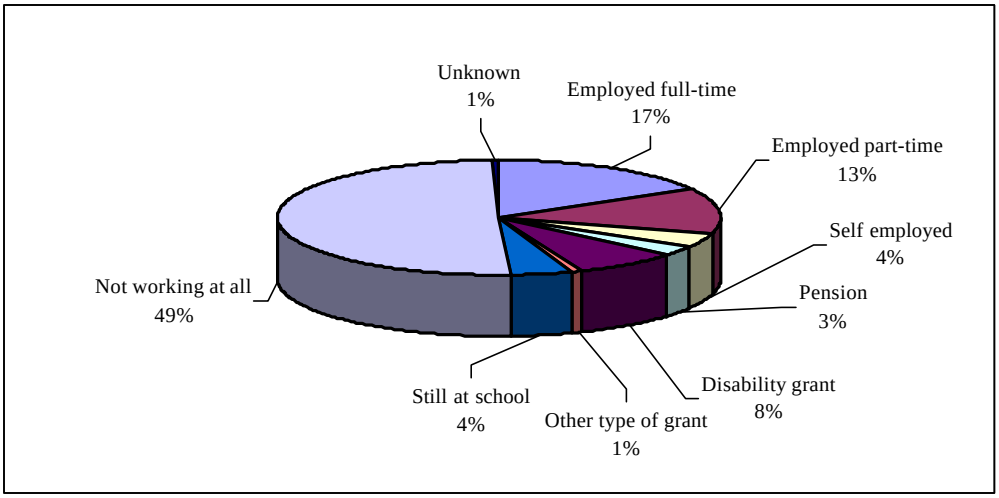


In terms of educational achievement, almost half (48 percent) of respondents had been to secondary school but had not completed their matric (grade 12). As much as 30 percent had received only a primary level education.

Regarding dwellings, less than half of respondents (46.9 percent) reported living in a formal dwelling. Approximately 42.6 percent lived in informal housing, with as much as 76.7 percent of respondents in Nomzamo indicating that they lived in informal housing.

Almost half of all respondents were unemployed (see Figure 2). The highest unemployment figures were reported at Guguletu CHC (56.7 percent) and the lowest at GSH OPD (36.7 percent). Approximately one-third of the respondents had some form of employment, with 13 percent employed part time.

Figure 2: Employment status of respondents



Twelve percent of respondents received some form of government grant, mainly in the form of a disability grant. The reported personal monthly income of respondents ranged from "zero" (50 percent) to over R2,000 (2.8 percent). A monthly income of less than R1, 000 was reported by 87

percent of respondents. The number of household dependents ranged from 0 (18.3 percent) to 17 (0.3 percent).

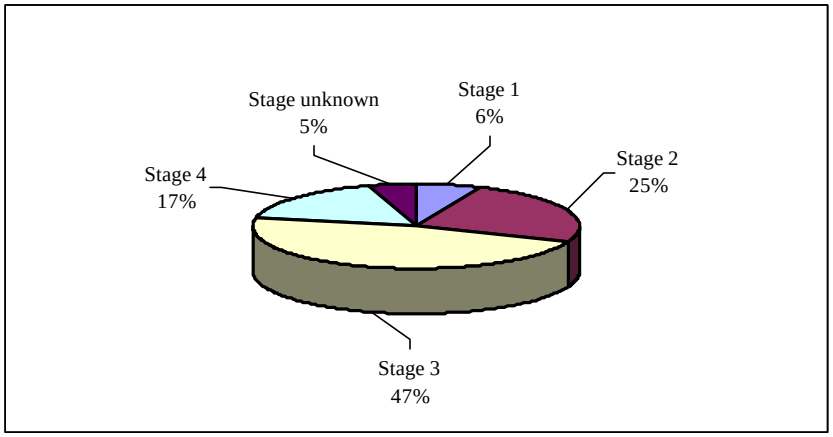
3.2 WHO Staging of Patients and Clinical Presentations

Patients were classified according to the WHO/CDC clinical stage and the common clinical conditions described in the methodology.

3.2.1 WHO Staging of Patients

Figure 3 indicates the distribution of all respondents (both inpatient and outpatient) according to the WHO disease stage HIV classification.

Figure 3: Distribution of Respondents by WHO/CDC Stages



Almost two-thirds (64 percent) of the respondents were categorized as stages 3 and 4 (see Figure 3), suggesting that patients were finding out about their status relatively late. Patients in these stages are symptomatic, find it extremely difficult to carry out routine tasks, and are bedridden for a significant amount of time. “Stage unknown” refers to those patients for whom insufficent information was available (e.g., CD4 counts, diagnostic tests) to accurately stage their condition. Table 2 presents a more detailed breakdown of the respondents for the different facilities.

Table 2: Classification of Respondents by WHO/CDC Stages Across Health Facilities (Percentage)

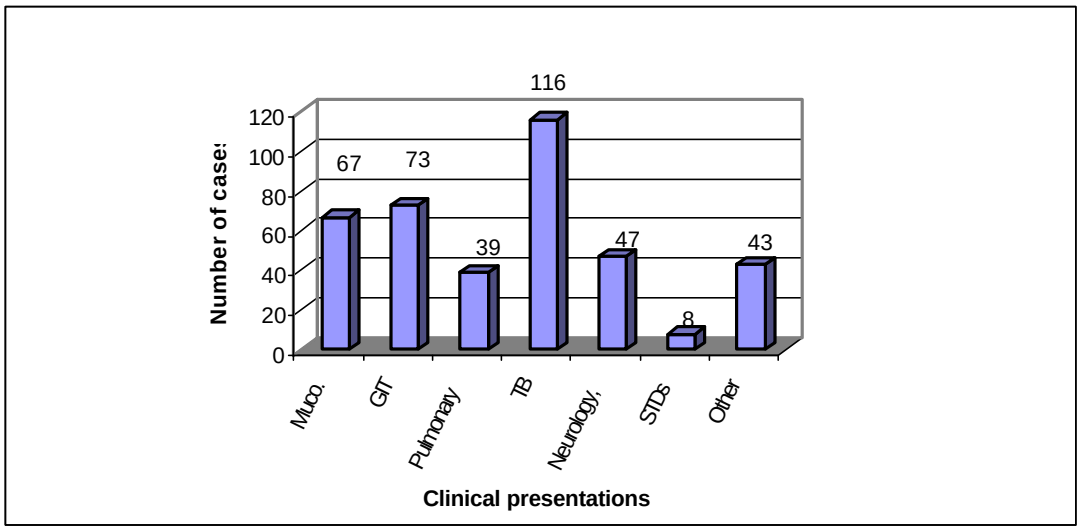
Health Facilities	WHO/CDC Staging System (Percentage)				
	1	2	3	4	Stage unknown
Nomzamo Clinic	20	26.7	40	13.3	0
Guguletu Clinic	13.3	23.3	53.3	6.7	3.3
Guguletu CHC	6.7	20	46.7	16.6	10
GSH OPD	20	26.7	20	26.7	6.6
Conradie OPD	10	33.3	40	13.3	3.3
GSH INP	1	22	49	22	6
Conradie INP	3	24	52	14	7

Across the primary level facilities, the largest proportion of the respondents fell into Stage 3 (Table 2). Similarly, across both GSH and Conradie inpatients, the largest proportion of respondents were Stage 3, and almost one-fifth (19 percent) of the respondents were Stage 4 (AIDS).

3.2.2 Clinical Presentations

The most common HIV-related conditions that patients presented with were broadly classified under the following conditions: mucocutaneous, GIT, pulmonary, neurology, STDs, and other. A wide range of conditions fell into the category "other," including nausea, vomiting, eczemas, feeling of weakness, weight loss, cardiac conditions, chest pains, seizures, confusion, and depression. Figure 4 indicates the number of patients presenting with these conditions. Note that the respondents generally present with one or more of the conditions listed. Since patients presenting with TB accounted for the largest percentage, TB has been shown separately from other pulmonary conditions.

Figure 4: Clinical presentations of respondents



Out of a total 350 respondents, 116 presented with TB (Figure 4). Of these, 51 were diagnosed with pulmonary tuberculosis (PTB) at the time of the survey, and the rest had extrapulmonary TB. A large number of respondents also presented with conditions of GIT (70) and mucocutaneous (67). The most common GIT conditions were oral candidiasis and chronic diarrhoea, and the most frequent mucocutaneous conditions were herpes zoster, herpes simplex, and dermatitis.

Table 3 indicates the distribution of the different HIV-related conditions across the facilities. The patterns of clinical conditions relate to the referral system that is in existence.

Table 3: HIV-Related Clinical Conditions of Respondents Across Facilities

Number of Cases of HIV/AIDS-related Conditions								
Health Facilities	Muco.	GIT	Pulmonary conditions besides TB	TB	Neuro.	STDs	Other	No HIV-related conditions
Nomzamo Clinic	10 (15%)	6 (8%)	0	7 (6%)	0	0	4 (9%)	4 (57%)
Guguletu Clinic	13 (19%)	3 (4%)	0	14 (12%)	3 (6%)	2 (25%)	2 (5%)	0
GuguletuCHC	14 (21%)	3 (4%)	2 (5%)	9 (8%)	5 (11%)	1 (13%)	3 (7%)	0
GSH OPD	11 (16%)	5 (7%)	0	7 (6%)	1 (2%)	0	5 (12%)	3 (43%)
Conradie OPD	9 (13%)	5 (29%)	3 (8%)	8 (7%)	4 (9%)	0	5 (12%)	0
GSH INP	10 (15%)	21 (41%)	11 (28%)	30 (26%)	19 (40%)	5 (63%)	13 (30%)	0
Conradie INP	0	30 (41%)	23 (59%)	41 (35%)	15 (32%)	0	11 (26%)	0
Total	67	73	39	116	47	8	43	7

At the primary level facilities and the hospital OPDs, the most commonly presenting condition was mucocutaneous, followed by TB (see Table 2). The majority of the pulmonary conditions were TB cases. In contrast, TB and other pulmonary conditions (e.g., pneumonia) were the most commonly presenting condition at the hospital inpatients.

