

# Antiretroviral therapy in a South African public health care setting – facilitating and constraining factors

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## Abstract

**Objective:** The objective of the study was to identify and document facilitating and constraining factors in the antiretroviral therapy (ART) programme in a public health care setting in the Eastern Cape, South Africa.

**Method:** Observations for the study were carried out in a district hospital and two down-referral clinics in Makana Local Services Area in the Eastern Cape Province. Two discussion groups with key stakeholders were conducted to gather information about opinions and experiences among the health care providers (HCPs).

**Results:** It was found that the operating ART programme in this setting has been integrated in the existing down-referral health care system, based on follow-up in primary health care (PHC) clinics. Treatment is provided free of charge. The treatment programme provides the patients with access to counselling, nutritional assistance, psychosocial support and social welfare evaluation. However, increasing patient numbers and lack of human resources leads to a heavy workload for the HCPs involved with the ART programme. The need for additional, educated health workers is a major constraint for progress in provision of health care to patients who have accepted their HIV status, and are enrolled, or waiting to be enrolled, on the ART. However, delegation of work tasks among available HCPs and good communication between HCPs in the different clinics is a facilitating factor that ensures efficient use of the human resources available.

**Conclusion:** Taking into account the challenges in a resource-constrained setting, this programme shows potential for functioning well as a provider of ART for those who are able and willing to access it. Considering an already heavy workload for HCPs, limitations and challenges still exist in reaching out with adequate treatment to a greater number of people who need ART.

**Key words:** ART programme, down-referral, HIV/AIDS, primary health care, public health, resource-constrained settings.

## Introduction

Sub-Saharan Africa is the region that is most greatly affected by HIV/AIDS in the world. South Africa is one of the countries with the highest prevalence of HIV in the sub-Saharan region, and has the highest number of people infected with HIV in the world (5,7 million people)<sup>1</sup>. Sub-Saharan Africa also suffers from a shortage of skilled health care providers (HCPs)<sup>2</sup>, which is one of the basic needs in a health care system. A previous study from South Africa has found that HCPs in South Africa have stressful working environments due to increasing numbers of patients together with staff shortages<sup>3</sup>. Triple combination antiretroviral therapy (ART) for treatment of HIV became available in 1996. Although the access to this treatment has been very limited for HIV patients in low and middle income countries<sup>4</sup>, it is now

growing steadily<sup>5</sup>. The goal of the United Nations (UN) is to come as close as possible to universal access for all who need it by 2010<sup>6</sup>.

In November 2003 the Operational Plan for Comprehensive HIV and AIDS Care, Management and Treatment for South Africa (The Comprehensive Plan)<sup>7</sup> was approved. This plan, now supplanted by the National Strategic Plan 2007-2011, promoted distribution of antiretroviral therapy (ART) through the public sector. The public health care system in South Africa is based on primary health care (PHC) principles, with PHC clinics offering first-level care. In 2004, the national ART programme was introduced in the public PHC setting. The ART programme provides the following two ARV treatment regimens in the public sector: 1a/b. Stavudine + Lamivudine + Nevirapine or Efavirenz and 2. Zidovudine + Didanosine + Lopinavir/Ritonavir.

The criteria for treatment initiation as given by the national antiretroviral treatment guidelines are: CD4<200 cells/mm<sup>3</sup> or World Health Organization (WHO) stage IV AIDS defining illness<sup>8</sup>. This is also the criteria for HIV patients to qualify for a disability grant (DG), which is intended for people who are unable to work and support themselves due to their disease.

South Africa has a large inequity in the distribution of human and financial resources between the public and the private health sector<sup>9</sup>. The population in the country is about 48 million people, and medical scheme coverage is only 14%<sup>10</sup>. Despite its low share of beneficiaries, the private sector employs more than 70% of the country's health care specialists, and accounts for more than 60% of the total South African health care spending<sup>11</sup>.

