

https://dspace.org/

Organisational capacity affecting adherence to Anti Retroviral Therapy at two public sector sites in Gauteng

Pursell, Rebecca

2009-02-10T08:01:05Z
http://hdl.handle.net/10539/6030

Downloaded from a DSpace repository. https://dspace.org/



ORGANISATIONAL CAPACITY AFFECTING ADHERENCE TO ANTI RETROVIRAL THERAPY AT TWO PUBLIC SECTOR SITES IN GAUTENG

A research report submitted to the Faculty of Health Sciences, in partial fulfilment of the requirements for the degree of Masters of Public Health.

Johannesburg, 2008

Rebecca Pursell

CANDIDATE'S DECLARATION

I, Rebecca Pursell, declare that this research report is my own work. It is being submitted for the Degree of Masters in Public Health at the University of the Witwatersrand. It has not been submitted for any other degree or examination at this or any other university.

_____ (Signature of candidate) on this ___day of

_____ 2008.

EXECUTIVE SUMMARY

The development of the Operational Plan for Comprehensive Care, Management and Treatment (CCMT) in 2003, hereafter referred to as the CCMT Plan, coincided with the formulation of the "3 By 5" initiative spearheaded the World Health Organisation and the Joint United Nations Programme on HIV/AIDS (UNAIDS). The CCMT Plan affirmed the commitment of the South African government to do something to slow the increasing number of HIV (Human Immuno deficiency Virus) infections and AIDS deaths across South Africa. The Plan set the target of providing universal access to Anti Retroviral Therapy (ART) to one million people through the public sector by the end of 2007. The programme was implemented in April 2004, with many sites opening later that year after extensive preparation and planning. As the programme began to expand across South Africa, it became clear that the public health system required considerable strengthening if it was to come close to reaching one million people by the end of 2007.

By March 2007, 264 423 people were reportedly receiving ART in 313 accredited sites across South Africa, most of them in the routine public sector institutional environment (National Treasury, 2007a). The Gauteng Department of Health has itself enrolled more than 95 000 people in the ART Programme and has one of the largest and fastest growing programmes in South Africa (Schneider et al, 2008).

This study aimed to assess the organisational capacity within two CCMT sites. Site A is a hospital with a capacity of 784 beds and Site B is a Community Health Centre (CHC) providing out-patient services. The sites that form part of this study began providing treatment in July 2004 and October 2004 respectively. Both programmes were nurse-

centred and CCMT Managers had prior experience in the provision of ART prior to the national roll-out in 2004.

Site A provided ART, Voluntary Counselling and Testing (VCT), Prevention of Mother-to-Child Transmission (PMTCT) services and initiated patients on TB treatment. Site B provided the same services in addition to a comprehensive TB service and a well-established Wellness Programme that was run within the facility. The study utilised data from semi-structured interviews with facility, CCMT site and Programme Managers and staff working in TB, PMTCT and VCT services. In addition, routine data was reviewed, facility mapping conducted, 35 self-administered questionnaires (SAQ) on motivation completed, and the clinical outcomes of 355 patients who participated in exit interviews were reviewed. These interviews were conducted for another MPH research study as part of the overall CIDA Rapid Response Grant.

The study utilised Wagner's Chronic Care Model to assess various aspects of chronic disease care. The Model consists of four main components. These are prepared proactive practice teams, delivery systems design, decision support and clinical information systems. Aspects that were studied included staffing levels, motivation, workload, infrastructure, space, support systems and monitoring and evaluation processes.

The study generated important findings that can be used to inform future decision-making in relation to facility accreditation and resource allocation within the CCMT Programme as a whole. All staff that completed a SAQ were confident about their ability to do their job and the majority were proud to be working in each site. Worryingly, the majority felt emotionally drained at the end of each day and felt there were not sufficient

staff to do the work in the CCMT service. This was confirmed by the gaps in required staffing as outlined in the accreditation criteria.

There was evidence of strong inter-personal relationships between staff and patients in Site A and services were well-integrated. Where gaps existed, these pertained to the division of responsibility in the management of TB and the lack of a Wellness service due to space constraints. Services were also well-integrated and this perception was shared by staff working in both sites.

Overall, Site B performed better in the management and use of data but appeared weaker in levels of motivation and personal relationships among staff. Both sites felt there was a need for more support from the Region and a strong need for emotional support for staff working in the CCMT service. Similarly, both sites experienced space constraints and were struggling to meet the needs of the growing numbers of patients attending the ART clinics. In particular, there was a growing gap in the number of patients prepared and initiated on treatment each month in Site A. The delay in starting patients on ART was exacerbated by the lack of staff within the Unit. Both sites experienced few logistical problems pertaining to drug supply and the turn-around time for laboratory test results. Where some minor problems were encountered, each site was able to put in place contingency measures to manage these problems. Adherence levels in both sites were high. Adherence levels, at 89.5% in Site A and 85.4% in Site B. It was difficult to assess whether these levels are likely to be maintained as the CCMT Programme continues to expand in both sites.

In light of the findings described above, there are important recommendations to be noted:

- More structured emotional support should be provided to staff on a regular basis with specific resources being allocated within each facility budget;
- Staff who are trained in CCMT content and procedures should not be moved to an alternate unit within facilities in order that such knowledge is not lost and is used to improve the quality of care;
- The Staffing Plan outlined in the Operational Plan (2003) needs to be reviewed in line with realistic staffing allocations in light of the human resource crisis that exists within the health system;
- Where possible, tasks should be re-allocated to lower level staff to decrease the pressure on higher-level staff and thus contribute to improving the skills base within the public health system;
- Lay-counsellors and auxiliary staff need to receive training that is accredited and standardised and is recognised as a formal qualification thereby ensuring a basic level of assumed knowledge and understanding;
- The allocation of funding to Non-Governmental Organisations (NGOs) to manage lay counsellors needs to be reconsidered in light of funding delays and problems with accountability at facility level;
- The decentralisation of treatment access through the accreditation of Primary Health Care clinics and sites at community-level needs to be prioritised in order to reduce the pressure on existing services and the risk of a decline in the quality of care;
- TB/HIV co-infection needs to be carefully managed and monitored so as to prevent the fall-out of patients from the health system. This is particularly important in light

of the division of responsibility between provincial and local government health facilities; and

- Careful attention needs to be dedicated to the formulation of indicators that are used for Monitoring & Evaluation in order to ensure that data collected provides a valid and accurate picture of site-level functioning and long-term patient outcomes.

ACKNOWLEDGEMENTS

I would like to thank my supervisor, Prof. Helen Schneider for her supervision and support throughout the research process. Her phenomenal knowledge and insight has contributed greatly to extending the depth of the analysis. I would also like to thank all the staff within both facilities that availed themselves for interviews and provided assistance in the collection of information and the conduct of fieldwork. I am also grateful to the Canadian International Development Agency (CIDA) who provided funding for the larger umbrella project that has been informed by this research. The funding was provided through the Rapid Response Fund.

TABLE OF CONTENTS

CANDIDATES DECLARATION i
EXECUTIVE SUMMARY ii
ACKNOWLEDGEMENTS vii
LIST OF TABLES x
LIST OF FIGURES x
ACRONYMS xi
CHAPTER 1 – INTRODUCTION 1
1.1 Background and rationale 1
1.2 Literature Review 5
1.2.1 Chronic Care Model 5
1.2.2 Measurement and markers for adherence 10
1.2.3 Experience of South Africa 11
1.2.4 The International Experience 15
1.2.5 Health systems capacity 17
1.2.6 Human Resources for Health 18
1.3 Aims and Objectives 21
1.4. Definition of terms 21
CHAPTER 2 – METHODOLOGY 23
2.1 Study Design 23
2.2 Study population 23
2.3 Study sample 24
2.4 Conceptual Framework 25
2.5 Data Analysis and Management 29
2.6 Ethics 29
2.7 Limitations 30
CHAPTER THREE – RESULTS 32
3.1 Overview of sites 32
3.2 Adherence as an outcome 34
3.3 Prepared proactive practice teams 36
3.3.1 Staffing in each site 36
3.3.2 Institutional arrangements relating to the role of lay counsellors in the ART service 40
3.3.3 Health worker motivation 41
3.3.4 Overall Motivation 43
3.3.5 Organisational loyalty and commitment 43
3.3.6 Debriefing 44
3.3.7 Management and teamwork 44
3.3.8 Individual/ Personal Factors and Attitudes 45
3.3.9 Training and Skills Development 45
3.4 Delivery Systems Design 48
3.4.1 Integration of services and continuity of care 48
3.4.2 Adherence Management Systems 54
3.4.2.1 Treatment preparation in Site A 55

3.4.2.2 Treatment preparation in Site B *56*
3.4.2.3 Management of patients who are defaulting on treatment *60*
3.5 Decision Support Systems 61
3.5.1 Physical Infrastructure *61*
3.5.2 Drug distribution and supply *63*
3.5.3 Laboratory Capacity *65*
3.5.4 Use of staffing guidelines and protocols *65*
3.6 Clinical Information Systems 66
3.6.1 Data collection and storage *67*
CHAPTER FOUR – DISCUSSION 68
4.1 Prepared proactive practice teams 68
4.1.1 Staffing *68*
4.1.2 Productive Patient-provider Interactions *70*
4.2 Delivery Systems Design 71
4.2.1 Access to Services *71*
4.2.2 Pathways of care *72*
4.2.3 Role of NGOs and community organisations *74*
4.3 Decision Support 76
4.3.1 Physical Infrastructure *76*
4.3.2 Drug distribution and supply *77*
4.3.3 Laboratory Capacity *78*
4.3.4 Relationships with districts and the region *78*
4.4 Clinical Information Systems 78
4.4.1 Data collection and management *78*
CHAPTER FIVE – RECOMMENDATIONS 81
5.1 Prepared proactive practice teams 81
5.1.1 Staffing allocation and task descriptions *81*
5.1.2 Training and Skills Development *82*
5.1.3 Workload and Burn Out *83*
5.2 Delivery Systems Design 83
5.2.1 Integration of services and continuity of care *83*
5.2.2 Managing TB/HIV co-infection *84*
5.2.3 Role of NGOs and community organisations *85*
5.3 Decision Support 86
5.4 Clinical Information Systems 87
5.4.1 Monitoring & Evaluation Processes *87*
5.4.2 Data collection and reporting processes *87*
REFERENCES 89
ANNEXURES 95

