# THE IMPACT OF HIV/AIDS ON THE HEALTH SECTOR

## NATIONAL SURVEY OF HEALTH PERSONNEL, AMBULATORY AND HOSPITALISED PATIENTS AND HEALTH FACILITIES, 2002


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This is a complex area in which a lot still remains unknown especially in the area of impact. We hope this study will add to our growing understanding so that the capacity of planners is enhanced.

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# Contents

## Appendices and references 136



## Tables

## Figures

# Abbreviations

| | |
|---|---|
| ART | Antiretrovirals |
| AZT | Zidovudine (ZDV) |
| CDC | Centers for Disease Control and Prevention |
| CVr | Coefficient of relative variation |
| Deff | Design effect |
| DoH | Department of Health |
| EIA | Enzyme immunoassays |
| FWC | Fieldwork co-ordinator |
| HAART | Highly active antiretroviral therapy |
| HASA | Hospital Association of South Africa |
| HIV/AIDS | Acquired human immunodeficiency virus |
| HSRC | Human Sciences Research Council |
| ICD-10 | International classification of diseases |
| INH | Isoniazid |
| MEDUNSA | Medical University of South Africa |
| MOS | Measure of size |
| MOU | Maternity obstetric unit |
| NNRTI | Non-nucleoside reverse transcriptase inhibitors |
| NRTI | Nucleoside reverse transcriptase inhibitors |
| NSPH | National School of Public Health |
| NVP | Nevirapine |
| PACTG | Paediatric AIDS clinical trials group |
| PCP | Pneumocystis carinii pneumonia |
| PHC | Primary Health care |
| PEP | Post exposure prophylaxis |
| PHC | Primary health care |
| PMTCT | Prevention of mother-to-child transmission |
| PSU | Primary sampling unit |
| PV+ | Positive predictive value |
| PV- | Negative predictive value |
| SE | Standard error |
| Stats SA | Statistics South Africa |
| STD | Sexually transmitted disease |
| TAC | Treatment Action Campaign |
| TB | Tuberculosis |
| VCT | Voluntary counselling and testing |
| WHO | World Health Organization |

# Executive Summary

## Introduction

South Africa is estimated to have the largest number of people living with HIV/AIDS in the world. The *Nelson Mandela/HSRC study of HIV/AIDS* (2002) reported an estimated HIV prevalence of 4.5 million persons aged two years and older. The epidemic results in high morbidity and mortality. Given the overall impact of HIV/AIDS on South African society, and the need to make policies on the management of those living with the disease, it is important that studies are undertaken to provide data on the impact on the health system. Most people who were infected seven years ago are expected to become ill, and therefore the patient load is expected to increase. Given this scenario, South Africa needs data to assess the impact of HIV/AIDS on the health system to assist decision-makers and programme planners to make policies to ameliorate this impact.

## Objectives

The HSRC and the National School of Public Health (NSPH) at the Medical University of South Africa (MEDUNSA) responded to Tender No GES 38/2000-2001 called for by the Department of Health (DoH) to achieve the following specific objectives:

- Determine the current status and projected morbidity and mortality among South African health workers;
- Estimate the number of persons with AIDS using public health services in South Africa and determine the demographic profile of these patients;
- Identify the health services most severely affected by HIV/AIDS, estimate and project important health service indicators such as drug utilisation, bed occupancy and length of stay in hospital;
- Determine the impact of HIV/AIDS on human resources by focusing on training, staff morale, workload, working hours and absenteeism;
- Estimate the total cost of administering preventive therapy to newborns and pregnant women at different levels of the health care system.

## Research questions

To achieve these objectives, a series of studies were conducted to generate empirical data that could be used for planning and management of HIV/AIDS. These studies answered the following three broad questions:

- To what extent does HIV/AIDS affect the health system?
- What aspects or sub-systems are most affected?
- How is the impact going to progress over time?

## Method

To answer these questions we drew a probability sample of health facilities and patients – specifically, a stratified cluster sample of 222 health facilities representative of the public and private health sector in South Africa was drawn from the national DoH database on health facilities (1996). We designed a sample to obtain a nation-wide representative sample of medical professionals i.e. specialists and doctors, nursing professionals and other nursing staff, other health professionals such as social workers and physiotherapists, non-professional health workers such as ward attendants and cleaners, and adult and

child patients. From these sampling frames, a representative probability sample was obtained of 2 000 patients, as well as a representative probability sample of 2 000 health workers treating patients, at public and private health facilities.

In this report we present results from data collected in all nine provinces.

Data were collected through a series of questionnaires. With respect to HIV testing, we conducted an anonymous linked HIV survey in the Free State, Mpumalanga, Northwest and Kwazulu-Natal. We tested oral fluids for HIV antibodies at three different laboratories. These results were linked with the questionnaire data using bar codes.

## Results

We found that the HIV/AIDS epidemic has an impact on the health system through loss of staff due to illness, absenteeism, low staff morale, and also through the increased burden of patient load.