## Objective

The present study was carried out in a public health care setting in the Eastern Cape province of South Africa. The aim of the study was to identify and document facilitating and constraining factors in the operating ART programme.

## Methods & results

### Study setting

The study was conducted in a public health care setting in Makana Local Services Area (LSA) in the Eastern Cape Province of South Africa. The public health system in the area of Makana LSA consists of two district hospitals, 20 PHC clinics, seven mobile clinics and three specialized hospitals<sup>10</sup>. During the time of the study there were seven down-referral clinics in the sub-district where the present study was conducted. These clinics received patient-specific ARVs pre-packed from the district hospital. The PHC clinics operate mostly without doctors, and patients are referred to the district hospital for initiating therapy and monitoring during the early stages. When stabilised on treatment, the patients are down-referred to the clinic closest to their home for continued follow-up and monthly refill of prescriptions. The same down-referral system has been utilised to implement the ART programme. The estimated ART coverage for South Africa is 28 % (2007), and since Eastern Cape is one of the poorest provinces in the country, one can assume that coverage of ART is even lower in this province than the country estimate<sup>12</sup>.

The ART programme in the health care setting we studied was implemented in May 2004, and after two years 687 patients had been enrolled. Seventy percent of these were women, and 52 patients in total had died while on treatment. Since initiation of the programme, 210 patients had been down-referred to PHC clinics. The remaining patients were in their stabilising stage, receiving medication at the district hospital.

### Study participants/centres

The healthcare providers (HCPs) were mainly from one district hospital and two down-referral clinics in the public health in

Makana LSA. The HCPs included in these clinics were all those who were involved in the work with HIV patients, and varied between four and ten among the different clinics. The HCPs from the remaining down-referral clinics in the area, who attended mutual ART meetings at the district hospital during the study period, were also included in the study.

Participant observation was carried out at the three public treatment sites between February and April 2006. Table 1 shows the elements of observations included at each treatment facility. Two group discussions were held in August 2006 with key stakeholders, of whom the majority had participated in preparing the launch of the ART programme in 2004 in Makana LSA. Communication between the researcher and HCPs was carried out in English. Field notes were made by the researcher during the observations. For the group discussions an assistant conducted field notes for cross checking results. Data containing information about number of clinics providing ARVs, provision of ARVs and movement of patients within the system were extracted from the field notes to create a flow chart of the down-referral health care setting.

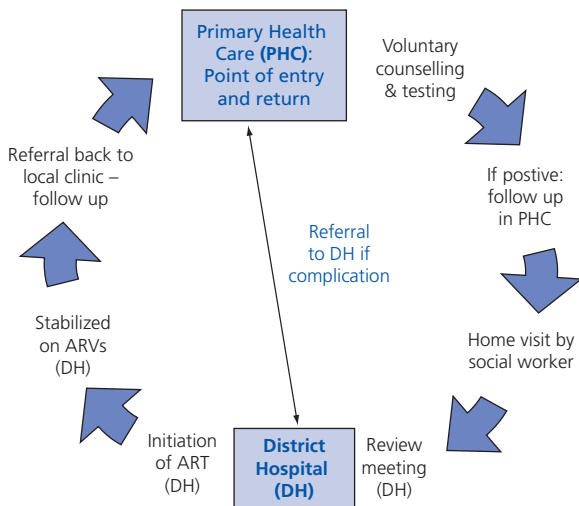
Permission to conduct this study was obtained from Rhodes University Ethical Committee, Makana Municipality Department of Health and Eastern Cape Department of Health. Access to health care facilities for observational studies was allowed by the local authorities.

The HIV patients in this health care setting enter the ART programme via voluntary counselling and testing in a primary health care clinic. Patients who test positive are followed up in the same PHC clinic until eligible for treatment initiation. When ready for treatment, the patients are initiated and stabilised on ARVs at the district hospital, and then referred back to the local PHC clinic for continued follow-up and care. The structure of the ART programme is shown in figure 1.