3.2.3 Consultation Time

All HIV/AIDS consultations at the primary level facilities and hospital OPDs were held with a doctor. Table 4 presents the length of the consultations for each of the facilities. As indicated, there is no significant variation in the average consultation time among the facilities. The average consultation lasted approximately 16 minutes, and more than half of the consultations lasted 16 minutes or more.

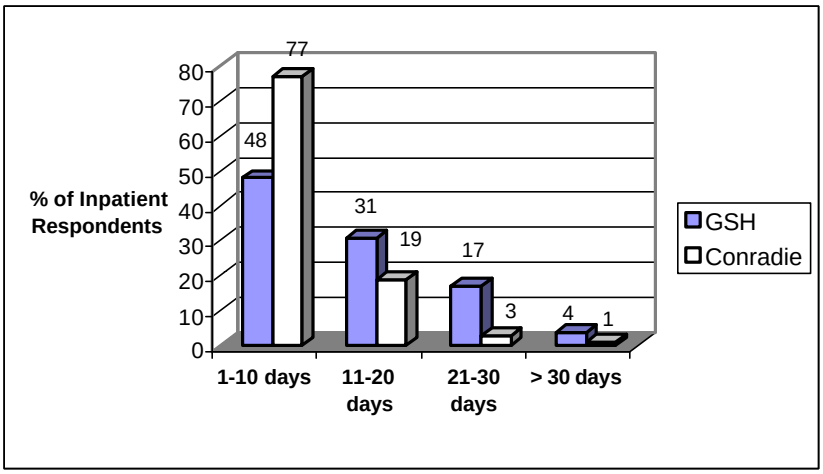
Table 4: Length of Consultations (Number Per Time Category)

	Length of Consultation (Minutes)				
Health Facilities	**> 10**	**11-15**	**16-20**	**> 20**	**Average consultation time**
Nomz. Clinic	5	8	13	4	15.93
Gug. Clinic	5	10	8	7	16.97
Gug. CHC	4	9	12	5	16.90
GSH OPD	10	4	14	2	14.63
Conradie OPD	8	6	9	7	16.73

3.2.4 Length of Stay

Inpatient days for this sample were 778 for GSH and 814 Conradie Hospital. As Figure 5 indicates, the total length of stay among inpatient respondents varied between the hospitals, from 1 to 73 days at Conradie INP to 1 to 49 days at GSH INP. This variance might relate to the differences in the types and severity of illnesses in the patients admitted at the two hospitals. More than half of the respondents were admitted for 10 days or less across both the hospitals. Less than 5 percent were admitted for more than 30 days.

Figure 5: Length of Stay



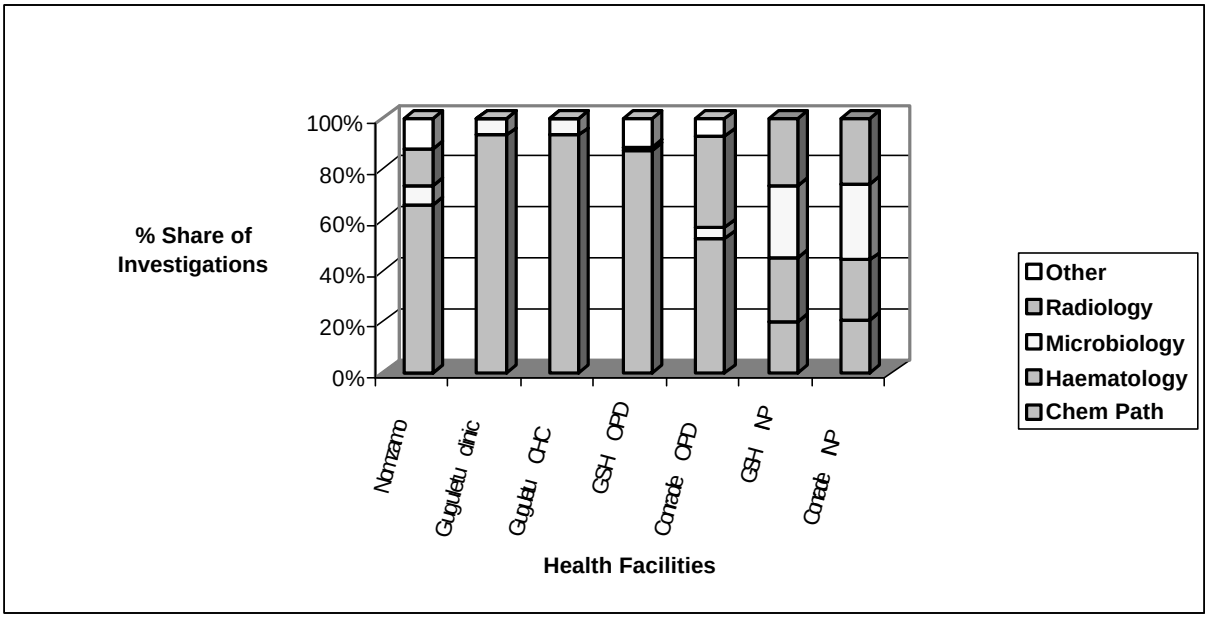
3.3 Costs of Care

The costing results related to HIV/AIDS patients are presented as follows: laboratory and radiology costs, drug costs, total and average costs, and total costs by WHO/CDC disease stage classification and presenting conditions of illness.

3.3.1 Laboratory Investigations and Radiology Costs

Figure 6 indicates the costs associated with the different laboratory investigations and radiology procedures carried out on the respondents at the various facilities. The laboratory investigations were classified in terms of chemical pathology, heamatology, microbiology, and other (e.g., histology). Since the study excluded those patients who were newly diagnosed, laboratory costs did not include the costs of HIV diagnostic tests[2].

Figure 6: Percentage Distribution of Laboratory and Radiology Costs



The results indicate that for the primary level facilities (Nomzamo Clinic, Guguletu Clinic, and Guguletu CHC), haematology accounted for the largest percentage share of total laboratory costs (see Figure 6). Haematology costs ranged from 53 percent in Conradie OPD to 93 percent in Guguletu CHC. Haematological tests that were done at the primary level facilities were full blood counts (FBC) and CD4 counts, which are baseline investigations carried out to assist in staging HIV/AIDS patients. At the inpatient level, microbiology accounted for 28 percent and 30 percent of the total costs for GSH and Conradie Hospital, respectively, followed by radiology (27 percent for GSH INP and 26 percent for Conradie INP). Table 5 indicates the average cost per investigation across the different facilities.

[2] In South Africa, the ELISA is the standard test for the detection of HIV antibodies and is 99 percent sensitive and specific for HIV infection.

Table 5: Average Investigation Costs Per Visit/Admission Across Facilities

Health Facilities	Nomz. Clinic	Gug. Clinic	Gug. CHC	GSH OPD	Conradie.OPD	GSH INP	Conradie INP
Average cost	59.51	44.90	41.87	49.72	45.87	534.62	426.17

The average investigation cost per HIV/AIDS visit ranged from R41.87 at Guguletu CHC to R59.51 at Nomzamo Clinic. In comparison, the average cost per inpatient admission was approximately seven times higher.

3.3.2 Drug Costs

Drugs are distributed free of charge at public health facilities; therefore, drug costs in this section refer to the costs of provision. Drug costs were classified into the categories of TB, anti-fungal, and anti-bacterial. With regard to the primary level facilities and the hospital OPDs, the categories "analgesics," "dermatological," and "other" were added. The category "other" included vitamin supplements (multivitamins, Vitamin Bco), immoduim for the treatment of diarrhoea, and maxalon for treating nausea. Although a large number of HIV patients co-infected with TB presented at GSH OPD, these patients were provided with TB drugs at the primary level facililites, resulting in a higher level of drug costs at those facilities treating TB patients.

As Table 6 indicates, there is considerable variation in the distribution of the different types of drugs across the facilities. For example, the proportionate share of TB drugs varies from 0 percent at GSH OPD to 39 percent at Guguletu Clinic. Expenditures for anti-fungals were high across all facilities, with the exception of Guguletu Clinic.

Table 6: Percentage Distribution of Drug Costs

	% of Total drug costs					
Health Facilities	**TB**	**Anti-Fungal**	**Anti-bacterial**	**Analgesics**	**Dermat-ological**	**Other**
Gug. Clinic	39	7.6	18.4	5.8	5.6	23.6
Gug. CHC	19.9	20.7	14.9	11.8	10.2	22.5
Nomz. Clinic	6.5	28.3	28	7.7	18.8	10.7
GSH OPD	0	26.8	15.1	9.8	12.3	36
Conradie OPD	18.1	26.4	23.6	6.8	9.2	15.9
GSH INP	16.3	43.8	31.9	8	0	0
Conradie INP	20.1	45	25.2	9.7	0	0

The average drug cost per visit/admission across the facilities is shown in Table 7. Across the primary level facilities, average drug costs ranged from R13.07 at Nomzamo Clinic) to R27.14 at Guguletu Clinic. As with the investigation costs, average inpatient drug costs were considerably higher than the primary level facilities and OPDs.

Table 7: Average Drug Costs Per Visit/Admission Across Facilities

Health Facilities	Nomz. Clinic	Gug. Clinic	Gug. CHC	GSH OPD	Conr. OPD	GSH INP	Conradie INP
Average cost	13.07	27.14	16.68	20.25	19.28	249.97	213.78

3.3.3 Costs of Care Across Different Levels

The total costs of care included ward-specifc (personnel, drugs, laboratory, consumables), overhead (personnel, lights, maintenance), capital, and equipment costs. Tables 8 and 9 indicate the total costs of care associated with the hospital inpatients and primary level facilities (including the hospital OPDs), respectively.