LIST OF TABLES

Table 1	Sample size in Sites A and B	25
Table 2	Measurement and data sources for domains evaluated	28
Table 3	Profile of sites studied	33
Table 4	Record of viral load suppression among patients on ART	34
Table 5	Adherence patterns in Sites A and B	35
Table 6	Core staffing requirements as outlined in the 2003 Operational Plan	38
Table 7	Comparison between staff required per site in line with Operational Plan compared to staffing in CCMT sites at time of data collection	39
Table 8	Self-reported motivation of health care workers in HIV-related services	42
Table 9	Levels of training as reported by CCMT Managers	46
Table 10	Perceptions of integration within sites	48
Table 11	Views expressed by programme managers on integration of HIV-related services	51
Table 12	Treatment initiation rates in Sites A and B (April-October 2006)	55
Table 13	Methods and procedures used in treatment preparation and adherence support	58
Table 14	Checklist of drugs and supplies	63
Table 15	Drugs and supplies not in ARV Pharmacy	64
Table 16	Reporting processes in place at Sites A and B	66

LIST OF FIGURES

Figure 1	Wagner's Chronic Care Model	7
Figure 2	The Innovative Care for Chronic Conditions Framework	8
Figure 3	Effect of 3 scenarios of interventions in sub-Saharan Africa from 2003-2020	9
Figure 4	Comparison of adherence patterns in Sites A and B	35
Figure 5	Treatment initiation rates between April and October 2006	55

ACRONYMS

ANC	Ante-Natal Care
ART	Anti Retroviral Therapy
CBO	Community-Based Organisation
CCMT	Comprehensive Care, Management and Treatment
CCM	Chronic Care Model
CHC	Community Health Centre
DOTS	Directly Observed Treatment Short course
HIV	Human Immuno deficiency Virus
ICCC	Innovative Care for Chronic Conditions
MSF	Médecins sans Frontières
NGO	Non-Governmental Organisation
PMTCT	Prevention of Mother-to-Child Transmission
SAQ	Self-Administered Questionnaire
SETA	Sector Education and Training Authority
STI	Sexually Transmitted Infection
TB	Tuberculosis
UNAIDS	Joint United Nations Programme on HIV/AIDS
VCT	Voluntary Counselling and Testing
WHO	World Health Organisation

CHAPTER 1 – INTRODUCTION

1.1 Background and rationale

South Africa can lay claim to implementing the largest public sector ART Programme in the world. This programme was initiated in 2004 after considerable pressure on government from civil society to act against the escalating number of HIV infections and AIDS deaths in South Africa. It also emerged at a time when there was growing recognition internationally of the need to develop an emergency response to the escalating HIV pandemic. Many of the poorest countries in the world were hardest hit.

This global response took the form of the '3 by 5' initiative led by the World Health Organisation and UNAIDS. At the start of the initiative, it was believed that six million people needed ART in such countries, but only 8% were receiving it. The initiative aimed to extend ART to three million people in low and middle-income countries by 2005. This was estimated to be 50% of the people who needed it. The initiative achieved some momentum and saw an increase in the number of people accessing ART in the target countries, but fell far short of achieving its goal. By the end of 2005, 810 000 people were receiving treatment in sub-Saharan Africa. This was an eight fold increase from 100 000 in 2003. South Africa accounted for approximately 25% of these, though it had not achieved its own targets (Nemes et al, 2006). This initiative, coupled with extensive work and funding provided by international donors and UNAIDS has culminated in improvements in some countries, with less people dying and infection rates slowing.

By 2005, the South African National HIV Prevalence Survey found that HIV prevalence among the general population was 16.2% (South African Department of Health, 2007). The National HIV and Syphilis Prevalence Survey conducted in 2006 found that HIV prevalence among pregnant women was 30.8%. This is a steady decline from 33.1% prevalence among pregnant women in 2004. Higher prevalence is recorded in the Kwa-Zulu Natal, Eastern Cape and Mpumalanga provinces (Dorrington et al, 2006). The roll-out of ART in the public sector in Gauteng has far out-paced the implementation of the CCMT Programme in the other three provinces. By October 2006, 53 285 adults were receiving ART as part of the public sector roll-out in Gauteng (South African Department of Health, 2006). While the number of new infections had peaked in Gauteng in 2005 and was slowing, prevalence among the general population remained high. By mid 2006, prevalence in Gauteng was estimated to be 14.5%, marginally lower than the national prevalence rate (Dorrington et al, 2006).

The Western Cape began providing ART in collaboration with Médecins sans Frontières (MSF) in 2001. Though the Western Cape had the lowest prevalence rate among pregnant women (8.6%) in the country, it was also experiencing large levels of in-migration from rural areas in pursuit of economic opportunity. At the time of initiating treatment programmes in Khayelitsha and Gugulethu, prevalence rates in these areas were not dissimilar to the national average (South African Department of Health, 2007). Gauteng began providing ART in 2004. It is one of the smallest provinces in South Africa, but has the greatest number of people. By 2007, Gauteng's population was estimated to be 10 451 713 people (Statistics South Africa, 2007). It is the centre of economic activity and acts as a magnet for people within South Africa and across the continent. Prospects of employment fuel the movement

of people from rural areas. This has created the conditions for one of the most serious HIV scenarios in South Africa.

The Department of Health's CCMT Plan was released in 2003 and provided the foundation for the roll-out of ART in the public sector in April 2004. The CCMT Plan committed the South African government to put in place an integrated strategy for the management of HIV/AIDS which included the provision of Nevirapine for pregnant women and free universal access to Anti Retroviral Therapy to patients with a CD4 count below 200. The CCMT Plan was formulated with guiding principles that need to be considered when assessing the functioning of the CCMT Programme. These principles include equitable implementation and quality of care across provinces, ensuring the sustainability of all HIV related interventions, integration of health services and the pursuit of the World Health Organisation's target of providing ART to three million people in developing countries by 2005.

An important underlying objective of the CCMT Plan was to strengthen the health system in order that it can achieve the goal of reaching and initiating one million patients on ART by the end of 2007. The CCMT Plan was followed with the design of a Monitoring and Evaluation Framework to assess programme performance and identify system weaknesses (Department of Health, 2004a). This framework sets out very specific indicators and objectives and the lead agency responsible for each intervention. Many such objectives require the involvement and meaningful participation of many stakeholders and government institutions. This confirms the need for collaboration and cooperation. The framework

outlines specific indicators for prevention, care and treatment for vulnerable high-risk populations (South African Department of Health, 2007).

By December 2007, 371 204 patients (adults and children) were on ART in the public sector across South Africa (South African Government, 2007). While South Africa has made great strides, it had not succeeded in reaching one million patients by the end of 2007. Implementation of the CCMT Plan varies across provinces and many sites are still awaiting accreditation. Many existing sites have reached the point of saturation and patients are being put on a waiting list. In others, the lack of skills and resources hampers the delivery of integrated services to patients. Without considerable increases in capacity and infrastructure, the gap between need and provision of ART will widen.

It is anticipated that as the programme becomes more stable, the number of patients initiated on ART will increase more rapidly. The health system is already generally overburdened and is struggling to meet the needs of all patients. Without considerable strengthening and investment, there is a risk that the health gains achieved to date by the introduction of ART will be lost.

Capacity issues include the fragmentation of health systems and a lack of integration between primary and secondary level care. The lack of collaboration and co-operation between services can significantly undermine continuity of care for patients who enter at primary care level and are referred into an already overburdened system that is struggling to monitor patients and maintain 95% adherence to ART, the primary criteria for achieving virological suppression. Literature demonstrates that levels of adherence may decline over time and are

influenced by the length of time a patient has been taking treatment. One study reports a decline in adherence after two years on ART (Rosen et al, 2007). The ART Programme provided in the public sector is in its fourth year of implementation. This highlights the need to monitor levels of adherence closely and to correctly identify and address barriers to maintaining patients on treatment.

This research report will investigate the organisational capacity within two second generation CCMT sites in Gauteng. It will look at the level of integration between services, primary and secondary level health care sites and the resources available to support the initiation and retention of patients on treatment to realise effective clinical outcomes. A well-functioning CCMT Programme has the potential to realise considerable development gains for individuals, families and the economy. For this reason, the long-term success of the ART Programme in South Africa is crucial.

1.2 Literature Review

1.2.1 Chronic Care Model

Chronic diseases are fast becoming one of the greatest burdens on health systems in the world today and require careful management to realise successful patient outcomes. Until recently, diabetes, hypertension and asthma were the main focus of chronic care. As the number of people living with HIV continues to increase, HIV is coming to be regarded as an urgent health emergency. In addition to this, it is also a chronic condition with the worst possible consequences if not managed effectively. To date, many health systems are based upon an acute model of care that is episodic in nature and does not consider the long-term

needs of patients. This model misses out on an opportunity to leverage community resources to care for patients in a system that is already stretched. An acute model of care is resource-intensive and will not be able to manage the increasing demand for health services into the future (World Health Organisation, 2002). In order to be able to meet the demands for chronic care, it became necessary to consider and develop an alternative model of care.