### HIV prevalence in health workers

We found that an estimated 15.7 per cent (CI 95%: 12.2–19.9 per cent) of health workers employed in public and private health facilities located in the Free State, Mpumalanga, KwaZulu-Natal and North West, were living with HIV/AIDS in 2002. Among younger health workers, the prevalence is much higher. This group (aged 18–35 years) had an estimated HIV prevalence of 20 per cent (CI 95%:14.1–27.6 per cent).

This suggests that, in the absence of life-prolonging drugs such as anti-retroviral therapy, the country can expect to lose at least 16 per cent of its health workers to AIDS in the future. The impact is likely to be felt severely because it is younger health workers (18–45 years) who have higher HIV prevalence ratios than older health workers.

### Absenteeism among health workers

In the survey, we found 16.2 per cent of the respondents had been treated for stress-related illnesses. Of these, 63.9 per cent had to take sick leave.

### Low staff morale

We found that a third of health workers (33.8 per cent) had low morale due to several factors, including stressful working conditions, heavy patient workload, staff shortages and low salaries.

### High HIV prevalence among patients served

We also found that 28 per cent (CI 95%: 22.5–34.2 per cent) of patients served in the public and private health sectors in the four provinces surveyed were HIV positive. When the HIV prevalence was examined in hospitals separately from primary care facilities, the figure was much higher at 46.2 per cent (CI 95%: 37.9–54.7 per cent). These AIDS

patients stayed in hospital longer (mean length of stay: 13.7 days) than the non-AIDS patients (mean length of stay: 8.2 days). Longer stays are associated with higher costs to health services.

**Increased patient load**

The study results showed that overall there has not been an increase in the mean number of admissions to the medical wards of all patients (AIDS and non-AIDS) reported between 1995 and 2000. However, based largely on medical records, there has been a very large increase in the mean number of HIV/AIDS-related admissions between 1995 and 2000. The study also found that 94.6 per cent of health facilities indicated that over the last five years there has been an increase in patients seeking clinical care for HIV/AIDS-related illness, and 97.1 per cent indicated that the number of admissions for HIV/AIDS clinical care have also increased. We found that 73 per cent of health workers surveyed reported that there was an increase in workload. The heaviest burden fell on professionals (81 per cent). About a third of these health workers indicated the workload increased by 75 per cent of the usual workload in the last year. Interestingly, during this period, the total bed occupancy rates have remained about the same. These results suggest that non-AIDS patients have been 'crowded out' of the health care system to give way to HIV/AIDS patients. This 'crowding out' effect is largely in the public health sector, where the bed occupancy remained in the upper 80s or lower 90s. The private hospitals have not been affected as much, although their bed occupancy rates have remained relatively low, increasing from 49.1 per cent in 1995 to 53.6 per cent in 2000.

We also asked whether health facilities had their own policies for dealing with HIV/AIDS. We found that only 42.4 per cent of all health facilities had their own official HIV/AIDS policy and 13.7 per cent did not even know whether they had an official policy on HIV/AIDS. We also asked if they had seen the government's plan on HIV/AIDS and found that a mere 19.3 per cent of managers of 220 health facilities surveyed had seen the 2000–2005 National HIV/AIDS plan. Some 43 per cent of the public hospital managers had seen it, while only 19 per cent of the primary health care centers and 7.8 per cent of the private sector managers had seen it. As the implementers of the health services component of this plan, it is expected that they have access to this key document. What is encouraging is that 66.5 per cent of health workers had access to the Department of Health's (DoH) guidelines on HIV/AIDS care. However, only 38.8 per cent of managers in the private health sector had access to these guidelines on HIV/AIDS care.

To assess the ability of the health care system to cope with the demand for HIV/AIDS care in South Africa, we measured the per cent of health facilities needing more staff to cope with the patient load and found that nearly 80 per cent of all health care facilities expressed the need for more staff to cope with the demand for HIV/AIDS care. The need was highest in public hospitals, followed closely by primary health care facilities, and least in the private hospitals.

**Affected sub-systems of the health care system**

The sub-systems of the health care system affected are primary health care, secondary, tertiary and academic state hospitals (grouped as public hospitals), and the private health system. The results are summarised below.

*Primary health care system*
The primary health care (PHC) system is not immune to the impact of the HIV/AIDS epidemic. The study results revealed that 25.7 per cent (CI 95%: 19.8–32.5 per cent) of the patients served in the four provinces were living with HIV/AIDS. AIDS patients stay longer in district hospitals (mean length of stay: 20.3 days) than non-AIDS patients (mean length of stay: 5.2 days).

*Private health sector*
The private sector is also affected because 36.6 per cent (CI 95%: 21.3–55.4 per cent) of the patients were HIV positive. However, the private sector seems to have room to absorb the impact because the bed occupancy rate is still low. The high user rates probably prohibit frequent and extended stays in hospitals. Indeed, the private health sector had the shortest length of stay in hospital for both AIDS and non-AIDS patients, 6.3 per cent and six per cent respectively.