Table 8: Total Inpatient Costs (Rands)

Cost Category	GSH INP (%)	Conradie INP (%)
Recurrent (ward-specific):		
Personnel		
Doctors	108,703.80 (20.8)	78,224.00 (19.2)
Nurses	185,000.63 (35.3)	162,543.50 (39.9)
Support staff (on wards)	7,541.52 (1.4)	37,784.65 (9.3)
Total: Personnel:	301,245.95 (57.5)	278,552.15 (68.4)
Drugs	24,979.30 (4.8)	21,378.20 (5.3)
Laboratory	39,288.84 (7.5)	31,660.36 (7.8)
Radiology	14,173.00 (2.7)	10,957.10 (2.7)
Consumables	18,655.61 (3.6)	12,161.25 (3)
Catering	4,584.13 (0.9)	4,246.60 (1.0)
Total: Ward-specific	402,926.83 (76.9)	358,955.66 (88.2)
Recurrent: Overheads		
Personnel (nonward-specific)	66,020.87 (12.6)	15,695.13 (3.9)
Other	27,159.41(5.2)	3,976.27 (1)
Total : Overheads	93,180.28 (17.8)	19,671.40 (4.8)
Total: Recurrent (Ward-specific + Overheads)	496,107.11 (94.7)	378,627.06 (93)
Capital & Equipment		
Capital	21,418.46 (4.1)	22,541.30 (5.5)
Equipment	6,353.54 (1.2)	5,947.10 (1.5)
Total: Capital & Equip.	27,772 (5.3)	28,488.40 (7.0)
Total cost	523,879.11 (100%)	407,115.46 (100%)
Average cost/HIV/AIDS admission	5,238.79	4,071.15

As indicated in Table 8, ward-specific recurrent costs accounted for the bulk of expenditures across the two hospitals. Personnel (57.5 to 68.4 percent), laboratory investigations (7.5 to 7.8

percent), and drugs (4.8 to 5.3 percent) accounted for the highest percentage shares of total costs. Among the clinical personnel, although the cost of doctors is markedly higher for GSH than for Conradie Hospital, in terms of percentages, it is not signficantly different.

Nonward-specific personnel costs are significantly higher for GSH (12.6 percent) than Conradie (3.9 percent). A large percentage of the support staff at Conradie is dedicated to the hospital wards. Hence, their costs are reflected under "support staff." In contrast, the GSH support staff is not dedicated to the wards; therefore, their costs are indicated under "nonward-specific personnel costs" together with the costs of other "shared personnel" (e.g., hospital management and administrative services).

Average costs were signficantly higher for GSH (R5,238.79) than for Conradie (R4,071.15). The cost per inpatient day was approximately R673.37 for GHS and R500.14 for Conradie. Nonpatient-specific inpatient costs (excluding drugs, laboratory, and radiology) were approximately R572.52 for GSH and R421.52 for Conradie, suggesting that nonpatient-specific costs were the major cost drivers.

At the primary level facilities, a doctor together with a professional nurse carries out consultations. At the hospital OPDs, either a consultant (indicated as "senior doctor" in Table 9) or a senior medical officer (indicated as "junior doctor") carries out the consultation. Here again, they are assisted by a professional nurse.

Overall, the total costs associated with the different facilities did not vary significantly, as indicated in Table 9). Similar to the hospitals, recurrent costs at primary level facilities accounted for the largest proportion of expenditures. Personnel costs accounted for at least one-third of the total costs, and laboratory costs were consistently high across all the facilities. Laboratory costs, as a percentage of total costs, ranged from 18.7 percent at Conradie OPD to 37.4 percent at Nomzamo Clinic.

Table 9: Primary Level Facilities and Hospital OPD Costs (Rands)

Cost Category	Nomzamo Clinic	Guguletu Clinic	Guguletu CHC	GSH OPD	Conradie OPD
Recurrent Costs					
Personnel:					
Senior Doctor	762 (18.6)	829.67 (18.3)	634 (14.4)	721.59 (15.1)	779.58 (16.6)
Junior Doctor	-	-	-	545.02 (11.4)	618.46 (13.2)
Nurse (PN)	468.21 (11.4)	391.93 (8.6)	461 (10.5)	412.66 (8.6)	471.88 (10)
Other Personnel	475.58 (11.6)	398.24 (8.8)	744 (16.9)	403.02 (8.4)	448.78 (9.5)
Subtotal: Personnel:	1,705.79 (41.7)	1,619.84 (35.7)	1,839 (41.8)	2,082.29 (43.4)	2,318.70 (49.3)
Drugs	392.14 (9.6)	814.31 (17.9)	500.40 (11.4)	607.50 (12.7)	578.36 (12.3)
Laboratory	1,528.20 (37.4)	1,347 (29.6)	1,256.10 (28.6)	1,491.60 (31.1)	880.70 (18.7)
Radiology	257.10 (6.3)	0 (0)	0(0)	0 (0)	495.39 (10.5)
Other	-	-	-	-	47.99 (1.0)
Subtotal: Recurrent	3,883.23 (95)	3,781.15 (83.2)	3,595.5 (81.8)	4,181.39 (87.2)	4,321.14 (91.9)
Overhead Costs					
Personnel - related	-	-	-	256.37 (5.3)	179.22 (3.8)
Other	39.37 (1)	224.12 (4.9)	271.94 (6.2)	57.99 (1.2)	40.34 (0.9)
Overhead Subtotal:	39.37 (1)	224.12 (4.9)	271.94 (6.2)	314.36 (6.6)	219.56 (4.7)
Total: Recurrent	3,922.60 (95.9)	4,005.27 (88.1)	3,867.44 (87.9)	4,495.75 (93.8)	4,540.70 (96.6)
Capital & Equipment Costs					
Capital	130.12 (3.2)	486.77 (10.7)	439.80 (10)	224.02 (4.7)	134.28 (2.9)
Equipment	36.71 (0.9)	51.69 (1.1)	95.09 (2.2)	73.67 (1.5)	26.86 (0.6)
Subtotal: Capital & Equip.	166.83 (4.1)	538.46 (11.9)	534.89 (12.2)	297.69 (6.2)	161.14 (3.4)
Total Cost	4,089.43 (100)	4,543.73 (100)	4,402.33 (100)	4,793.44 (100)	4701.84 (100)

3.3.4 Costs of Care by WHO/CDC Disease Stage

Table 10 indicates the range of unit costs of care per visit and admission according to WHO/CDC disease staging. Overall average costs per disease stage are indicated in parentheses.

As Table 10 shows, across all facilities the total costs increased notably for later stages of the disease. At the primary level facilities and OPDs, costs of care ranged from R47.56 (Stage 1) to R302.45 (Stage 4). Across all stages, average inpatient costs were significantly higher compared with the lower levels of care, with the exception of Nomzamo Clinic. Inpatient costs increased by almost 100 percent between stages 2 and 3. Also worth noting is that inpatient costs were higher for Stage 3 patients than Stage 4. The wide range in costs for each stage suggests that there are significant variations in patient-specific costs (laboratory, radiology, and drugs).

Table 10: Costs of Care by WHO/CDC Disease Stage (Rands)

	WHO/CDC Disease Stage			
Health Facilities	**1**	**2**	**3**	**4**
Nomz. Clinic	49.35-211.76 (105.56)	65.77-219.16 (136.56)	57.49-312.44 (164.44)	55.02-98.02 (97.58)
Gug. Clinic	49.26-103.02 (91.76)	57.77-152.87 (117.80)	66.06-233.31 (158.76)	71.30-302.45 (259.83)
Gug. CHC	54.24-148.40 (101.32)	67.14-181.93 (108.04)	45.81-217.68 (147.83)	58.46-149.96 (114.23)
GSH OPD	52.65-204.13 (131.32)	47.88-208.39 (144.01)	64.32-282.17 (175.59)	70.49-254.29 (139.70)
Conradie OPD	47.56-144.56 (175.08)	42.52-331.36 (135.57)	43.13-410.24 (150.85)	106.90-300.23 (187.01)
GSH INP	3,286.19 (3,286.19)	1,545.27-9,432.1 (4,920.76)	1,476.60-12,934.10 (5,739.44)	1,495.36-18,093.27 (5,592.42)
Conradie INP	1,263.88-3,509.91 (2,976.74)	957.92-4,610.79 (4,086.80)	936.64-10,791.07 (4,420.56)	576.68-9,493.30 (4,185.15)

3.3.5 Costs of Care by HIV/AIDS-related Conditions

Table 11 indicates the range of costs for the different conditions with which the respondents presented. Average costs are indicated in parentheses in italics.

Table 11: Costs of Care by HIV/AIDS-Related Clinical Conditions (Rands)

	HIV/AIDS-related Conditions						
Health Facilities	**Muco.**	**GIT**	**Pulm. Conditions besides TB**	**TB**	**Neuro.**	**STDs**	**Other**
Nomzamo Clinic	49.35-183.93 (149.51)	89.08-144.63 (175.32)	-	55.02-79.34 (104.83)	-	-	42.64-73.57 (64.70)
Guguletu Clinic	57.79-170.46 (100.12)	80.35-103.50 (119.41)	-	67.93-184.55 *(139.49)*	118.7113 5.79 (125.40)	109.73-217.20 (163.47)	45.26-94.70 (85.68)
Guguletu CHC	45.00-180.99 (117.37)	67.13-156.32 (126.58)	76.65-165.43 (121.04)	94.97-149.95 (134.61)	87.56-129.02 (113.01)	95.21 (95.21)	46.78-92.56 (88.42)
GSH OPD	48.57-254.29 (135.18)	76.55-202.26 (139.98)	-	70.00-186.04 (128.87)	273.36 (273.36)	-	47.88-86.18 (116.65)
Conradie OPD	71.70-207.74 (124.60)	42.52-195.74 (172.25)	42.52-186.23 (125.52)	83.78-254.72 (132.68)	110.70-145.18 (146.12)	-	42.52-155.47 (123.10)
GSH INP	1,495.30-5,314.2 (3,501.80)	571.5-7,118.9 (4,679.10)	2,136-9,198.4 (5,036.17)	3,017.90-12,934.10 (5,469.38)	1,547.30-10,829.30 (6,300.45)	2,379.57-8,457.58 (4,758.30)	2,086.70-9,432.10 (5,997.55)
Conradie INP	-	1,773.10-4,838.09 (3,010.16)	576.68-6,734.76 (3,478.33)	1,210.63-8,402.31 (3,672.63)	1,747.88-7,438.69 (3,912.41)	-	2,121.04-6,986.21 (2,504.08)

The results in Table 11 cannot be considered in isolation, but rather should be measured together with the extent to which the disease has progressed in the individual, which impacts on the costs of treating the individual. In addition, it is important to note that the costs of care vary widely for each HIV-related condition. For example, costs of care for treating patients with mucocutaneous-related illnesses varied from R49.35 to R183.93 (Nomzamo Clinic). For comparitive purposes, average cost is a relatively more useful indication of cost differences between conditions and levels of care. Across all conditions, costs of care at the hospital level were significantly higher than at the lower levels. Also, average costs were comparitively lower at Conradie Hospital than at GSH for each of the AIDS/HIV-related conditions.