One of the crucial components of effective chronic care is a well-functioning health system that ensures continuity, comprehensiveness and co-operation between service providers and patients. These three components provide the cornerstone of high quality care. (Rothman & Wagner, 2003). Wagner's Chronic Care Model (CCM) as cited in Epping-Jordan and Wagner (2004) proposes a model of care that maximises resources and integrates services through strengthening health systems. The Model has four components. These are Self Management Support, Delivery Systems Design, Decision Support and Clinical Information Systems (Lewis et al, 2004).

- Self-Management Support refers to patient education and the empowerment of patients to take decisions regarding their health and health care through goal setting, problem solving and follow-up;

- Delivery Systems Design refers to the availability of resources such as drugs, laboratory equipment, physical space, institutional environment, role definition and task allocation within health care teams and the degree of integration within the health system;

- Decision Support refers to the availability and application of appropriate protocols, policies and guidelines in treatment;

- Clinical Information Systems refers to the collection and availability of relevant data and the use of such data to inform long-term care, allow for early intervention where health status changes, obtain and provide feedback and manage the long-term prognosis of patients taking chronic medication.

In addition to these four aspects, the interaction and relationships between health care providers and patients can have considerable impact upon patient outcomes.

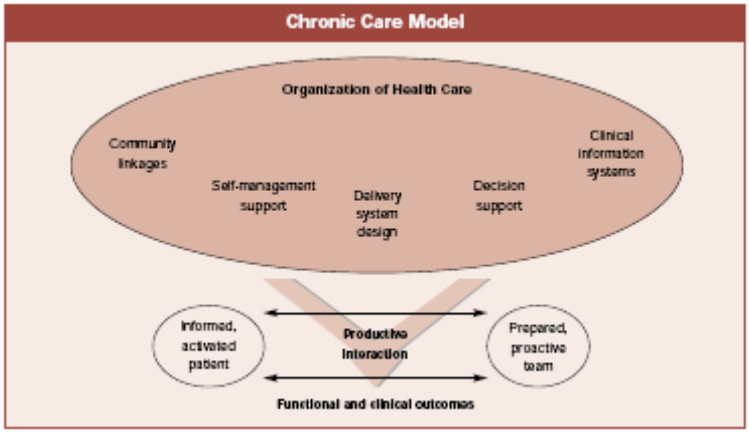


Figure 1: Wagner's Chronic Care Model (Wagner et al, 2001)

This model was initially developed in the United States of America and was conceived with the structure of the US health system in mind. The health care needs and environment differ considerably in the developing world. For this reason, The World Health Organisation (WHO) recognised the need to develop a Chronic Care Model that can provide the

framework for the delivery of chronic care in countries with resource limitations.

This culminated in the Innovative Care for Chronic Conditions (ICCC) Framework. This framework looks more broadly at multiple factors influencing the quality of care provided to patients and how this impacts upon clinical outcomes (WHO, 2002). It locates each of these factors at the micro, meso and macro level. The ICCC Framework is considerably broader in focus than Wagner's CCM. It places considerable emphasis upon comprehensive changes in the design of health systems, encompassing both internal and external factors (Epping-Jordan et al, 2004).

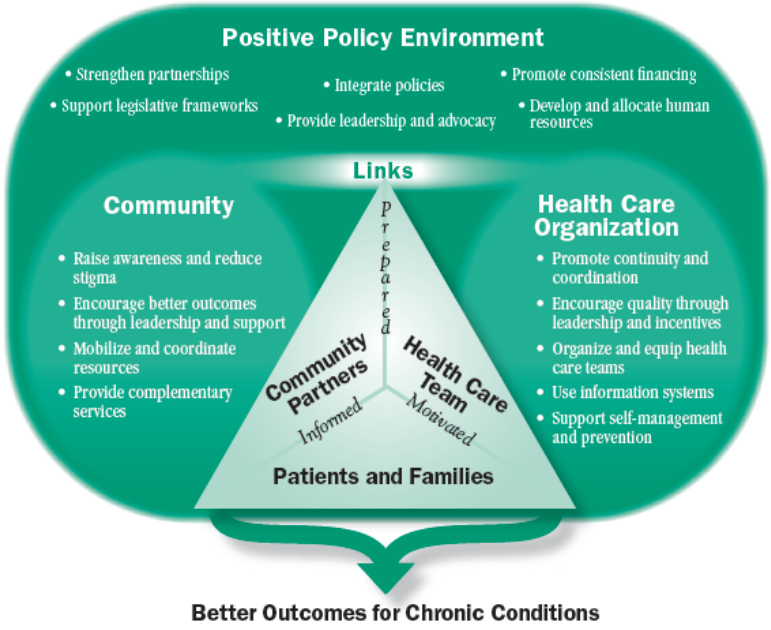


Figure 2: The Innovative Care for Chronic Conditions Framework (WHO, 2002).

At the *micro* level, the ICCC Framework focuses on the patient and family. Acute models of care have been focused on the micro level. This has historically been the predominant emphasis in health systems. The *meso* level focuses on the healthcare organisation and

community and the *macro* level focuses on broader policy objectives. The Chronic Care Model proposed by Epping-Jordan and Wagner focuses on the *meso* level. The major contribution of the ICCC Framework is the emphasis upon *macro* level components. Examples of macro-level components are policy and higher-level decision making. The ICCC Framework emphasized the need for multi-pronged health interventions to achieve effective clinical outcomes over the longer-term. The CCMT Plan has gone some way to achieving this by regarding the provision of ART as only one element of a comprehensive AIDS strategy that includes prevention, wellness, nutrition, the management of Sexually Transmitted Infections (STIs) and Tuberculosis (TB).

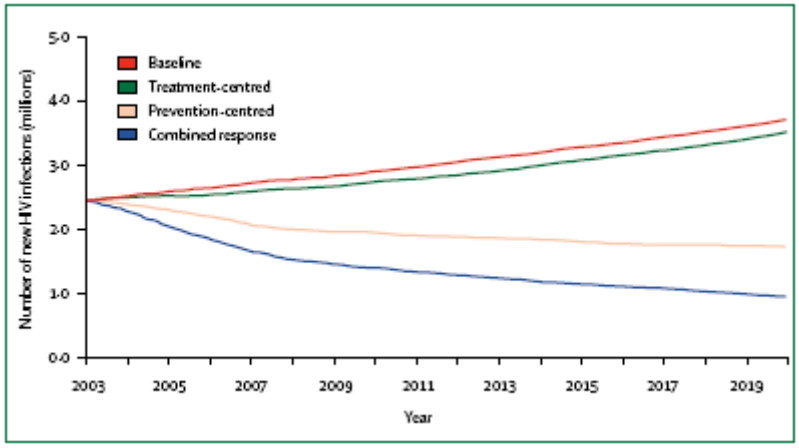


Figure 3: Effect of 3 scenarios of intervention in sub-Saharan Africa from 2003-2020 (Piot, 2006).

The ICCC Framework calls for integration between communities, patients, health care organisations and policies (WHO, 2002). The focus on integration is a considerable departure from vertical programmes that are resource-intensive, operate in isolation and do not facilitate communication and collaboration.

1.2.2 Measurement and markers for adherence

Adherence is described as "an engagement and accurate participation of an informed patient in a plan of care" (Rabkin et al in Healthlink Worldwide, 2006). This definition confirms that long-term adherence requires patient involvement, a planned approach and needs to be carefully monitored. The extent to which these elements are present is influenced by the environment in which treatment takes place and the resources available to support effective clinical outcomes. In patients taking ART, virological suppression is regarded as an effective clinical outcome.

Adherence to ART can be measured through self-reporting, pill counts and clinical outcomes. Research into adherence tends to use clinical outcomes of CD4 count and viral load results as the most reliable assessment of adherence (Orrell et al, 2003 and Coetzee et al, 2004). A large body of literature on adherence defines a patient who has taken 95% of their tablets in a specific time period as adherent. This is known as dose adherence. Dose adherence is the measure that will be used for this study. The second measure is schedule adherence. Schedule adherence includes whether the patient also took the medication at the correct time (Murphy et al, 2004). This is harder to measure accurately but is also important as it has been found that taking ART at a different time to that specified may reduce the rate of virological suppression. Literature has shown that adherence measures are often inconsistent. The most common measures used are those of CD4 counts and viral load suppression.

Reported retention rates in sub-Saharan Africa over a 24 month period vary from 39.2% in Uganda to 90.3% in South Africa (Rosen et al, 2007). This makes South Africa the country

with the highest number of patients retained on treatment across the continent. This is particularly noteworthy when considering that treatment completion rates on short-term treatment for TB are lower. In Gauteng, 71.7% of patients completed TB treatment and 6.9% of patients defaulted on TB treatment in 2005 (Day and Gray, 2007).

1.2.3 Experience of South Africa

The roll-out of ART in South Africa has taken place in two phases. The first phase was the introduction and management of NGO-led sites by organisations such as MSF and Hanan Crusaid. These sites are referred to as first generation sites and have provided many valuable lessons in the implementation of the CCMT Plan. First generation sites pioneered the provision of ART in South Africa and were donor-funded. At the time of initiating the research, these sites were relatively stable and had overcome many of the problems experienced by the 'second generation' sites that were operating in the public sector environment and had rolled out treatment once the CCMT Plan was approved. Some of the 'first generation' sites have since become independent of their initial donor agencies and have been handed over to the Department of Health in respective provinces. This has happened in the Western Cape and Eastern Cape.