**Table 1. Observations**

<b>Referral site</b> (District hospital)	Dispensing of ARVs Consultation (patient/doctor, patient/support staff) Adherence counselling (patient/pharmacist) Mutual meetings
<b>Down-referral site 1</b> (Primary Health Care Centre)	Patients' ARV collection (patient/pharmacist)
<b>Down-referral site 2</b> (Primary Health Care Clinic)	VCT (nurse/patient/support staff) Consultation (patient/nurse) ARV collection (patient/nurse)

Figure 1. Patient Flow Chart



## Facilitating factors

### Financial aspects

Voluntary counselling and testing (VCT) and ART are provided free of charge in the public health facilities. The HCPs informed that some patients received a state-provided disability grant (DG) due to their health status. It was the HCPs' impression that the HIV patients were very concerned about their own ability to apply for the DG, and therefore asked questions regarding how to apply for DG. However, the HCPs' experiences were that not all patients who were eligible to apply for a DG were given such financial support. The HCPs also expressed that patients who already received DG were concerned about the risk of losing their DG.

### Accessibility and proximity of testing and treatment

VCT and ART follow-up are available at the patients' local PHC clinics. VCT is carried out at the patients' requests on specific days. To ensure that the patients are ready to undergo HIV testing, special counselling is provided by a community health worker right before the testing. HIV testing is carried out by a registered nurse, and the results are available after 5-10 minutes. In order to give the patients appropriate support and advice according to their HIV-status, all patients receive personal post-test counselling together with their test results. Both individual support and educational material (posters, brochures, and leaflets in the three main languages) are available in the clinics.

### Follow-up and monitoring of patients

All patients who test HIV-positive are entitled to receive follow up in their local clinic. HCPs reported that both CD4 and viral load counts are done every six months after a positive HIV test. This provides indicators for monitoring of a patient's disease progress prior to initiation of ART. During the period when patients are prepared for ART, either a social worker or a community health worker visits the patients at home. A standardised scheme is used for these visits to gather information about the patients' families and economic situations. These home-visits may provide

the HCPs with information about the patients' probable ability to cope with the treatment and the disease.

To ensure that patients are stabilised on ARVs before down-referral to the PHC clinics, the patients are followed up at the district hospital for three to six months after treatment initiation, depending on their condition. It was observed that the down-referral PHC clinics keep records on when the patients are expected to return, and annotations are made when patients do not appear as scheduled. Some patients need to be seen by a doctor after they have been down-referred to the PHC clinic. Various reasons for this are: when patients complain about their health, or there is a suspected adverse drug reaction or a suspected poor response to ARVs. In such cases, patients are either referred to the district hospital, or they can return to the clinic on a specific date when the doctor is scheduled to make a visit.

### HCPs promoting treatment adherence

It was pointed out by one of the HCPs that patients whose disease state has progressed to the WHO stage II are given antibiotic prophylaxis (Co-trimoxazole). By taking antibiotics regularly, patients are also trained practically on adherence. This is part of a patient readiness programme, to ensure that patients are not initiated on ART without being adequately prepared for adherence. To encourage correct drug use, it is also required that patients appoint a personal treatment supporter (usually a friend/family member) prior to treatment initiation.

### Communication and cooperation between HCPs

HCPs have weekly meetings within and between the different health facilities. The major gathering point for HCPs from different health facilities is the weekly review meeting at the district hospital. This meeting provides an opportunity for HCPs to discuss all the new patient cases thoroughly. A nurse from each PHC clinic provides information about new eligible patients' disease states and their treatment readiness, and brings a report from the home-visit. Based on this information, the HCPs discuss appropriate time for treatment initiation. The weekly meetings are, on some occasions, used to provide the HCPs with informal training on topics related to ART. It was also reported by HCPs that they provide in-service training for staff members who are unable to attend workshops/training sessions. The HCPs communicate and make use of each other by referring patients to other HCPs when there are problems beyond their competence.