3.3.6 Total Costs of Care for HIV/AIDS Patients in 1999

Total costs of care based on total utilisation of HIV/AIDS patients in 1999, by WHO disease stage, are estimated in Table 12. Total costs ranged from R55,869.71 (Guguletu CHC) at the primary

level, to R1,547,393.13 for inpatient care at GSH. There were no significant differences in total costs between the facilities at the primary level.

Table 12: Estimated Costs of HIV/AIDS Care by Facility (Rands)

Health Facilities	Total Cost for 1999 (Rands)
Nomzamo Clinic	65,437.28
Guguletu Clinic	73,680.43
Guguletu CHC	55,869.71
GSH OPD	65,831.32
Conradie OPD	70,975.27
GSH INP	1,547,393.13
Conradie INP	1,324,480.04

3.4 Patient Perception of Quality of Care

A total of 350 questionnaires were administered to HIV/AIDS patients seeking care at the facilities sampled. Of these, 200 inpatient interviews and 150 exit interviews were conducted at the two hospitals and three primary level facilities.

3.4.1 Knowledge of HIV/AIDS

Patients were asked several questions regarding possible ways of transmitting HIV/AIDS to assess their awareness and knowledge of the disease. Table 13 Illustrates the percentage of questions answered correctly by respondents at each of the facilities.

Table 13: Knowledge of HIV/AIDS (Percentage Answered Correctly)

Health Facilities	Donating blood	Sexual intercourse	Sexual intercourse using a condom	Sharing items (blades or needles)	Mother to baby	A condom should be used if both partners are HIV positive
Nomzamo Clinic	10	90	63.3	40	53.3	66.7
Guguletu Clinic	16.7	93.3	83.3	56.7	83.3	80
Guguletu CHC	6.7	86.7	53.3	70	76.7	63.3
GSH OPD	26.7	93.3	66.7	83.3	70	70
Conradie OPD	20	80	63.3	60	70	80
GSH INP	42	84	5	57	58	50
Conradie INP	22	61	38	45	51	53
All facilities	41.7	79.4	55.4	55.7	61.4	60.3

Overall, the majority (79.4 percent) of the respondents were aware that HIV/AIDS could be spread through sexual intercourse (see Table 13). Almost half (44.6 percent) were unaware that they could protect themselves by using a condom. Of particular note is that only 5 percent of respondents at GSH INP indicated that using a condom could prevent HIV transmission during sexual intercourse. As one respondent noted, *"Me and my girlfriend already have HIV. Why do we need a condom?"*[3]

3.4.2 Access

Questionnaires also considered patients' access to health facilities. The results of those questionnaires are shown in Table 14, which indicates the time taken for respondents to reach the health facilities.

Table 14: Travelling Time to Health Facility (Percentage of Respondents)

	Travelling Time (minutes)					
Health Facilities	**<10 (%)**	**11-30 (%)**	**31-60 (%)**	**61-120 (%)**	**>120 (%)**	**Unknown (%)**
Guguletu Clinic	13.3	43.3	30	6.7	-	6.7
Guguletu CHC	23.3	63.3	13.4	-	-	0
Nomzamo Clinic	40	53.3	-	-	-	6.7
Conradie OPD	3.3	26.6	43.3	16.67	-	10.13
GSH OPD	-	23.3	33.3	30	6.7	6.7
Conradie INP	1	37	29	4	1	28
GSH INP	1	44	41	2	2	10
Average: All facilities	7.4	40.9	30.6	6	1.4	13.7

[3] Patient number 8 from Guguletu Clinic, male.

Almost 72 percent of the respondents indicated that it took them between 11 and 30 minutes to reach the health facility. Respondents travelling to the hospitals took the longest time to travel. Approximately 70 percent of those attending the HIV clinic at GSH OPD spent more than 30 minutes traveling to the facility.

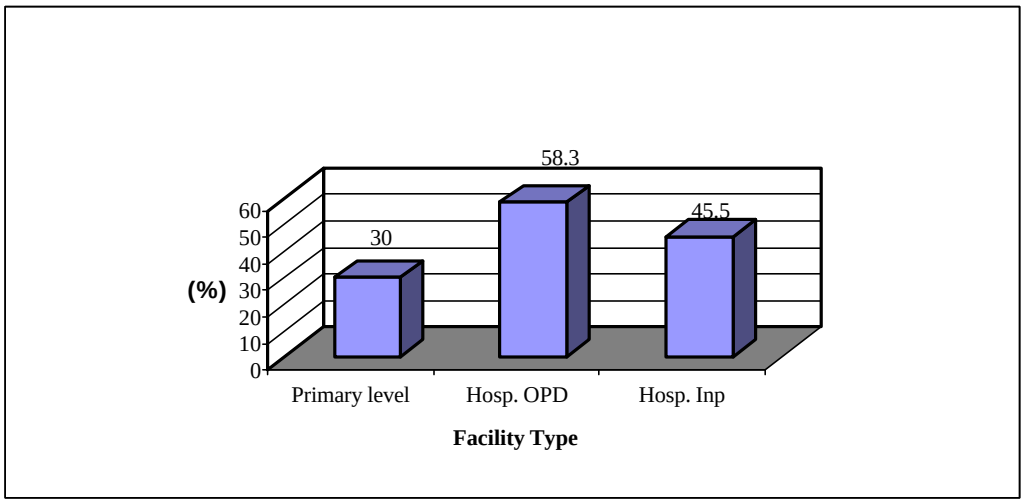
Table 15 indicates the means of transport respondents used to travel to the facilities. Respondents traveled by foot, public transport (bus, taxi, or train), bicycle, private car, and ambulance (those who were admitted for inpatient care). More than half (52.6 percent) of respondents travelled on foot and slightly fewer travelled by bus or taxi (33.3 percent) to reach the primary level facilities. Almost two-thirds were transported either by ambulance (32.5 percent) or by private cars (30.5 percent) to the hospitals.

Table 15: Means of Transport to Health Facility (Number of Respondents)

Facility	Means of Transport							
	On foot	Bus/taxi	Bicycle	Private car	Train	Foot & Bus/taxi	Ambulance	Total
Primary level facilities:								
Nomzamo Clinic	28	0	0	1	0	1	0	30
Guguletu Clinic	21	7	0	0	0	2	0	30
Guguletu CHC	16	12	1	0	0	1	0	30
GSH OPD	1	19	0	2	5	3	0	30
Conradie OPD	13	12	0	1	4	0	0	30
Total: Primary Level (% share)	79 (52.6%)	50 (33.3%)	1 (0.7%)	4 (2.7%)	9 (6%)	7 (4.7%)	0 (0%)	150 (100%)
Hospitals								
GSH INP	0	38	0	28	0	0	34	100
Conradie INP	2	32	1	33	1	0	31	100
Total: Hospitals	2 (1%)	70 (35%)	1 (0.5%)	61 (30.5%)	1 (0.5%)	0 (0%)	65 (32.5%)	200 (100%)

Almost half (49.1 percent) of respondents paid for transportation to reach the health facilities. Figure 7 indicates the percentage of respondents who paid for transportation by facility types. The primary level facilities include Guguletu Clinic, Guguletu CHC, and Nomzamo Clinic.

Figure 7: Percentage of Respondents Who Paid for Transport



Less than one-third of respondents (30 percent) paid for transportation to reach the primary level facilities (see Figure 7). In comparison, 58.3 percent and 45.5 percent paid to reach the OPD clinics and inpatient wards, respectively, at a cost of between R2 and R90. Almost three-quarters (74.3 percent) paid between R2 and R10. On average, respondents travelling to the primary level facilities, OPDs, and hospital inpatients paid R9.84, R12.54, and R21.52, respectively, for transport.

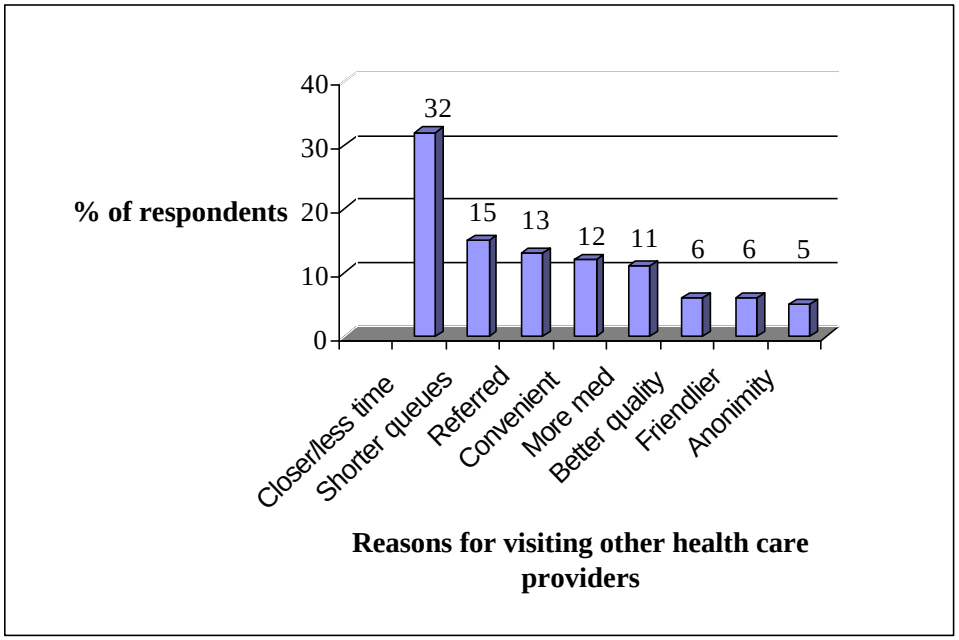
3.4.3 Choice of Provider

At the three primary level facilities (Guguletu Clinic, Guguletu CHC, and Nomzamo Clinic), 37.8 percent of respondents indicated that they had visited other health care providers since being diagnosed with HIV/AIDS. More than half of the respondents at the OPD clinics and inpatient wards indicated that they had visited other health facilities.