Available literature which reflects on the evolution of the public sector treatment programme in South Africa is informed by treatment programmes in the 'first generation sites' of Gugulethu, Khayelitsha and Lusikisiki. Gugulethu and Khayelitsha are two major urban townships in the Western Cape that have grown rapidly as people move from rural areas to urban areas in pursuit of economic opportunity. In contrast to this, Lusikisiki is a densely

populated rural sub-district in the Eastern Cape province. This is one of the poorest provinces in South Africa (Statistics South Africa, 2003). The programme in Gugulethu was initiated by a British NGO, Hanan Crusaid, in 2002. The programmes in Khayelitsha and Lusikisiki were initiated by MSF. MSF, in collaboration with the Western Cape Department of Health began providing ART in three Khayelitsha Community Health Centres in 2001 and began providing ART in Lusikisiki in 2003. Each of these innovator programmes contribute important lessons for treatment programmes in South Africa.

The second phase of the ART roll-out in South Africa began once the CCMT Plan had been approved and public sector sites were identified for accreditation. Programmes initiated within 'first generation sites have expanded rapidly in resource-constrained settings and have been able to maintain high numbers of patients on treatment. Research undertaken in Gugulethu (Bekker et al. 2006) reports that after 12 months, 82% of patients receiving treatment at a clinic were retained in the programme and all had achieved viral load suppression below 400 copies per ml. Similarly, 81% of patients receiving treatment at a clinic in Lusikisiki were still on treatment after 12 months and 90% had achieved virological suppression. (Ford et al, 2006).

Both these programmes confirm that it is possible to achieve effective clinical outcomes in low-income countries. It is worthwhile noting that the number of patients in Khayelitsha with undetectable viral loads decreased to 84.2% after 12 months, 75% after 18 months and 69.7% after 24 months respectively. Patient retention is recorded as 83.5% over the study period. This demonstrates the difficulty of retaining patients on treatment over time and highlights that programme saturation can negatively impact the quality of care provided to

patients. As programmes have expanded, the gap between need and provision has narrowed. However, without sufficient attention to quality of care, there is a risk that the gap between need and provision widens again leading to a reversal in the health gains realised to date.

This is especially important to consider as South Africa enters the fourth year of its national treatment programme and faces the risk of compromising programme performance as the public sector programme expands and the number of patients enrolled and initiated on ART continues to increase.

The treatment programme initiated in Gugulethu had almost double the number of patients than the clinic in Khayelitsha but showed smaller declines in adherence levels over time. This programme was initiated in 2002 by the Western Cape Department of Health and had enrolled 1139 patients by October 2005. In the first year of study, 161 patients were initiated on ART. In the following two years, 280 and 698 patients were enrolled respectively.

Despite the high numbers of patients, the programme in Gugulethu saw a smaller decline in the number of patients who did not have undetectable viral loads. This figure varied from 100% in 2003, to 92% in 2004 and 98% in 2005, despite this programme serving almost double the number of patients than the three MSF-led clinics providing ART in Khayelitsha. The Gugulethu programme placed counsellors at the centre of patient support and saw a four-fold increase in the number of counsellors (6 to 28) from 2002 to 2005. Patient retention levels in Gugulethu were reported as 90.3%.

Both these programmes demonstrate that nurse-centred programmes in combination with thorough patient preparation can achieve effective clinical outcomes. Both studies also advocate provision of treatment in primary care settings and it appears that treatment in primary care settings with a smaller number of patients can achieve higher rates of viral load suppression and patient retention (Bekker et al, 2006). This is in contrast to treatment programmes with a greater number of patients on treatment which demonstrate a concurrent decrease in patient retention, virological suppression and an increase in HIV-related mortality. This provides one of the strongest cases for locating treatment programmes at primary level. This experience is echoed by the effective outcomes achieved in a clinic in Lusikisiki (Ford et al, 2006).

Research on high levels of loss to follow-up conducted in an urban public sector clinic in Johannesburg examined factors affecting retention on treatment among 15% (267 of 1631) of patients who were classified as lost to follow up after six weeks of discontinuing ART in the clinic. The study conducted retrospective analysis on such patients to establish reasons for loss to follow-up. High rates of mortality were noted in patients who had initiated ART in the last 30 days (83% of all deaths). Mortality was also higher among patients who were older at the time of clinic enrolment. Patients may also only seek care once they are very sick and their health may have deteriorated further in the time between presenting for care and initiating ART. This highlights the importance of ensuring that patients eligible for ART can access treatment as soon as possible.

It is likely that such deaths could be avoided by earlier initiation of treatment and more efficient referrals to ART clinics. A high prevalence of prior or current TB infection was

noted in patients lost to follow up. This could be attributed to poor coordination of TB and HIV services and the difficulty of managing two chronic conditions simultaneously. In many instances, patients were receiving TB treatment at a different clinic. It is possible that either service was not aware of the patients overall health status and there was little communication between services. The integration of services will result in lower levels of morbidity and mortality for both conditions (Dalal et al, 2008). Factors identified in non-mortality loss to follow-up included relocation, transfers to another ART clinic and hospitalisation. Each of the identified factors can be associated with systems functioning and integration across services.

1.2.4 The international experience

Participation of patients in ART treatment programmes in developing countries is equivalent or better than adherence levels reported in the United States of America (USA). One study in the USA reports 74% adherence among patients who were followed up after eight months on ART (Paterson et al, 2000). The eight month follow-up period is a relatively short period of time. Higher levels of adherence were recorded in patients in South Africa who had been followed up after 12 months. It is possible that levels of adherence and retention may improve as the programme begins to develop optimal strategies for patient retention (Rosen et al, 2007). The lower levels of adherence in the USA demonstrate that the availability of sufficient resources, higher income and education are not reliable predictors of adherence.

In Haiti, 87% of patients who were initiated on ART were still registered in the programme 12 months later. This demonstrates that successful treatment outcomes are achievable in

settings with limited resources. Thus, resource constraints should not be used as a justification to delay the provision of ART in low-income countries (Severe et al, 2005).

Literature examining clinical outcomes in low and high income countries recorded very similar gains in CD4 counts. Clinical outcomes of patients from eighteen programmes in low-income countries in Africa, Asia and South America and twelve programmes in high-income countries in Western Europe, the USA and Canada were analysed and compared to determine factors affecting adherence outcomes.

Patients in low-income countries tended to start treatment with a considerably lower CD4 count (108 cells) whereas patients participating in treatment programmes in high-income countries had started treatment with a considerably higher CD4 count (234 cells). This has been attributed to the tendency among poorer patients to delay accessing health care due to the associated costs of accessing treatment. Clinical outcomes were close to equal in high and low-income countries. After six months, patients had achieved gains of 106 CD4 cells in low-income countries and 103 CD4 cells in high income countries.

At the same time, 76% patients in low-income settings and 77% of patients in high-income countries respectively had viral loads of less than 500 copies per ml after six months. This demonstrates that conditions prior to initiating treatment may influence outcomes but that clinical outcomes between low and high income countries do not differ considerably. This is indicated in the higher levels of mortality in the first three months of treatment in low-income countries. This has been attributed to complications associated with late stage AIDS infection (ART-LINC and ART-CC Collaboration, 2006).

1.2.5 Health systems capacity

South Africa faces two major challenges as it continues to implement the CCMT Plan. These are the need to rapidly scale-up and expand the treatment programme and the need to sustain the delivery of high quality patient care in sites that have been in operation since 2004 and are approaching saturation. The ability of the public health system to respond to and address these challenges is considerably influenced by the organisational capacity within CCMT sites.

The roll-out of the ART Programme has taken various forms across provinces. In the Free State province, implementation has taken place in a decentralised manner and has a primary health care orientation. This has spread the patient load more evenly and among more personnel (Steyn et al, 2006). It has also brought treatment closer to communities and thereby reduced the costs of accessing treatment. In Gauteng, treatment programmes were initiated and are still only located in hospitals and Community Health Centres (CHCs). Many such sites are approaching saturation and are proposing that patients are down-referred. This has been used as an argument for managing increased patient loads in accredited sites across South Africa. It has received mixed responses from clinicians, NGOs working in the sector and government. Many clinicians and NGOs are in disagreement with this strategy as it hampers the integration of services and creates huge potential for patients to be lost in the system. This is exacerbated by the division of responsibility for primary health care clinics and hospitals between local and provincial government respectively.

Literature proposes that ART services be located at PHC level because these sites are generally closer and more acceptable to the community, meaning that people seek treatment earlier and stay healthier for longer. The greater number of primary health care clinics also means that there are more sites providing ART in each district. This approach is valuable because it allows for the rapid expansion of programmes while maintaining optimal patient load.

1.2.6 Human Resources for health

The primary health care orientation of services means that clinical tasks are performed by professional nurses and that the allocation of traditional tasks and duties is reconsidered. The approach of *task shifting* is increasingly being perceived as a viable response to critical human resource constraints (WHO, 2007). Task shifting requires careful assessment of competencies but has proved very important to expanding treatment without compromising the quality of care and ensuring that available human resources are utilised to best effect. The higher number of clinics providing ART is off-set by more manageable patient numbers (Boulle & Coetzee, 2006). In the context of a global health worker crisis, this approach is vital to reaching the high number of people needing ART (WHO, 2007).

Currently, the number of patients on treatment in the public sector in South Africa is only a small proportion of those who need it. This means that treatment programmes will need to expand rapidly if they are to narrow the treatment gap. The continued enrolment of patients on treatment will require considerable injections of staff if the same level of care is to be maintained. The Khayelitsha programme demonstrates that rapid expansion is possible without compromising clinical outcomes if the right skill mix is present. In Khayelitsha, the

patient load in three clinics has increased from 1500 consultations a month to 7000 consultations a month in three clinics between 2001 and 2004. In that period, the proportion of patients who sustained viral loads below 400 copies per *ml* has increased from 87.1% to 92.8% (Boulle & Coetzee, 2006).