### Constraining factors

#### HCPs are carrying the burden of a heavy workload

A heavy workload combined with lack of human resources is a challenge in this health care setting. It was reported by HCPs that the programme was operating at its maximum during the time of the study. The programme is growing continuously and according to HCPs from the different health care facilities, extra staff has not been provided as promised after implementation of the ART programme in 2004. One of the HCPs explained

that because of an increased workload at the district hospital after implementation of the ART programme, all non-HIV out-patients are managed at the largest PHC facility. In the study area this facility is referred to as a PHC centre due to additional medical support provided here compared to the other PHC facilities in the study area.

#### **Limited number of highly qualified HCPs**

Few doctors and pharmacists are available in this health care setting, so nurses and support staff are given major responsibility regarding treatment and follow-up of HIV patients. During the time of this study, responsibility for adherence counselling shifted from the pharmacist to a nurse, due to heavy workload for the pharmacist. Because of the high pressure on the ARV clinic, there are several weeks' waiting from the time when a patient's case is presented on the weekly review meeting until an appointment with the doctor for treatment initiation. However, it was observed that special arrangements are made for patients whose need for treatment is considered more urgent than the average.

#### **Few ARVs are available**

The limited selection of ARVs available in the public sector does not allow for individualised treatment, and if both regimens fail there are no further treatment options. HCPs reported that there had been very few defaulters in the programme so far, and ARV resistance was not yet a problem in this setting. Fixed dose combination of ARVs was not available for patients on this programme during the time of the study.

#### **HCPs dealing with complicated patient cases**

Observations in the clinics and discussions during the weekly meeting showed that many of the patients enrolled on the ART programme have special needs, due to their medical condition and the emotional pressure that accompanies the disease. Common challenges for the HCPs are: patients with tuberculosis co-infection or severe disease progress, patients with fear of stigmatisation, patients with complicated family relations or unstable situations at home, and patients with insufficient food and money. One of the HCPs reported that there had been a few situations with patients who found it very difficult to disclose their HIV-positive status to a friend or a family member, with the outcome that treatment initiation had been delayed due to lack of treatment support.

## Discussion

### **A primary health care based ART approach**

The ART programme in our study was integrated in the existing down-referral health care system, based on follow-up at PHC level. This is in accordance with WHO recommendations<sup>4</sup> and directions in The Comprehensive Plan<sup>7</sup>, which specifies that PHC clinics and community health centres be the primary sites for diagnosis, staging and routine follow-up of HIV-positive patients. Previous studies conducted in other African countries have shown that both referral and non-referral approaches

have been adopted for implementing ART programmes in a public health sector<sup>13-17</sup>. However, the advantage of PHC involvement on a local level has been emphasised lately in resource-constrained settings. Some ART programmes, e.g. in Botswana<sup>17</sup> and Malawi<sup>18</sup>, have shifted from an initial, hospital-based follow-up for all ART matters, to involve more down-referral PHC clinics. It has been stated that provision of ART in central hospitals without strong links to community outreach or PHC services weakens the link between prevention and care<sup>19</sup>. The close co-operation and communication between the district hospital and the down-referral clinics in our study is in line with intentions in The Comprehensive Plan that there should be ongoing communication between PHC facilities and the district hospital HIV/AIDS specialty clinic.

### **Making the most out of the available resources**

Due to the low number of highly educated HCPs, a system for delegation of work tasks has been adopted. This is in line with WHO recommendations of making optimal use of available human resources. Despite this, there was still great pressure on the available doctors, and patients who were ready for treatment had to wait several weeks before treatment could be started. It is of concern that the programme is growing without further allocated resources. This means that patients may have to face longer waiting times before treatment is initiated. According to the treatment guidelines, the majority of the patients who are eligible for treatment have a CD4 count less than 200<sup>8</sup>. Since late presentation for HIV care is one of the major reasons for morbidity and mortality in HIV patients<sup>20</sup>, any treatment delay may lead to a further impaired immune system, which ultimately may increase the probability of severe disease progression or even death<sup>21-23</sup>.