The most frequently visited alternative health service provider among those interviewed at primary level facilities was the hospital (24.3 percent), followed by the general practitioner (15.4 percent). The least visited health care providers were the pharmacies (5.1 percent) and the traditional healer (6 percent). These findings were consistent across all the primary level facilities. At the inpatient level, respondents indicated most frequently visiting hospital OPDs (28.5 percent) and general practitioners (19 percent). Clinics were visited almost four times as often as CHCs.

Respondents cited the following reasons for visiting other providers: closer to home and/or work, shorter queues and waiting time, referral, convenience, given more medication, better quality care, friendlier staff, and anonymity (see Figure 8).

Figure 8: Reasons Cited for Visiting Other Health Care Providers



The most frequently cited reason (32 percent) for visiting other health care providers was that it was closer to either home or work and it took less time to reach (see Figure 8). To a less extent, "shorter queues" (15 percent) and "referrals" (13 percent) were also cited as reasons.

Respondents were also asked whether there were health facilities in closer physical proximity to the one visited on the day of the interview. Almost one-fifth (21.3 percent) indicated that there was a facility closer. At GSH OPD, seven of the patients indicated that either a doctor in a clinic or a private general practitioner had referred them to the hospital. A commonly cited reason for bypassing a closer facility was the desire for privacy. One patient said that *"there is no privacy in the township"* and another remarked that "*people know me."*[4] Eight of the patients preferred to visit the OPDs at the hospitals because they believed that they received better services. As one patient remarked, the *"*[OPD] *clinic is more advanced."*[5]

3.4.4 Patient Perception of Quality of Services

The patient's perception of quality of services was assessed in terms of interpersonal relations between the patient and the doctor, the appropriateness and acceptability of services, and overall patient satisfaction.

[4] Patient number 17 from Conradie OPD, female
[5] Patient number 23 from Conradie OPD, female

3.4.4.1 Interpersonal Relations

Almost three-quarters (73.4 percent) of all respondents across all facilities indicated that the "doctor was easy to understand when explaining things." Approximately 6 percent were unsure they understood their doctor. At Guguletu Clinic and CHC, 90 percent found their respective doctors "easy to understand." The facility with the lowest percentage of patients who claimed to understand their doctor was GSH INP (60 percent).

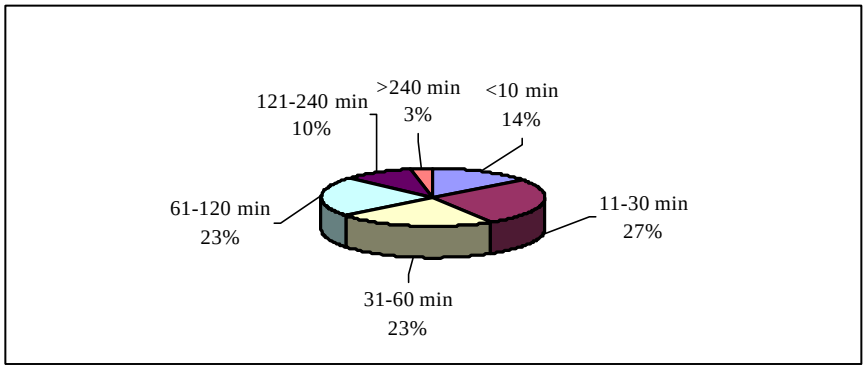
The majority (81.1 percent) of patients said that they "had enough privacy during the consultation." The facility with the lowest privacy rating was Conradie Hospital; only 71 percent of the inpatients and 73.3 percent of the outpatients felt that they had enough privacy during their consultation.

Although three-quarters of the patients (74.9 percent) were "comfortable with the language that the doctor used" during the consultation, an equally high percentage (61.1 percent) indicated that they would have preferred the consultation to have been conducted in another language.

3.4.4.2 Appropriateness and Acceptability of Services

The appropriateness and acceptability of services concerns the amount of time patients waited before being seen by the doctor. The amount of waiting time is indicated in Figure 9 and relates to the three primary level facilities and the two outpatient clinics at the hospital.

Figure 9: Waiting Time to See the Doctor



As Figure 9 indicates, almost half of the respondents (46 percent) waited between 31 and 120 minutes before a doctor attended to them. An additional 10 percent said that it took between 121 and 240 minutes before they met with the doctor. Respondents indicating the longest waiting time were those attending the GSH OPD clinic. At this location, approximately 53 percent of respondents waited between one and four hours.

Table 16 indicates patients' responses regarding the waiting time in relation to previous visits to the health facility. Across all facilities, one-third of the patients indicated that they had waited for a similar period of time on previous visits. An almost equal number (31 percent) said that they had waited for a shorter period of time. Perception of waiting time varied among the facilities. For example, approximately half of the respondents at Guguletu Clinic (46.7 percent) and CHC (53.3 percent) indicated that they waited for a shorter period of time on the day of the interview than they

usually waited. Almost one-fifth (18.7 percent) of all respondents said that they waited longer on the day of the interview than usual, with one-third of patients attending Guguletu Clinic falling into this category. The majority (85.1 percent) of all the respondents indicated that they were satisfied with the time that the doctor spent with them. This finding was consistent across all the facilities.

Table 16: Comparison of Waiting Time to See Doctor

	Waiting Time			
Health Facilities	**Similar to usual waiting time (%)**	**Shorter than usual (%)**	**Longer than usual (%)**	**Not sure (%)**
Guguletu Clinic	16.7	46.7	33.3	3.3
Guguletu CHC	10	53.3	23.3	13.4
Nomzamo Clinic	43.3	23.3	13.3	20
Conradie OPD	36.7	20	23.3	20
GSH OPD	60	23.3	10	6.7
Average across all facilities	33.3	31	18.7	17

3.4.4.3 Patient Satisfaction

Patient satisfaction was evaluated by asking patients whether they were generally satisfied with the services they received, by asking them to rate specific aspects of the health facility, and finally by whether they believed that the staff at the facility helped them come to terms with their HIV status. Table 17 indicates the percentage of respondents who were satisfied with the services according to these criteria.

Table 17: Patient Satisfaction

Health Facilities	Gug. Clin.	Gug CHC	Nomzamo	Conrad. OPD	GSH OPD	GSHInp	Conrad. Inp	All facilities
% of respond. Satisfied	86.7	80	76.7	73.3	86.7	86	54	74.6

Across all facilities, almost three-quarters of respondents (74.6 percent) indicated that they were satisfied with the health services that they received (see Table 17). Satisfaction ranged from 54 percent at Conradie INP to 86.7 percent at *Gug*uletu Clinic and GSH OPD. Of the 46 patients who expressed dissatisfaction with the services at Conradie INP, 34 were unable to provide reasons for their dissatisfaction.

Insufficient and inadequate amount of medications were cited by 10 respondents as reasons for being dissatisfied with the services received. One patient said that he "*vomited after swallowing the medicines.*"[6] Another patient remarked that *"the medicines that I get here are not helping my pains. I*

[6] Patient number 36 from Groote Schuur Hospital, male

get better for one day. After that the pain starts again."[7] Other reasons for dissatisfaction were that the health services were poor and inadequate.

Respondents also rated their satisfaction with various aspects of the health facilities, and these results are illustrated in Table 18. As indicated, more than half of the respondents rated the different aspects of the facilities between "good and 'excellent." Across all the facilities, 69.3 percent of respondents indicated that they would recommend the facility to others with HIV/AIDS.

Table 18: Level of Satisfaction with Aspects of Health Services

Aspects of Health Services	Poor (%)	Fair (%)	Good (%)	Very Good (%)	Excellent (%)	Not Sure (%)
Drug availability	6.3	12.6	55.6	14.6	5.4	5.5
Doctor's attitude	3.4	7.4	49.1	24	12.9	3.2
Nursing staff's attitude	8	10.3	48.3	19.1	11.1	3.2
Health educator's attitude[1]	6	5.3	36	24.7	9.3	18.7
Availability of staff (doctor, nurses, health educator)	6	13.7	50.3	17.7	7.7	4.6
Cleanliness of facility	5.7	14.1	48.6	20.1	7.8	3.7
Quality of food[2]	12.2	24.9	52.9	10.1	0	0.1
Overall perception of services at facility	4.3	12.6	50.7	18.9	6.9	6.6

1. Health educator's attitude: only patients at the primary level services and the hospital outpatients were asked to rate this aspect.
2. Food: only patients admitted for inpatient care were required to rate the quality of the food received.

When asked how they believed that the services at the facilities could be improved, 16 percent of respondents did not answer this question, and another 41.1 percent were not sure. Of the 56 respondents who believed that the services could be improved, 60.7 percent wanted more health personnel (doctors, nurses, and counsellors) and 26.7 percent said that there should be shorter queuing times to collect their medications. Others believed that the services could be improved by "*finding a cure," by providing HIV medicines*, and by *helping them to get their disability grants.*

When asked whether they believed that the staff had in some way helped them to come to terms with their HIV status, 64.7 percent of all respondents answered "yes," and 19.3 percent were not sure. Of those who did believe that the health staff had in some way helped them, 74.2 percent cited reasons relating to the counselling, advise, and information provided and the moral support and encouragement provided. One patient said, *"The nurse calmed me down and stopped me from killing myself."*

The 54 respondents who believed that the staff at the health facility had not helped them in any way were asked how they thought they could be helped. Almost one-fifth (22.2 percent) said that they required better counselling with more HIV/AIDS information provided. Seven of these were despondent and did not believe that they could be helped. One patient remarked, *"People must help themselves."*

[7] Patient number 9 from Nomzamo Clinic, male

4. Discussion

4.1 WHO Staging and Clinical Presentations

Most of the respondents (64 percent) were at stages 3 and 4, and the hospitals received almost 40 percent of these patients. Also worth noting was the high percentage of respondents who fell into Stage 3 at the primary level facilities. Two points should be borne in mind when reviewing these results. First, since this study deliberately excluded patients with early diagnosis, the percentage of potential respondents in Stage 1 is underestimated, particularly at the primary level facilities and hospital OPDs. Secondly, since the costs of care relate only to those patients who had agreed to be interviewed, the results might not be an accurate reflection of the actual case mix of patients. Having said this, the large number of inpatients falling into stages 3 and 4 (69.5 percent) is similar to the finding by Karstaedt et al. (1996), where stages 3 and 4 accounted for approximately 68 percent of the inpatients.