While there has been some increase in the number of staff within the service, the increases are considerably smaller than the requirements set out in the CCMT Plan. Similarly, as the demand for ART increases, there is a risk that other HIV-related services will be crowded out due to the reallocation of staff, and constraints in space and available human resources. This poses great risk to achieving adherence, viral load suppression and prolonged life. It is imperative that these services continue to be strengthened in order that there is continuity of care and to ensure that patients are kept within the health system. It is likely that integrating and strengthening VCT, TB and PMTCT services will result in these services being able to absorb some of the additional patient load until patients qualify to start ART.

Already, scarce skills personnel in sites that are approaching saturation are reporting that they do not have sufficient time to spend with patients. In the words of a pharmacist in Gauteng "It's very, very strenuous… Very often we have to be fast in our dispensing mechanisms and sometimes patients don't get the best quality out of our service. We are pushed for time." (Bodibe, 2006)

This pharmacist spends five minutes with her patients and that is not ideal. By 11 o'clock, she has already seen 43 patients and more than 50 are waiting. "Under ideal circumstances that's not how I want to be because pharmacy is a complicated issue, as you can imagine. It's

medicine. So, it goes into a body. And it needs to be the correct dose, the correct strength. There are some finer details that you sometimes have to take time and explain to your patient. But you always have that burning issue at the back of your head: Time factor, time factor. Other people are waiting as well. Hurry up. Be fast. Be quick" (Bodibe, 2006).

If patient interactions with the ART service are restricted to meeting with an over-burdened pharmacist to obtain a repeat of their medication, it creates little opportunity to foster and maintain productive provider patient interactions. If patients are unable to communicate their problems and concerns to their health care worker, it is more likely that they may interrupt treatment without accessing available support and resources to assist with adherence. This may result in a high number of premature deaths. If drug resistance develops, patients will need to be moved to more expensive drugs. This may result in fewer numbers of patients being able to access ART (McCoy et al, 2005).

Similarly, many ART models assume that the time required per patient will decrease the longer a patient remains on treatment. While this creates potential for task shifting and turning over maintenance to staff nurses, there are risks in such an approach (Hirschhorn et al, 2006). Patients who have been taking treatment over an extended period may not remain adherent and second line regimen drugs are more clinically complex and require more careful management. This complexity may negatively impact adherence levels (Paterson et al, 2000). Though very few patients in Site A were on second-line regimen drugs and no patients were on second-line regimen drugs in Site B, numbers are likely to increase over time and may impact levels of adherence considerably.

1.3 Aims and Objectives

The aim of this study was to assess organisational capacity to provide ART within two CCMT sites in Gauteng and the impact of such capacity on levels of adherence to ART and retention in treatment programmes.

The objectives were to assess:

1. Levels of adherence and follow-up at two CCMT sites in Gauteng
2. Dimensions of organisational capacity within the sites as defined in Wagner's Chronic Care Model:
    - Patient-provider relationships (levels of motivation, workload, absenteeism, skills mix, staffing profile).
    - Delivery systems design (integration of services, continuity of care, lay-out of services, adherence management systems, patient education, relationships with other departments and community organisations).
    - Support systems (drug procurement and distribution, availability and use of relevant protocols and procedures, physical infrastructure, organisational structure and leadership).
    - Clinical information systems (capturing and recording of data, use of data to inform practice, monitoring and evaluation of programme performance).

1.4. Definition of terms

1. For the purposes of the study, *adherence* is defined as patients taking 95% of the required dosage in the preceding seven days.

2. *Organisational factors* can include, but are not limited to, staffing, administrative procedures, motivation levels, support systems, consistent availability of human and material resources and patterns of referral between services.
3. *Comprehensive Care, Management and Treatment (CCMT)* refers to a basket of HIV-related services that includes PMTCT, VCT, Wellness and ART.
4. *Successful treatment outcomes* are considered to be combating the development of drug resistance and the achievement of viral suppression.
5. *Task Shifting* refers to the rational redistribution of tasks from highly qualified health workers to health workers with less training and fewer qualifications, in order to make more efficient use of available human resources.

CHAPTER 2 – METHODOLOGY

2.1 Study design

This study is descriptive and operational in nature. It compares and contrasts organisational capacity and levels of adherence in two, second generation CCMT sites providing care to people living with HIV/AIDS, including Anti Retroviral therapy in Gauteng, since 2004. These second generation CCMT sites were established in non-academic settings during the course of 2004. The two sites were typical of the initial public sector CCMT sites established post 2004, had sufficient time to overcome basic teething problems and had recruited a sizeable number of patients on treatment. The first was a regional hospital in Ekurhuleni (referred to as Site A) and the second was a Community Health Centre (CHC) in Sedibeng District (referred to as Site B). The study evaluated the functioning of each site and its existing systems and programmes that support adherence to ART and more generally, good outcomes of care.

2.2 Study population

This study focussed on CCMT sites providing ART to patients in Region B of Gauteng. Region B includes the Ekurhuleni Metropolitan Municipality and Sedibeng District Municipality. Site A and B are located within these two regions. Ekurhuleni Metro has an estimated population of 2 478 130, comprises 26% of the population of Gauteng, has a 44% unemployment rate and an average household size of 3.19 people per household (Statistics

South Africa, 2003). Antenatal Survey Data collected in 2006 records the HIV prevalence among ANC attendees in Ekurhuleni Metropolitan District as 32.3%. Sedibeng District had an estimated population of 796 760, comprises 9% of the population of Gauteng, has a 40.4% unemployment rate and an average household size of 3.45 people (Statistics South Africa, 2003). Antenatal Survey Data collected in 2006 records the HIV prevalence among ANC attendees in Sedibeng district as 35%. This is the highest ANC prevalence data in Gauteng. The household size and unemployment rates are not dissimilar to each other. Both sites are located in urban areas. At the time of the study, six CCMT sites in Region B met the study criteria as second generation public sector sites. Within the sites, this study is concerned with two populations. The first, and the primary focus of this study, were health care workers employed in the CCMT service and the systems to support them; and the second, were patients attending the CCMT service. Quantitative and qualitative data was triangulated to develop a thorough assessment of organisational capacity and adherence in both sites.

2.3 Study sample

Two CCMT sites in Region B were randomly selected as part of a sampling process for a larger study of both Regions A and B in Gauteng. Thirteen CCMT sites in the two Regions met the inclusion criteria as second generation sites, and were divided into Hospital and Community Health Centre-based sites. Two sites were randomly selected from each stratum, two of which happened to fall within Region B. Within the sites the sample selected for this study included firstly, facility staff employed in HIV-related services and, secondly, patients attending the ART clinic in both sites. Managers responsible for the following

services/positions were interviewed: Ante-Natal Care and Prevention of Mother-to-Child-Transmission (ANC/PMTCT), TB, VCT, ART services and the Facility Manager. All the health workers working in these various services were also invited to complete an anonymous self-administered questionnaire (SAQ). This questionnaire focussed on issues of motivation, workload, absenteeism and perceptions of individual risk of HIV infection within their work environment. All research instruments are included as an annexure to this report.

Patients were recruited for interviews through systematic sampling. Patients were approached sequentially over a one-month period by fieldworkers in each site and asked whether he or she was willing to participate in an interview. The patient files of interviewees were also reviewed.

Table 1: Sample size in Sites A and B

Measurement	Site A (n)	Site B (n)
Interviews with unit managers	5	5
Self-Administered Questionnaires completed	11	24
Patients interviewed and files reviewed	191	164

2.4 Conceptual framework

Using the Wagner model as the basic template for the fieldwork, data collection was organised into themes. These themes are (1) adherence outcomes, (2) motivated and adequately staffed teams, (3) delivery systems design, (4) decision support and (5) clinical information systems. The data collection involved a number of processes and instruments. Semi-structured interviews with staff provided information about staffing within each unit, levels of training, and staff losses since the initiation of the ART service, movement of

patients through the CCMT service, management of patients with HIV, specific training received by staff to support the delivery of ART, task allocation among different categories of staff, record-keeping and administrative procedures. Questions were also asked regarding the collection and use of information within the CCMT service. Where possible, gaps in information were addressed by examining available routine data. Health workers in both sites were provided with an SAQ to complete. The instrument asked questions relating to motivation and burnout.

Exit interviews with patients elicited information regarding socio-economic status, the movement of patients within the health system, sources of support, experiences of health workers in each site and reasons for missing treatment. This report looks specifically at data items pertaining to factors that affect adherence and reasons for missing treatment.

Routine data provided information about staff training and workload information as well as facility-level and service-specific data. Data items included the number of patients seen within the facility, including the number of new patients and the number of patients who were lost to follow-up. Facility-level data included staff absenteeism rates, workload information, patient headcounts and service-specific data from the ANC, PMTCT, TB, VCT and ART services within each site. Service-specific data included the number of HIV tests taken, the number of CD4 counts performed, the number of patients started on TB treatment and the number of patients registering for PMTCT within the ANC service. This data was obtained from Facility Managers and the head nurses within each service.

A third source of data was derived from the researcher visiting each of the sites and recording general observations about resources and facilities within the CCMT service, patient-provider interactions, quality of the working environment, the capacity and integrity of systems to cope with demands placed on them and referral procedures between units and within the site itself. These observations were recorded as observations in a diary.