*Public health sector*
The burden on the health care system is felt most in public hospitals, where 46.2 per cent (CI 95%: 37.9–54.7 per cent) of the patients served in the medical and paediatric wards tested positive for HIV. Unlike district hospitals, which keep AIDS patients longer in hospital, public hospitals keep their AIDS patients for shorter periods. Moreover, the non-AIDS patients stay longer in hospital than the AIDS patients, suggesting that some hospitals have a policy of stabilising and then discharging them.

*Supply of equipment to treat HIV/AIDS patients*
When we assessed the capacity of the health care system to cope with HIV/AIDS patients, we investigated the extent to which health facilities were adequately equipped to provide necessary services. The results showed that the private sector, followed by primary care facilities, were least equipped to provide testing for HIV because 75.5 per cent of the private facilities and 59.2 per cent of the PHC facilities reported never to have HIV test kits in stock. This means that they were more likely to send their patients to be tested elsewhere, suggesting that most patients are unlikely to return to the facility to obtain their results. We found 32.1 per cent of the public hospitals were not equipped with HIV test kits. Rapid testing would increase the uptake of VCT services that are being expanded throughout South Africa.

Most health care facilities stocked syringes and needles, protective clothing and gloves most of the time. However, nearly one in five private sector health facilities did not have protective clothing and gloves to prevent infections or cross-contamination.

Only 65 per cent per cent of all health facilities have an adequate supply of sterilising equipment 75–100 per cent of the time. The shortage was highest in PHC facilities, where 30 per cent never stocked sterilising equipment. The absence of sterilising equipment in a health care facility suggests that patients are at risk of contracting hospital-acquired infection. Low temperature sterilisation is an essential tool for the sterilisation of heat labile clinical and diagnostic equipment such as endoscopes and surgical instruments. Disinfectants and frequent hand washing are among the most simple and applicable ways of reducing hospital-acquired infections. Health workers also indicated that they did not obtain sufficient training in infection control systems. For the health care system to cope adequately with HIV, it is critical that infection control systems be improved.

*Drug supply system*
The burden on the public health care system is also felt in the drug supply system. Drugs were available to treat opportunistic infections and not for prolonging life. The only antiretrovirals (ARVs) available (non-nucleoside reverse transcriptase inhibitors [NNRTI] and nucleoside reverse transcriptase inhibitors [NRTI]) were available for prevention of transmission of HIV from mother to child and/or for post-exposure prophylaxis. The private sector was better equipped with ARVs for treating patients.

The health care system is better equipped to treat tuberculosis (TB) patients. All the anti-TB drugs surveyed were generally available at over 80 per cent of all facilities 75–100 per cent of the time.

Antibiotics were generally available to treat most infections related to HIV/AIDS. However, the supply of antiviral agents for treatment of serious viral opportunistic infections such as herpes, and cytomegalovirus (CMV), was generally very low in all facilities, with the private facilities having the highest availability of these agents.

To manage HIV/AIDS effectively in South Africa, we recommend that a national treatment plan be developed and implemented to reduce the burden of HIV/AIDS on the health sector. The elements of such a plan would include:
- Distribution of the national AIDS plan to all public and private health care facilities;
- Training of health workers to manage HIV/AIDS;
- Staffing ratios;
- Availability of suppliers;
- Drug availability;
- Treatment guidelines;
- Funding of these services.

## Progression of the impact of HIV/AIDS over time

We projected that South Africa will have 416 580 new AIDS cases in 2003. In all we project that since the beginning of the epidemic in 1990, South Africa will have had 2 064 900 new AIDS cases. Some of these people will have died by now. We projected that in 2003, half of these patients will seek care in the public health sector for HIV/AIDS related illness. The impact of such a large number of people seeking clinical care in the public health facility for one disease is substantial.

For this reason, it is recommended that antiretroviral therapy, coupled with food security, improved nutrition, VCT and home-based care, should be the package provided to people with AIDS who are seeking care. This service would be provided in addition to the standard care usually provided to people with HIV/AIDS.

## AIDS mortality

The study found an estimated cumulative overall mortality ratio of 0.185 per 1 000 deaths among health workers. Of the total number of deaths among health workers from 1997–2001, 5.6 per cent were considered to be due to HIV/AIDS-related illness. If another 7.5 per cent of deaths due to TB associated with AIDS are included, according to the registration data, then an estimated 13 per cent of health workers died from HIV/AIDS-

related illness during this period. In this study it was difficult to accurately estimate the number of health workers who died from HIV/AIDS-related illnesses using death notification data because of stigma associated with HIV/AIDS. Despite this difficulty with the registration data, certain patterns emerge from this study. African health workers appear to be more at risk of dying of HIV/AIDS-related illness than health workers in other race groups. Also, nurses and other paramedical personnel appear to have a higher risk of dying of HIV/AIDS than doctors and specialists. It is most likely that, proportionately, Africans are more likely to be nurses than doctors, which may partly be a reflection of disparities in educational attainment that are rooted in the history of the country.

It is recommended that a human resource plan for the South African health sector should consider the attrition of health workers due to AIDS-related mortality. There is a need to train more nurses to compensate for this attrition.