A key concern in relation to HIV is that there tends to be relatively long inpatient stays for those in stages 3 and 4. The extent to which the length of hospital stay (especially expensive tertiary hospitals, e.g., GSH) for Stage 4 patients can be reduced by appropriate and timeous discharge to hospice services and home-based care needs further investigation.

Currently in the Western Cape, non-governmental organisations actively involved in the provision of such care include the Red Cross Society's Home-Based Care programme and St. Luke's Hospice, among others. In addition to home-based care and nutritional support for people with AIDS, organisations such as the Red Cross Society's Home-Based Care also provide, where possible, psycho-social support to the families of the affected person, the provision of which is limited at the inpatient level. At present, it appears that, in the Western Cape specifically, the organisations providing terminal care are not experiencing severe resource constraints. However, this situation is likely to change as the number of people with AIDS increases, thereby producing a corresponding increase in demand for such organisations outside of hospitals. When considering the transfer of patients from hospitals to home-based care, the costs and quality of care, in addition to the availability of such alternative facilities, are critical.

4.1.1 TB and HIV/AIDS

TB was the most common HIV/AIDS-related condition found in this study. This was not surprising considering the high incidence of TB in the Western Cape. TB/HIV co-infection was present in 33 percent of the cases (30 percent of primary level and OPD respondents and 35.5 percent of inpatients). This was similar to the Karstaedt et al. (1996) finding at Baragwanath Hospital, where TB accounted for 30 percent of the admissions, especially among patients in stages 3 and 4.

Some of the inpatients were discharged to local primary level facilities with TB services and were followed up at the hospitals' OPDs. The remaining patients were transferred to Brooklyn Chest Hospital, a specialised TB inpatient facility. At the primary level facilities, HIV patients with TB co-

infection are managed according to national TB guidelines and the Directly Observed Treatment (DOTS) short-course strategy, which requires having a patient take his or her medication in the presence of a community member (treatment supporter) or supervisor. It has been argued that to make any impact on the TB epidemic at least 85 percent of those infected must be cured (Bamford 1999). In the Western Cape, 68 percent of TB cases were cured after six months of treatment, and this amount was below the required rate. Bamford (1999) has further argued that, "programmes which fail to cure 85 percent infectious patients will do more harm than good," resulting in many of these patients requiring retreatment, which often involves long periods of more expensive hospital care. This is disturbing considering that for those who are co-infected with HIV, reactivation risk ranges from 5 to 10 percent per year (Bamford 1999). This finding was supported by discussions with nurses from Conradie Hospital, who maintained that patients were frequently readmitted with reactivated TB or recurrent TB infection. Furthermore, reactivation was often the result of poor compliance with TB treatment at the primary levels. Readmissions clearly have cost implications, and it can be argued that these patients crowd out others.

In South Africa, considering the fatal interplay between the HIV/AIDS and TB epidemics, the merits of screening all HIV patients for TB (and vice versa) and commencing TB prophylaxis early on clearly have certain benefits. TB prophylaxis can significantly reduce the risk of progression from asymptomatic HIV to AIDS and reduce the number of patients requiring inpatient care.

4.1.2 Other HIV-related Conditions

Other conditions frequently found, but to a lesser extent than TB cases, were GIT (especially chronic diarrhoea and oral candidiasis), mucocutaneous (shingles, herpes simplex, and prurigo), and unexplained weight loss. Conditions of chronic diarrhoea and weight loss are very common clinical features of HIV/AIDS in adult Africans (Desmond-Hellman 1991). Given the lack of data on the prevalence of these conditions for the population, it would be difficult to argue that this can be generalised for HIV-positive patients in general. Further, the extent to which it might suggest that large numbers of these cases were either not detected or appropriately managed at the primary level facilities needs further investigation.

4.2 Costs of Care

4.2.1 Laboratory and Radiology Costs

In absolute terms, the costs of inpatient investigations outweighed that of the primary level facilities. Although investigations accounted for merely 10 percent of the total costs of care at the inpatient level, the average expenditure on investigations per admission was 10 times higher than that of the lower levels. This was a result of the more advanced and severerly ill patients being seen at the higher level.

At the primary levels, haematological tests (FBC and CD4 count) accounted for the largest share of investigative costs. FBCs and CD4 counts are essential baseline tests and are repeated approximately every six months after initial diagnosis at the primary level facilities. A CD4 count is important in determining the immune status and staging of the patient. A declining CD4 count corresponds with an increase in the progression of the disease. Patients in Stage 1 have a CD4 count

of more than 500, compared with those in Stage 4, where the CD4 count has dropped significantly to less than 200.

At the inpatient level, microbiology accounted for approximately one-third of total laboratory investigations. This is not surprising considering the relatively large number of respondents with GIT, pulmonary, and neurological conditions (particularly meningitis). The use of TB sensitivities was fairly high. Discussions with doctors at the hospitals indicated that in view of the high incidences of TB, and more importantly, since many of the patients were retreatment cases, the use of sensitivities was appropriate and justified in identifying these cases. One implication of this is that if HIV patients with TB co-infection are better managed at the primary levels and patients successfully complete their treatment, the number of retreatment cases at the hospitals might decrease. This will probably result in fewer TB sensitivities tests being required, in addition to other potential benefits.

Radiological costs were marginally lower than that of microbiology for all patients. The majority of radiological costs were accounted for by chest X-rays, and to a lesser extent, brain and chest CT scans. The National TB Control Programme requires that microscopy (three sputa smears) rather than chest X-rays be used for diagnosing PTB. However, at all levels of care it was found that, in addition to microscopy, chest X-rays were still being used quite frequently for diagnosis. Although patient-specific costs, particularly radiology, account for a small percentage of the overall costs for patients with TB/HIV co-infection, the rational and appropriate use of lab investigations is important in an environment of limited resources.

4.2.2 Drug Costs

In the management of HIV/AIDS patients, primary prophylaxis for the prevention of opportunistic infections has been limited to the use of co-trimoxazole upon diagnosis (only asymptomatic patients) and isoniasid (INH) against TB for those in Stage 4 or for those with a CD4 count of less than 200.

The use of co-trimoxazole at all levels is important and highly cost-effective. A recent study by Badri et al. (1999) found that increased use of this drug could play a role in extending the life of patients, particularly at the more advanced stages of HIV/AIDS. The provision of co-trimoxazole for patients with an AIDS-defining condition or with a CD4 count of less than 200 was found in all the facilities, especially the primary level facilities. At the secondary and tertiary levels, patients presenting in stages 3 and 4 were given a daily dose of co-trimoxazole. As a prophylactic drug, co-trimoxazole is a highly cost-effective intervention that costs less than 10 cents a day and decreases the incidence of several of the opportunistic infections including PCP (pneumocystis carinii pneumonia), toxoplasmosis, bacterial pneumonia, bacteraemia, and isosporiasis (Grimwood and Maartens 1998).

The provision of oral supplements was relatively high at the primary level facilities, particularly at Guguletu Clinic. Oral supplements included multivitamins, Vitamin C, Vitamin E, and Vitamin Bco. This was considered necessary especially in cases where a normal diet alone could not meet the nutritional requirements of the patients, particularly in poorer communities. Katabira and Wabitsch (1991:S150) argued that, “good nutrition and a balanced diet are prerequisites for good health and may directly affect morbidity and mortality in AIDS patients.” The average cost per prescription of oral supplements was estimated to be less than R15.00. If the provision of these supplements does yield certain benefits in terms of reducing morbidity and mortality, it might prove cost-effective in the management of HIV-infected patients.

4.2.3 Personnel Costs

Personnel accounted for the largest single item of expenditures across all levels of care. The extent to which this study can comment on issues around appropriate staff mix, staff needs, and the efficient allocation of them in relation to HIV/AIDS care is limited. However, a cursory look at the average cost of clinical personnel (doctors and nurses) indicates that the personnel costs at the inpatient level significantly outweigh that of the OPDs and primary level facilities.

The average inpatient clinical personnel cost per admission was R2,937.04 (GSH) and R2,407.67 (Conradie). Average clinical personnel costs per visit at the OPD clinics ranged from R55.98 (GSH OPD) to R62.33 (Conradie OPD). In comparison, costs were significantly lower at the primary level and ranged from R36.50 (Guguletu CHC) to R41.07 (Nomzamo clinic). These results must be viewed with caution. First, the average costs between the services being provided by the hospitals, OPDs, and primary level services differ significantly. The hospitals were seeing patients who were in most instances more severely ill and could not be treated at the primary levels. Secondly, significantly higher inpatient clinical personnel costs reflect mainly the length of hospitalisation in terms of inpatient days, as well as the presence of more specialists and highly qualified personnel at the hospitals, particularly at the tertiary hospitals. Finally, a comparison among facilities operating at the same level (e.g., primary level) is also limited since these costs are not adjusted for case mix and severity of illness. Despite these limitations, the cost differentials highlight the importance of high-quality and effective services at the primary level of care to avoid unnecessary hospitalisation.

4.2.4 Average Length of Stay

The number of inpatient days was the main cost driver at both the hospitals. The average length of stay (ALOS) for patients admitted to Conradie Hospital was 8.14 days, which was on average slightly longer than those admitted to GSH (7.78 days). One would expect this to have been different considering that patients admitted to a tertiaty hospital generally tend to be sicker and require more specialised and expensive care. The differences in ALOS between the hospitals might be due to differences in treatment protocols and practices between the hospitals.

The ALOS, especially at Conradie Hospital, is likely to be explained by delays experienced in shifting patients to referral facilities because of a shortage of beds. These delays, particularly at Conradie Hospital, were most often experienced for TB patients, who were referred to Brooklyn Chest Hospital. The appropriate and efficient use of hospital services is imperative considering the rationalisation and downsizing of tertiary and academic hospitals, with increasing emphasis on the primary care services. The possibly of increasing the bed capacity at Brooklyn Chest Hospital needs further consideration, especially in relation to alleviating the load on the secondary and tertiary facilities.