Reliability was ensured through the use of standardised tools that consisted of predominantly closed ended questions and check boxes to capture information. The same tools were used in both sites and data collection was completed in both sites by the primary researcher. This ensured that observations were accurately reflected and could be consistently analysed and compared in both sites. All routine data was taken from written records that are stored in the CCMT Manager's office and are recorded on Gauteng Department of Health forms. Consistency in understanding is reflected in the responses provided during interviews.

Table 2: Measurement and data sources for domains evaluated (Adapted from Schneider et al, 2008).

Domains	Measurement	Data sources
(1) Outcomes		
Self reported adherence	3 day recall, ever missed tablets or appointments	Patient exit interviews
Viral load suppression, CD4 count	<400 copies/ml; CD4>200	Record reviews
Retention in care	Defaulters; transfers; deaths	Routine facility data obtained both on site and centrally
(2) Prepared proactive practice teams		
Adequately staffed teams	Staffing relative to norms set by CCMT Plan; turnover; vacancy rates; workloads	Facility and CCMT Manager interviews
Provider motivation	23 item tool assessing motivation, determinants and outcomes	Self administered questionnaires
Productive interactions	Researcher observations, patient perceptions	Observations and patient exit interviews
(3) Delivery systems design		
Service integration	Presence of clear care pathways, assessments of integration	Facility, CCMT Manager interviews and facility observations
Referral and networking relationships	Presence of referral relationships between services, NGOs	CCMT Manager interviews
Adherence Management Systems	Methods of treatment preparation, maintaining adherence and tracing loss to follow-up	CCMT Manager interviews
(4) Decision Support		
Equipment and physical infrastructure	Presence of essential equipment and infrastructure	Facility checklists
Drug procurement and distribution	Drug supply system, presence of essential drugs	CCMT Manager interviews and facility checklists
Laboratory capacity	Ability to do essential laboratory tests, turn around times	CCMT Manager interviews
Guidelines, policies and protocols	Availability of guidelines, policies, protocols	CCMT Manager interviews and facility checklists
(5) Information Systems		
Clinical records, Mechanisms for tracking clinical outcomes;	Structured to allow for clinical monitoring, registers to track drop outs	Facility observations and CCMT Manager interviews
Programme monitoring	Structured systems, use of data locally, reports and feedback, electronic vs. paper based	Facility observations and CCMT Manager interviews

2.5 Data analysis and management

The process of data analysis involved bringing together various sources and types of data to develop a composite picture of each site and to identify areas of similarity and relationships between data elements. This process is referred to as triangulation. In this study, triangulation involved combining information provided by health workers and by patients, with routine data recorded at central level and then comparing the perceptions of facilities, patients and health workers.

Similar questions were asked to the head of each service. This assisted in creating a comprehensive picture of the way the health system works in each site. Questionnaires completed by staff provided a picture of the relationships among staff, perceptions of management and individual attitudes towards work. These were compared across sites and with information provided during interviews with the heads of each service. Areas of similarity and difference across sites were analysed further.

2.6 Ethics

Strict ethical guidelines were followed while completing data collection. All health care workers who were interviewed or completed an anonymous SAQ were provided with a description of the study and an opportunity to ask questions, and were required to sign an informed consent form. The consent form outlined their conditions for participating in the study. All were anonymous and no analysis of individual department dynamics was performed. The questionnaires provided a generalised picture of motivation, attitudes and

relationships within each site. Facility codes and patient numbers were used to ensure that data remained confidential. No personal names or identifying information of any participant was recorded.

Patients who participated in the study were voluntarily recruited and were asked to provide written consent to be interviewed and to have their files reviewed. Data collected during exit interviews with patients was recorded using the unique identifying patient number. No individual names were used on any instruments. This ensured confidentiality.

2.7 Limitations

The data was collected in October 2006 and it is likely that the treatment programme in each site may have evolved differently. Difficulty obtaining comprehensive routine data in Site A also made it difficult to comprehensively assess levels of adherence in Site A. Nurses interviewed who were working in the TB service did not seem to have a grasp of core data items such as the TB cure rate within each facility and the number of patients co-infected with TB and HIV.

This made it somewhat difficult to make a thorough assessment of the integration of services with the CCMT clinic at Site A. There was a low response rate to the SAQs circulated in both sites. These tools were circulated more than once with a low return rate. This may point to staff being overloaded with work and possible respondent fatigue. The competing demands of patient care, reporting requirements and constraints in physical space made it difficult to complete interviews without interruptions.

Interviews with CCMT and Facility Managers took in excess of 90 minutes (including verification of routine data) a considerable proportion of the working day. The CCMT Manager in Site A was also engaged in some clinical duties herself. In both sites, the main telephone was located in the CCMT Manager's office and there was frequent traffic in and out the office to make and receive calls. This limited privacy.

CHAPTER THREE – RESULTS

Results will be presented in four sections. These four sections correspond with the domains identified in Wagner's Chronic Care Model. Each domain will be discussed individually and a comparison of findings in the two sites will be provided.

3.1 Overview of sites

Two roll-out sites within the Region B health district of Gauteng were selected for this research (Table 3), the first site being a regional hospital situated in the Ekurhuleni municipal jurisdiction of Gauteng. The hospital has a capacity of 784 beds and has provided ART since July 2004. The second site is a CHC located in the Sedibeng municipal jurisdiction and has been providing treatment since October 2004. The CHC provides outpatient services and has started 804 patients on treatment since October 2004. By September 2006, 584 patients were still on treatment and there was no waiting list. Both sites are headed by professional nurses with prior experience in the administration of ART.

Interviews and observations were conducted with the same departments in both sites and SAQs completed by health staff working within the CCMT service. Despite there being significantly more patients receiving treatment in Site A than Site B, a total of 2038 compared to 585, only eleven SAQs were completed in the hospital and twenty four questionnaires were completed by staff at the CHC.

Table 3: Profile of Sites Studied

SITE A	SITE B
GENERAL PROFILE	
• Provincially run regional hospital, falling within the Ekurhuleni municipal jurisdiction of Gauteng. • The average amount spent on transport to attend one clinic visit was R14 and R11 on food (R25 in total). • 39/191 (20.4%) patients had conducted any economic activity in the two weeks prior to attending the clinic. • 100/191 patients (52%) are receiving a disability grant. • Provides both outpatient and inpatient care. • Outpatient hours: 7am – 4pm (Monday to Friday).	• Provincially run CHC falling within the Sedibeng municipal jurisdiction of Gauteng • Average cost incurred by patients per visit is R12 for transport and for R6 for food (R18 in total). • 31/163 respondents (19%) had engaged in some form of economic activity in the two weeks prior to being interviewed. • 71/164 (43%) are receiving a disability grant. • Only provides outpatient care. • Opening hours: 7am - 4pm (Monday to Friday).
HIV RELATED SERVICES ASSESSED	
• Outpatient Department • VCT Service • TB Focal Point • ANC/PMTCT • CCMT service	• VCT Service • TB Focal Point • ANC/PMTCT • CCMT service
PROFILE OF CCMT SITES	
• Operational since July 2004 • ART Clinic: Monday-Friday • New patients are seen on Fridays • No wellness programme within site due to lack of space and staff • 2038 initiated on ART since July 2004 (central data) • 357 patients waiting to start treatment • Average of three months between completing adherence counselling and starting treatment	• Operational since October 2004 • Physically integrated with CHC • ART Clinic Monday-Friday • Wellness and Follow up: integrated into clinic services • Friday: Administration and enrolment of new patients • 804 initiated on ART since October 2004 (data from Facility Manager) • Are still on ART in this service – 584 as at September 2006(73%) • No waiting list

3.2 Adherence as an outcome

Adherence to treatment can be measured in a number of ways. One of the primary methods for determining adherence to ART among patients is by monitoring the CD4 count and viral load of patients taking ART. While this is generally accepted as the most appropriate clinical measure of adherence, it can not be assumed that high levels of adherence will result in an improved CD4 count and a decreased viral load.

Table 4: Record of viral load suppression among patients on ART

	Hospital (Site A)	Community Health Centre (Site B)
Total patient interviews	191	164
Total with viral load result	158 (83%)	110 (67%)
0-399 (Undetectable)	139	99
>= 400	19	11

Information pertaining to viral loads and CD4 counts was available in both sites, with only three patient files being incomplete at Site A and one patient file missing at Site B.

In Site A, data pertaining to drop-outs and transfers out of patients was incomplete and was said, by the CCMT Manager, to be unreliable. Data provided by the Facility Manager at Site B was complete and up-to-date. The distinction between patients who were recorded as lost-to-follow up and transfers out however, was not clear and consistent in both sites. In Site A, the pharmacist was responsible for recording patient information when a patient had not arrived for their scheduled appointment. If the patient arrived on an alternative day, they were not turned away and a repeat of their medication would be issued. This would mean

that the patient was no longer lost to follow-up. This raises questions about the validity of this indicator.