Stabilising patients on treatment before down-referral ensured that prospective complications at an early stage could be identified by HCPs with the highest competence available in the system. Intentions in the South African Operational Plan for Comprehensive HIV and AIDS Care, Management and Treatment is that provision of HIV/AIDS care should not be at the expense of quality of other health care services provided in the clinics. According to the South African Health Review 2008, the number of medical practitioners and professional nurses varies in the nine provinces from 14.1-37.9 and 94.5-155 respectively per 100 000 population. This is much lower than the number needed to achieve the millennium development goals. Eastern Cape has among the lowest rates of HCPs/100 000 population of the nine provinces<sup>10</sup>. There is already a heavy workload and the ART programme is growing with more and more HIV patients who require treatment, follow-up and care. Therefore, with the current workforce, it is hoped that a situation will not arise where ART services are provided at the expense of other health care services.

As suggested by the WHO, decisions regarding treatment selection were simplified by defined first- and second-line treatment options in the National ART guidelines. Such standardisation is essential due to the limited selection of medicines in resource-

constrained settings<sup>24</sup>. Unfortunately, the current limited selection of ARVs leaves the physician with no choice for further options if the second line treatments fail. For such cases the guidelines instruct that the second line treatment be continued until there is no longer clinical benefit from the treatment<sup>8</sup>.

### Focus on adherence and the individual's needs

There was great emphasis on the importance of treatment adherence in this programme. Previous research has shown that important factors for long-term adherence to ART are: an 'easy to take' regimen, dispensing health facilities within easy reach of the patients, individual support and educational material<sup>25</sup>. Fixed combination tablets were not used in this health care setting, but collection points were those clinics which were within the easy reach of the each patient. Although educational material was available, written material is of limited value unless there are sufficient HCPs available to explain the meaning of its contents.

HCPs in the present study had experienced that the patients were concerned about the disability grant (DG). Previous research from South Africa has found that the DG is an important contributor to the income of households receiving this grant, and removal of this may be a serious threat to the household<sup>26</sup>. Since patients may lose their grants once their health condition improves, this may lead to a conflict between improving their health by being adherent or discontinuing treatment in order to qualify for the grant. The importance of understanding each individual's situation and needs was addressed to some extent by the social assessment carried out prior to ART initiation. Bringing these aspects into the mutual discussion about appropriateness of treatment initiation shows good communication and cooperation among different HCPs for the patient's benefit.

### Limitations

Because this was a multilingual study setting (Xhosa, Afrikaans, English), there were a few situations where the researcher needed translation and explanation from the HCPs. This was particularly to understand what was communicated between the patients and the HCPs. A limitation to the study is that conversations, group discussions and observations were not audio or video recorded. Therefore it was not possible with a full transcription to provide verbatim quotations. Due to language barriers, patients' perspectives and satisfaction with the treatment programme could not be studied. Hence the facilitating and constraining factors identified came from data gained by observations at public health facilities and conversations with health care providers.

### Conclusion

HCPs with extremely diverse educational backgrounds work together to provide health care for HIV-positive patients enrolled on the ART programme in this Makana LSA health care setting. Delegation of work tasks, availability of guidelines

and close contact between HCPs facilitate the efficient use of the human resources available. Equity in treatment access is addressed by the opportunity for patients to receive treatment and counselling free of charge, and to become enrolled in the system at the clinic closest to their home. Major challenges were identified with respect to heavy workload, time constraints and the limited number of highly educated HCPs. When considering both facilitating and constraining factors, this programme shows potential for functioning as a successful provider of ART for those who are able and willing to access it. Limitations and challenges still exist in reaching out with adequate treatment to a greater number of people who need ART.

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