Stepping up the discharge and referrals of these patients has potential advantages. First, it has important cost-saving implications, considering that the costs-per-inpatient day at GSH and Conradie Hospital were R673.37 and R500.14, respectively. Secondly, it frees up beds for others requiring inpatient care. However, although the speed of discharge and referral of patients yields cost-savings, the objective should not be to shift responsibility to other levels of care, especially where the capacity to absorb them is severely constrained. Ideally, the process should be managed within a well-functioning referral system, with appropriate and clear guidelines for the referral and transfer of patients and the capacity to care for those patients. Standardised treatment protocols and discharge

policies based on case mix groups and severity of illness have the potential to provide benefits in terms of increased efficiency and cost savings.

4.3 Geographic and Financial Access of Health Facilities

Geographic accessibility varied considerably among facilities. Among those respondents attending hospital OPD clinics, 65 percent took more than 30 minutes to reach the facilities. The primary level facilities were more accessible, with the majority of respondents (79 percent) travelling 30 minutes or less to reach the facility. Further, more than 60 percent of the respondents attending services at the primary level did not pay for transport, in contrast to almost 60 percent who paid to reach the OPDs (Conradie and GSH). This suggests that, at the primary level, the time and financial costs of seeking care posed minimal obstacles. Issues concerning waiting time, interpersonal relations, and perceived quality of care are likely to be the factors that would discourage (if at all) people from using the services at the primary level.

Accessing health services becomes more problematic as HIV infection progresses from asymptomatic to symptomatic since those infected finding it increasingly difficult to carry out normal activities and become bedridden at the end stages of the disease. This is important considering that 53 percent of those attending the primary facilities walked to the facilities. For many of them, as the disease progresses and they become increasingly ill, it would be difficult to reach the facility on foot. This is likely to be a barrier to care, especially for those who have poor or no access to transport. In such cases, the provision of home-based care and home visits becomes increasingly important.

4.4 Patient Satisfaction: Quality of HIV/AIDS Services

Information on patient satisfaction should be treated with caution. Since the interviews were carried out after the consultation, patients' responses are subject to "courtesy bias," which occurs when they do not want to appear to be ungrateful or rude for the services they have received. Questions relating to whether they found the "*doctor was easy to understand*," were "*comfortable with the language that the doctor used,"* and were "*satisfied with the duration of the consultation*" scored relatively high. It is uncertain whether this is a true reflection of the respondents' opinions or whether it is a case of courtesy bias.

Across all facilities, with the exception of Conradie INP, overall patient satisfaction was high. More than half of the respondents rated various aspects of the health services (staff attitudes, drug availability, cleanliness of wards, quality of food) as "*good.*" Respondents' views about quality of service indicated that in addition to good interpersonal relations with health personnel, they perceived facilities to be of good quality if the facilities had, for example, adequate drugs and were clean. Dissatisfaction with regard to drugs often related to an insufficient amount of drugs being prescribed and failure of the drugs to improve their health. In some instances, respondents believed that the drugs actually made them sicker. This was most frequently mentioned by inpatients, especially those in the more advanced stages of the disease. Their dissatisfaction reflects their need for a cure for the disease, beyond one that is palliative in nature.

Questions relating to the patient's choice of provider and reasons for seeking care offer more useful and detailed information regarding factors influencing utilisation. In addition to quality of care, other factors such as the perceived effectiveness of medication received, staff attitudes, and patient's

preference for maintaining anonymity, especially in relation to fear of discrimination, are important in influencing choice of provider.

With regard to staff attitudes, a large number of patients across all facilities indicated that they were pleased with interactions they had with the health personnel. Staff were often described as "*kind*," "*caring*," "*nice*," "*helped* [them] *to feel better*," "*spoke nicely*," and in some instances had supported patients emotionally to the extent that one respondent reconsidered her decision to commit suicide.

During the course of the interviews, it was discovered that in some instances patients feared discrimination and prejudice not only from the community, but from the health workers as well. An inpatient with AIDS indicated that after being diagnosed with HIV at a hospital OPD in 1996, she had not sought treatment at a health facility again, because the "*nurses had laughed at me*."[8] Sadly, her next encounter with health services was three years later when she was admitted to the hospital with full-blown AIDS. It would be unfair to generalise this finding to the health services as a whole, but the fact that a patient had cited health worker discrimination as a reason for not seeking care is a cause for concern and should not be ignored.

Equally disturbing was the issue of patient confidentiality. At one of the facilities in the study, the nurses had indicated that patient confidentiality had been compromised through disclosure to community members by one of the staff. This resulted in the affected patients failing to return to the facility. In this case, the staff member lived in the vicinity of the clinic. Here again, this finding cannot be generalised to the other facilities, but it does require further consideration. Patient confidentiality and the protection of the rights of people with HIV/AIDS are severely compromised by incidents such as these. In communities where awareness about HIV/AIDS is limited and those who are infected are stigmatised and ostracised, the implications of disclosure can be devastating, even fatal. This is evident from the murder of Gugu Dlamini after she disclosed her HIV-status publicly in 1998. Although laws such as the Employment Equity Act and Medical Schemes Act make explicit provision for the protection of rights of those with HIV/AIDS, the extent to which such legislation can protect those affected and reduce discrimination at a more personal and/or community level is limited, as is evident from the Dlamini incident.

In relation to the question of anonymity and privacy, issues of stigmatisation and fear over being discovered as having HIV/AIDS is a difficult and complex issue to address. This study was not able to establish accurately the extent to which patients attempted to prevent others in the community from finding out about their HIV status by preferring to visit health facilities further from home. It was not uncommon for patients to reveal during the interview that their families and friends were unaware that they were infected with HIV/AIDS, and they did not want this information to be disclosed to them. One of the respondents indicated that she had walked for more than two hours to reach the clinic, despite having a facility closer to her home. This suggests that despite the advantages in terms of proximity and costs of seeking care at facilities close to home or work, people with HIV/AIDS might sacrifice this and sometimes not seek care at all to protect their privacy and not compromise their position in the community.

Issues concerning discrimination and fear can only be addressed by raising awareness of the disease. As Ateka (1999) noted, "stigmatisation is an expression of human attitude which cannot be legislated. "It was startling to find through this study that approximately 20 percent of the respondents were unaware that sexual intercourse is one of the modes of transmission for HIV, and almost half of

[8] Patient number 46 from Conradie Hospital Inpatients

them were not aware that transmission could be avoided by using a condom. The South Demographic and Health survey (1998) found that knowledge of AIDS was poor with approximately only 10 percent of women stating that they could protect themselves against HIV/AIDS by using a condom during sexual intercourse and by having only one partner. In many of the facilities surveyed in the present study, staff commented that despite patients having been "educated" about the disease, some failed to internalise the information. This might be due to their being in denial and unable to accept their HIV status. The importance of raising awareness cannot be overemphasised. One of the key components of the National Aids Plan in addressing the spread of HIV has been that of education and prevention. It can be argued that the inability of the NDoH to effectively raise awareness of HIV/AIDS has played a key role in not being able to successfully curb the epidemic. In this context, ignorance of HIV/AIDS and how it is spread remains a problem and those who are infected are in many instances isolated and ostracised from their communities.

From a health service point of view, issues of confidentiality and fears of discrimination from both the community and health workers can pose significant barriers for those seeking care, especially if such discrimination is extensive and widespread. The implications of this are that people with HIV/AIDS might bypass the health facilities, especially the primary facilities that are located in their communities. The extent to which people with HIV/AIDS do not seek any care is not known, but it probably does occur as well.

Because of these barriers to seeking care, people bypassing primary level facilities, and even not seeking care at all, undermines the effective functioning of the referral system. Within a primary health care approach, the primary care facilities have been recognised as the point of entry for those seeking care. They enable the early detection and management of opportunistic infections, thereby reducing morbidity and the number of hospital admissions. This is also the level of care that is generally the least costly. Patients are encouraged to utilise the facilities at this level, and they only seek care at higher levels upon referral or in the case of emergencies. This is of particular relevance to attempts to improve primary level facilities so that services are used appropriately and rational referral patterns are maintained.

5. Conclusions and Recommendations

5.1 Conclusions

More than half of the respondents were found to be in the more advanced stages of HIV infection, with a higher proportion of them requiring inpatient care. The extent to which the length of stay and expensive hospital inpatient care (especially for terminal patients) could be reduced through appropriate discharges to hospice services and home-based care should be considered further.

TB/HIV co-infections were high, with hospital personnel reporting that a significant number of the TB inpatients were reactivated cases. The most frequent cause cited for reactivation was poor compliance with TB treatment at the primary levels. The improved and continuous use of TB prophylaxis is regarded as critical in significantly reducing the risk of progression from asymptomatic to AIDS and reducing the number of patients requiring inpatient care.

The costs of HIV/AIDS care were significantly higher at the inpatient level than they were for ambulatory care. At the inpatient level, delays in referring patients to other facilities (e.g., Brooklyn Chest Hospital) because of bed shortages were frequently cited as a factor contributing to longer admissions than expected. Improvements in the referrals and discharge of patients can yield cost advantages, but it should be managed within a well-functioning referral system, with adequate capacity at the referral facilities.

Overall, patient satisfaction was high in relation to perceived quality of care. The extent to which this is influenced by "courtesy bias" is not known. Respondents identified good interpersonal relations, drug availability and effectiveness in terms of relieving the pain and providing a cure, and cleanliness of the facilities as indicators of good quality of care. Overall, the respondents were satisfied with their interactions with the health personnel. However, fears of discrimination from staff in addition to the community and patient confidentiality being compromised were in some instances identified as a barrier to care. To avoid being identified as being HIV positive, patients often sought care at a more distant facility. This may undermine the effective functioning of the referral system within the primary health care approach. Moreover, for many of these patients, seeking care further away from home is likely to involve increases in transport costs and pose a further barrier to care if the costs are significant. This situation is exacerbated as the disease progresses and patients can no longer care for themselves or seek help and care at the usual health facility.

Regular visits to health care facilities can yield several benefits (Harley 1999):

> Patients who regularly see a doctor competent in dealing with HIV live longer.

> Patients comfortable with accessing a facility will present earlier when symptoms appear.

> Patients receiving regular support from health facilities are less likely to feel isolated.

> Prophylaxis in the form of medication and advice reduces morbidity and morality.