Table 5: Adherence Patterns in Sites A and B

	Site A		Site B
Total interviewed	191		164
Missed scheduled appointment	31 (16.2%)		18 (10.9%)
Missed appointments but did not miss dose	28		14
Missed appointments and dose	3		4
Missed tablets in last three days	0		0
Missed tablets in last week	2		4
Missed tablets in last two weeks	4		5
Missed tablets in last three months	4		2
Missed tablets more than three months ago	10		13
Ever missed dose	20 (10.5%)		24 (14.6%)
Never missed tablets	171		140
Adherence levels	**(89.5%)**		**(85.4%)**

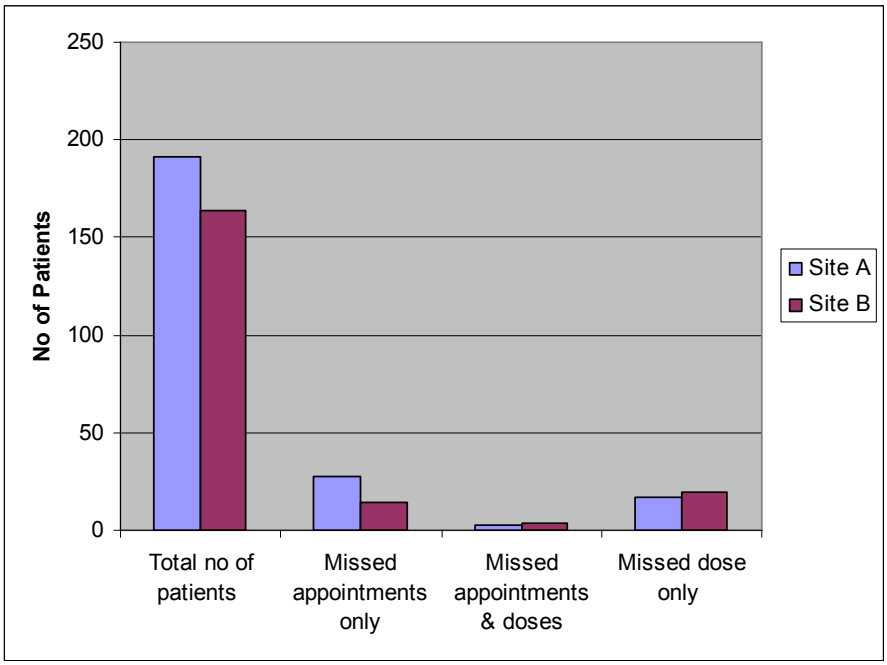


Figure 4: Comparison of adherence patterns in Sites A and B

The data indicated that non-adherence to treatment could not be solely explained by failure to attend scheduled appointments. Factors such as continuity of care, attendance at support groups, workload and staffing, use of routine data and integration of services and their possible impact upon levels of adherence will be explored in further detail in the sections that follow.

3.3 Prepared proactive practice teams

The existence of prepared proactive practice teams forms a major component of Wagner's Chronic Care Model. This component will be looked at in more detail by focusing on each of the core elements in detail below.

3.3.1 Staffing in each site

Healthcare workers form the backbone of the health care system. The training and experience of health care workers, their workload and levels of motivation impact significantly upon the quality of care provided to patients. In this study, the quality of relationships between patients and staff differed between sites. At Site A, it was very clear that the staff knew many patients by face and interacted with patients comfortably in the public waiting area. Similarly, patients approached staff and chatted informally outside of the consultation room in Site A. There was a generally positive atmosphere in the clinic. The CCMT Manager had been working within the ART clinic at Site A since its inception in 2004.

In contrast, there had been three different CCMT Managers working in the ART service at Site B since inception of the programme. The current CCMT Manager at the site stated during the interview that these changes had a negative impact upon the patient-provider relationship because patients had to start getting to know a new person. Very little interaction between patients and staff within the clinic was observed at Site B. However, when patients were asked about their relationships with health care workers, 96% of patients at both sites (183/191 and 158/164 respectively) agreed with the statement that health care workers care about them.

In Site A, 98% of patients interviewed (186/190) agreed with the statement "When I need to obtain other care that they cannot provide in this clinic, I was given enough help to get to the right place." Similarly, of the 164 patients interviewed at Site B, 93% (153/164) agreed with the statement. These high scores may be interpreted to mean good patient-provider relationships and well-functioning pathways of care. Despite contrasting observations by the researcher, exit interviews with patients generated similar responses to questions about patient-provider interactions. The observations may not fully reflect the patient experience. Responses during interviews with patients may be affected by a desirability bias, introduced when participant responses are guided by what they perceive to be the good or right answer. In this instance, patients may have suggested that their relationship with health care providers is good as they were not familiar with the interviewer and less likely to share their ideas and opinions openly.

The CCMT Plan puts in place core requirements to be met prior to any health care facility being accredited to provide ART to patients. This plan proposes very clear minimum staffing

requirements per 500 patients on treatment (Table 6). Accreditation is based on an anticipated 500 person patient load.

Table 6: Core Staffing Requirements per Service Site to Treat 500 Patients on ART

Category of staff	Minimum (Full-time)
Medical Officers	1
Professional Nurses	2
Pharmacists	1
Dieticians/Nutritionists	1
Social Workers	1 (Part-time)
Lay Counsellors	5
Administrative Clerks	1
Data Capturers	1
Total	12.5

Table 7 represents the actual staffing situation within the sites included in this study and compares this against the proposed staffing capacity that is outlined in the CCMT Plan. It is evident that not only were some positions vacant within both sites, but also that the number of available posts within each category did not correlate with the minimum requirements as stipulated in the CCMT Plan (Table 6).

Failure to meet the minimum staffing requirements seemingly impacts on patient care. The full-time pharmacist is quoted in Site A as having said "Often we have to be fast in our dispensing mechanisms and sometimes patients don't get the best quality out of our service. We are pushed for time […] that's not how I want to be, because pharmacy is a complicated issue. There are some finer details that you sometimes have to take the time to explain to your patient. But you always have that burning issue at the back of your head: time factor, time factor. Other people are waiting as well, Hurry up. Be fast. Be quick (Bodibe, 2006)."
The data below was collected during interviews with Facility Managers in both sites.

Table 7: Comparison between staff required per site in line with Operational Plan compared to staff available in CCMT sites at time of data collection

Regional Hospital (Site A)								Community Health Centre (Site B)					
Staff	**No. staff (req'd)**	**No. Staff (actual)**	**Shortage/ Surplus**	**Vacant**	**Left in last 12 months**	**Joined in last 12 months**		**No. staff (req'd)**	**No. staff (actual)**	**Shortage/ Surplus**	**Vacant**	**Left in last 12 months**	**Joined in last 12 months**
Medical Officers	4	2	-2 (FT)	Doesn't know		1		1 (FT) 1 (PT)	2 (PT)	-1 (PT)		1 (FT)	1 (PT)
Nurses	12	6	-6 (FT)	2		3 (1 retired)		3 (FT)	2 (FT)	-1 (FT)			1
Enrolled Nursing Assistant		-							1				
Lay Counsellors	20	5	-15 (FT)	1	3	2		7 (FT) 1 (PT)	5 (PT)	-5 (FT)			
Volunteers		-											
Dieticians	4	1	-3 (FT)					1 (FT) 1 (PT)		-1 (FT)	1		1
Social Workers	2	1	-1 (FT)					1	1				
Psychologist		1							-				
Clerical staff	4	2	-2 (FT)						1				
Cleaning staff		1							1				
Pharmacy Assistant		1											
Pharmacist	3	1	-2 (FT)					1 (FT) 1 (PT)	1 (PT)	-1 (FT)	1	1 (FT)	1
Data capturer	4	1	-3 (FT)					1	1				

By September 2006, Site A had 2038 patients and Site B had 804 patients registered on treatment. If this formula of core staffing requirements was applied for Sites A and B, the staffing component required would be considerably higher than that available. Despite these gaps, staffing data demonstrated that the number of staff that joined both sites was higher than the number that left.

As no other ART site had been initiated within the broad catchment area of Site A, it had become very difficult for Site A to keep up with the number of patients waiting to begin treatment. The Facility Manager felt very strongly about the need to down refer stable patients to primary health care clinics so that Site A could expand the treatment programme and address some of the capacity issues that the site is currently facing.

3.3.2 Institutional arrangements relating to the role of lay counsellors in the ART service

Identified NGOs received funding from the Department of Health to provide training to lay counsellors who were based at identified clinics and hospitals. Information as to the nature of training provided to lay counsellors within each service was not very comprehensive. This may have been due to the institutional arrangements where lay counsellors were trained, employed, managed and paid by external NGOs. This arrangement was not working smoothly in both sites included in this study.

Khomanani, South Africa's government sponsored HIV/AIDS education programme, provided counsellors to Site A. These counsellors were working in the ANC section, providing VCT, conducting drug literacy training and treatment education. The CCMT Manager in Site A indicated that counsellors were not always willing to follow instructions

provided by staff within the CCMT service as they 'were not working for the hospital' and the site was not responsible for the payment of stipends to volunteers and lay counsellors. During some months, NGOs did not pay the stipends timeously. This resulted in low levels of motivation and morale and, in certain instances, counsellors did not report for work because they had not received their stipend. This was in part attributed to the transport costs that counsellors incur to attend work.

3.3.3 Health worker motivation

In both sites, health workers working in HIV-related services were provided with an anonymous SAQ that probed issues of motivation, workload, organisational structure, relationships within and commitment to the facility in which they worked. Professional nurses, enrolled nurses, pharmacists, counsellors and health promoters completed the questionnaires.

Eleven SAQs were completed at Site A and 24 SAQs were completed at Site B. Site A had more than three times the number of patients on treatment to Site B at the time of completing fieldwork. Although the number of SAQs filled in at each site did not correlate to the size of the treatment programme, when analysing the data it appeared that there were many areas of congruence across the two sites.