5.2 Recommendations

Standard Treatment Guidelines

Standard treatment guidelines are urgently needed for the management of HIV/AIDS patients at all levels of care. Guidelines should clearly define conditions for referrals from the pimary level to the secondary and tertiary levels, as well as the transfer of patients to TB facilities, home-based care, and hospices.

Improving the Procedures for the Referral and Discharge of Patients

Treatment protocols are essential for guiding clinicians in procedures of diagnosis, treatment, referral, and discharge (at the hospital level). This study has demonstrated that the cost of inpatient care, particularly at the tertiary level, significantly outweighs that of ambulatory care. Resource constraints require more efficient use of the services. Where appropriate, inpatient costs can be reduced by discharging patients sooner to inpatient specialist facilities (e.g., Brooklyn Chest Hospital), primary facilities with follow up at the hospital OPD, and home-based care and hospices in the case of terminal patients.

Improved Focus on the Primary Level

In a resource-constrained health care system, it is imperative that the focus be on the primary care level. This is the level where patients with HIV who are still in the early stages of the disease can be better managed, with more complicated and severely ill patients being referred to the secondary and tertiary levels for diagnosis and management. The perceived quality of hospital services seems to be the reason why many choose to use them. If the services are to be used appropriately, and rational referral patterns operationalised, it is vital that primary level services be improved. This is why it is important to look at differences in patient perception between facilities.

HIV/AIDS and TB

Considering the fatal relationship between HIV/AIDS and TB, close collaboration between the respective departments in the NDoH is essential. Recognising that patient compliance with TB therapy is poor, increased and special efforts are crucial in ensuring improved complaince under the DOTS programme. TB prevention among newly diagnosed patients is essential. This can be addressed through continued use of INH prophylaxis at the primary levels in reducing the development and spread of TB, as well as slowing down disease progression.

Community and Staff Attitudes

Fears concerning discrimination from both the community and health personnel are potentially important barriers to care. There is a need for increased awareness through improved educational programmes, which should take cultural issues into account. Improving staff attitudes in facilities where discrimination is found to be a problem is essential if patients with HIV/AIDS are to be managed in a supportive and caring environment.

Annex A: Patient Exit Interview

[A1] Questionnaire number:

[A2] Name of Facility _____

Patient Exit Interview

Instructions to interviewer: Obtain the consent of the patient before proceeding to interview him/her. **Read greeting:**

Hello. I am ..... from the Health Economics Unit, at the University of Cape Town. We are trying to find out if the money spent on caring for patients with HIV/AIDS is being properly spent.

I would like to ask you some questions about the visit you have just had with the (health facility staff), and some questions of a personal nature. These questions will relate to your income and the costs associated with your care.

I will not write down your name, and everything that you tell me will be kept secret. You do not have to take part in this study. If you do take part, you do not have to answer any question or group of questions, and you may stop the interview at any time. The information that you provide is strictly confidential and will be used for the purposes of this study only. If you have any questions about the study, I will be happy to answer them. If you decide not to take part, I assure you that this will not affect the quality of care that you receive here.

May I continue?

[A3] Name of Interviewer_____

[A4] Interview Date_____(dd/mm/yy)

[A5] Time interview started:_____ [A6] Time interview ended:_____

Introduction: I would like to ask you questions about yourself, where you live and whom you live with.

B Socioeconomic/demographic Patient Information

B1 Gender of respondent (cross the appropriate box)

Male	1
Female	2

B2 How old will you be at your next birthday?

B3 Where do you live?

Dwelling	Cross (X) the appropriate box
Formal dwelling	1
Traditional dwelling/hut	2
Informal dwelling	3
Room in hostel/compound for workers provided by employer or municipality	4
Other (specify).....	5

1. *Formal dwelling* to include: house on a separate site, dwelling in a block of flats, town/cluster/semi-detached house, and house/flat/room, in back yard.

2. *Informal dwelling* to include: shack in back yard, and shack in an informal settlement.

B4 What is your marital status?

Marital status	Cross (X) the appropriate box
Married	0
Living with partner	1
Single	2
Divorced	3
Widowed	4
Separated	5
Do not know	98

B5 How many people live with you in your home?

Household members	Number
Children	
Adults	

B6 What kind of work do you do?

Employment status	Cross (X) the appropriate box
Employed full-time	0
Employed part-time	1
Self employed	2
Pension	3
Disability grant	4
Other type of grant	5
Still at school	6
Not working at all	7
Do not know	98

B7 Do you have any formal education?

Level of Education	Cross (X) the appropriate box
No schooling	0
Primary school [sub A (grade 1) - std 5]	1
Secondary school (std 6 - std 10], but not complete	2
Standard 10	3
Degree/ diploma	4
Do not know	98

B8 What is *your* average monthly income?

R.....

B9 What is the estimated household/family monthly income? (excluding respondent's income)

R.....

B10 How many people depend on this household income?

Introduction: I would like to ask you about your visit to the facility today.

C. Patient's Perception of Quality of Services

C1 How long did you wait before seeing the doctor/health worker?

_____Hour(s) and / or _____minutes

C2 Is this more or less how long you normally wait to see the doctor/health worker, or do you normally wait for a longer or shorter time?

Waiting time	**Cross (X) the appropriate box**
More or less the same time as usual	1
Shorter than usual	2
Longer than usual	3
Not sure	98

C3 Were you satisfied with the time that the doctor spent with you?

Yes	1	No	2	Unsure	98

C4 During the consultation, did you feel that the doctor was easy to understand when explaining things to you, or did you feel that he/she was difficult to understand?

	Cross (X) the appropriate box
Easy to understand	1
Difficult to understand	2
Do not know	98

C5 In your opinion, did you have enough privacy during your consultation with the doctor?

Yes	1	No	2	Unsure	98

C6 Were you comfortable with the language that the doctor used?

Yes	1	No	2	Unsure	98

C7 Would you have preferred another language?

Yes	1	No	2	Unsure	98

C8 As a patient diagnosed with HIV/AIDS, are you satisfied with the health services that you receive at this facility?

Yes	1	No	2	Unsure	98

C9 If the respondent answered NO to Q.C8, what are the reasons?

_____

_____

_____

_____

_____

C10 How would you rate the following aspects of the hospital/clinic? Cross (X) the appropriate box.

		Poor	Fair	Good	Very Good	Excellent
1	Drug availability					
2	Doctor's attitude					
3	Nursing staff's attitude					
4	Health educator's attitude					
5	Availability of staff (doctor, nurses, health educator)					
6	Cleanliness of facility					
7	Overall perception of services at facility					

C11 Would you recommend the service to other people with HIV/AIDS?

Yes	1	No	2	Unsure	98

C12 How do you believe that the services at this facility can be improved?

_____

_____

_____

_____

C13 Has the staff (doctor, health educator, and nurses) helped you to accept (come to terms with) your HIV status?

Yes	1	No	2	Unsure	98

C14 If YES, in what way did they help?

_____

_____

_____

C15 If NO, how do you think they could help?

_____

_____

_____

C16 Since being diagnosed with HIV/AIDS, have you visited any other health care providers, besides this facility?

Yes	1	
No	2	Go to C19

C17 What kind of facility(ies) have you visited, and what were the number of visits?

Health Care provider	No of visits
Private GP	
Traditional Healer	
Clinic (specify).....	
Community Health Centre / Day hospital; (specify).....	
Hospital (specify).....	
Pharmacy	
Other (specify).....	

C18 If you visited other health care providers, what were the reasons?

Reasons for visiting other health care providers	Cross (X) the appropriate box(es)
Closer to place of residence /work	1
Took less time to get there	2
Shorter waiting time/queues	3
More convenient opening and closing times	4
Better quality of care	5
Received more medication	6
Friendlier and more caring staff	7
More privacy / anonymity	8
For a second opinion	8
Referred there	10
Other (specify).....	11

C19 Is there another facility that is nearer to your home/work where you could have gone for the same HIV/AIDS services?

Yes	1	No	2	Unsure	98

C20 If YES, why did you visit this facility and not the other?

_____

_____

_____

Introduction: I would now like to ask you what you know about HIV/AIDS

D HIV/AIDS knowledge

As far as you know, what are the ways that people get HIV/AIDS?

		Yes (1)	No (2)	Unsure (3)
D1	Donating blood			
D2	Through sexual intercourse			
D3	Through sexual intercourse using a condom			
D4	Through an injection from the doctor			
D5	Sharing items like blades or needles			
D6	Mother to baby			
D7	If both partners are HIV+, do you think they should still use a condom with each other?			

E Community /Household Costs

E1 How long did it take you to get here today?

.....hours.....min

E2 Indicate how you got here *today*.

Mode of transport	**Today** **(Cross (X) the appropriate box)**
On foot	1
Bus/taxi	2
Bicycle	3
Private car	4
Other (specify).....	6

E3 Indicate how you *usually* get here.

Mode of transport	Usually (Cross (X) the appropriate box)
On foot	1
Bus/taxi	2
Bicycle	3
Private car	4
Other (specify).....	5

E4 Did you have to pay for transport?

Yes	1	
No	2	Go to E6

E5 How much did you pay? (The price of the return ticket)

R_____

E6 Since being diagnosed with HIV/AIDS, have you experienced any of the following:

	Indicate either Yes or No	
	YES	NO
Increased medical expenses		
Increased absenteeism from work		
Increased absenteeism of other household members from work/school		
Loss of respondent's income		
Loss of other household member's earnings as a consequence of caring for respondent		
Other Specify.....		

E7 If you are no longer working, what are the reasons?

_____

_____

_____

Annex B: Patient History

(To be completed by Medical Officer)

M1. Name of medical officer: _____

M2. Patient folder number:

M3 Questionnaire number (to be entered by the interviewer):

M4 WHO HIV disease stage classification (1,2,3,4) *[refer to attched WHO guidelines]*

_____

M5 Clinically diagnosed HIV-related illnesses

1. _____

2. _____

3 _____

4. _____

M6 Date of first positive test

_____(dd/mm/yy)

M7 Total number of visits including current visit

M8 List all treatment regimes (include all medication, ointments, dressings, etc) for this visit.

M8.1 List all Chronic (routine) medication [e.g. bactrum, multivitamin, etc] prescribed.

_____

_____

_____

_____

_____

_____

_____

_____

M8.2 List all Acute medication or medication prescribed for a specific condition.

_____

_____

_____

_____

_____

_____

_____

_____

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