Table 8: Self reported motivation of health care workers in HIV-related services in Sites A and B

Statement	Site A				Site B			
	Disagree	Not Sure	Agree	n	Disagree	Not Sure	Agree	n
Overall Motivation								
Overall, I am very satisfied with my job	1 (0.09)	1 (0.09)	9 (0.81)	11	4 (0.17)	2 (0.08)	17 (0.74)	23
I am motivated to carry out my duties	1 (0.09)	0	10(0.9)	11	6 (0.25)	3 (0.13)	15 (0.62)	24
I only do this job so that I get paid at the end of the month	8 (0.72)	2 (0.18)	1 (0.09)	11	21 (0.91)	1 (0.04)	1 (0.04)	23
I feel I'm positively influencing other people's lives through my work	0	0	11 (1.0)	11	4 (0.17)	1 (0.04)	19 (0.79)	24
The major satisfaction in my life comes from my work	4 (0.36)	1 (0.09)	6 (0.54)	11	10 (0.43)	0	13 (0.56)	23
These days I don't feel motivated to work as hard as I could	5 (0.45)	1 (0.09)	5 (0.45)	11	8 (0.35)	2 (0.08)	13 (0.57)	23
Organisational loyalty and commitment								
I am proud to be working at this clinic/hospital	0	2 (0.18)	9 (0.81)	11	1 (0.04)	1 (0.04)	22 (0.92)	24
I am glad I work for this facility rather than other facilities in this province	1 (0.09)	1 (0.09)	9 (0.81)	11	2 (0.08)	5 (0.21)	17 (0.71)	24
I prefer to work in the public sector than in the private sector	1 (0.09)	2 (0.18)	8 (0.72)	11	4 (0.16)	1 (0.04)	19 (0.79)	24
I feel very little commitment to this hospital or clinic	10 (0.90)	1 (0.10)	0	11	16 (0.69)	1 (0.04)	6 (0.26)	23
I intend to leave this hospital	5 (0.45)	3 (0.27)	3 (0.27)	11	9 (0.5)	7 (0.39)	2 (0.11)	18
I can see myself working overseas in the future	5 (0.45)	3 (0.27)	3 (0.27)	11	13 (0.56)	4 (0.17)	6 (0.27)	23
Workload and staffing								
The amount of work I have to do is too demanding	3 (0.27)	2 (0.18)	6 (0.54)	11	9 (0.37)	2 (0.08)	13 (0.54)	24
There are enough staff to do the work in this unit	7 (0.63)	0	4 (0.36)	11	17 (0.71)	3 (0.12)	4 (0.16)	24
Burnout								
I feel emotionally drained at the end of every day	2 (0.20)	1 (0.10)	7 (0.7)	10	5 (0.22)	5 (0.22)	13 (0.57)	23
Management and teamwork								
Hospital/clinic management communicates well with staff in this site/hospital	1 (0.1)	4 (0.4)	5 (0.5)	10	4 (0.18)	2 (0.09)	16 (0.73)	22
If I had a personal problem which affected my work I would feel free to discuss it with my supervisor or manager	1 (0.09)	2 (0.18)	8 (0.72)	11	6 (0.26)	4 (0.17)	13 (0.57)	23
In this facility conflict hampers our work	6 (0.66)	1 (0.11)	2 (0.22)	9	18 (0.78)	3 (0.13)	2 (0.09)	23
There have been too many changes at this hospital /clinic in the past year	6 (0.54)	1 (0.09)	4 (0.36)	11	3 (0.14)	2 (0.09)	17 (0.77)	22
In the last month, have any of your colleagues been unexpectedly absent from work?	8 (0.73)	0	3 (0.27)	11	15 (0.63)	2 (0.08)	7 (0.29)	24
Individual/ Personal factors and attitudes								
I am confident about my ability to do my job	0	0	11 (1.0)	11	0	0	24 (1.0)	24
I feel vulnerable to HIV in my personal life	4 (0.36)		7 (0.64)	11	8 (0.35)		15 (0.65)	23
HIV positive patients make too much extra work for staff	6 (0.6)	1 (0.10)	3 (0.3)	10	18 (0.75)	1 (0.04)	5 (0.20)	24

3.3.4 Overall Motivation

All respondents in both sites (11/11 in Site A and 24/24 in Site B respectively) agreed with the statement "I am confident about my ability to do my job". In Site A, 9/11 (82%) respondents agreed with the statement "I am motivated to carry out my duties" while only 15/24 (62%) CHC respondents agreed with this statement. This suggests differences in the levels of motivation between sites. The statement "These days I don't feel motivated to work as hard as I could" elicited divided responses in both sites. An equal number of respondents (5/11) at Site A agreed or disagreed with this statement. This is different to the initial responses to the statement "I am motivated to carry out my duties" where 9/11 (82%) respondents agreed with this statement.

3.3.5 Organisational loyalty and commitment

Loyalty and commitment differed somewhat between sites. The statement "I am proud to be working at this facility" elicited 9/11 (82%) affirmative responses at Site A, and 22/24 (92%) respondents at the CHC agreed with this statement. Similarly, 9/11 (82%) respondents in Site A responded positively to the statement "I am glad I work for this facility rather than other facilities in the province" and 17/24 (71%) responded positively. There was unanimous disagreement at Site A with the statement "I feel very little commitment to this hospital" while 6/23 (26%) respondents at the CHC agreed with this statement. This draws attention to the difference in levels of loyalty across facilities.

3.3.6 Debriefing

The number of respondents who indicated they felt emotionally drained at the end of the working day was greater in Site A than Site B. The lack of emotional support for staff emerged as a common theme throughout the in-depth interviews. During interviews, staff in both sites raised the irregularity with which debriefing is made available and in Site B, the provision of debriefing and the availability of psycho-social support to staff was dependent on whether sufficient budget was available to pay for this service. When money was available in the budget, debriefing would be conducted by external NGOs contracted to provide this specific service. This would usually happen on a quarterly basis.

Staff in both sites reported that their patients problems become their own and that they found it difficult to work within the CCMT service over the longer-term due to the emotional burden of working with such a vulnerable population. Notably, 7/10 (70%) respondents (to the SAQ) in Site A indicated that they felt emotionally drained at the end of every day. In Site B, 13/24 (57%) agreed with this statement, with 21% (5/24) reporting they disagreed and 21% (5/24) were unsure. In both sites A and B, 54% of respondents agreed that the amount of work they had to do was too demanding.

3.3.7 Management and teamwork

In Site A, 5/10 (50%) respondents responded affirmatively to the statement "Hospital/clinic management communicates well with staff in this site/hospital" compared to 16/22 (73%) respondents at the CHC. The proportion of respondents at Site A that agreed with the statement "There have been too many changes at this hospital /clinic in the past year" was greater than those at Site B. Interestingly, levels of change and staff turnover are higher in Site B. Trust in management was higher in Site A than in Site B.

3.3.8 Individual/ personal factors and attitudes

The majority of staff at both sites indicated that they felt vulnerable to HIV in their personal lives. More than half of respondents in both sites disagreed with the statement "HIV positive patients make too much extra work for staff" (6/10 in the hospital and 18/24 in the CHC respectively).

Despite the large difference in the number of patients on treatment and the number of staff working in the CCMT service at both sites, there were many areas of similarity in responses. Staff in both sites identified strongly with the facility in which they worked. The most obvious differences between sites pertain to levels of motivation and organisational change.

3.3.9 Training and Skills Development

Levels of training were assessed for all HIV-related services and significant differences in training between sites were identified. Staff at Site A had received extensive training on complex clinical aspects of administering ART. Many of these content areas were not identified by staff interviewed at Site B. Levels of training also varied across services within the same facility. Notably, staff interviewed within each service did not have full information as to the levels of training within their own unit as this information tended to be kept by the Facility Manager and was used to inform who should be identified to receive training in specific areas. Training tended to be done on a rotational basis so as not to affect the functioning of services. This meant that it took considerably longer to train and skill staff to be fully prepared to work in the CCMT service.

Table 9: Levels of training as reported by CCMT Managers in Sites A and B

	Site A		Site B	
Staff	**n**	**Content**	**n**	**Content**
Doctors	1	HIV/AIDS, ART,	2	ART, PMTCT, counselling, HIV & AIDS
Nurses	4	HIV/AIDS, PMTCT, ART, Management of Discordant couples, Pharma-covigilance	1	HIV & AIDS, counselling, CCMT
Lay counsellors/volunteers	5	three day training on ART, Pre and Post Test counselling, Prevention	5	HIV & AIDS, Comprehensive HIV/AIDS, Counselling
Clerical	2	ART, Data Management	2	Basic HIV/AIDS
Pharmacist	1	ART	1	Comprehensive HIV/AIDS
Pharmacy Assistant	1	ART (trained by TAC)		
Social Worker			1	Basic HIV/AIDS

Unit Managers in the TB, VCT, and ANC services were asked which of their staff had received training in ART specifically. Table 9 provides information on content areas of training provided and is a general reflection of the training situation for each staff category. Not all staff in each staff category had received training in all the content areas listed. Nurses working within the TB service at Site A had received more training that staff within Site B. In Site A, two professional nurses and one DOTS supporter had received training in ART.

In comparison, in Site B the only person who had been trained in ART was a sessional doctor working in the unit three times a week. In Site B, the TB service operates from 07h00 to 16h00 daily and is managed by a staff nurse on a full-time basis. She was assisted by a professional nurse on certain days. The staff nurse had not attended any training about HIV or ART. This was of concern given the strong link between TB and HIV and the increasing emphasis being placed upon cross-referral of all TB and HIV patients for testing in each service.

The VCT service at Site A was staffed by five enrolled nurses, four lay counsellors, and one part-time professional nurse who were assisted by four volunteers. Of this staff component, only the part-time professional nurse and four lay counsellors had received any training in HIV. In Site B, the VCT service was staffed by one doctor who also held other clinical duties, two professional nurses who share other clinical duties and two lay counsellors. In this site, the counsellors (who are responsible for the day-to-day running of the service) indicated that, to their knowledge, they were the only staff who had received training in HIV. This training included topics such as pre- and post-test counselling, basic information about HIV/AIDS, couple counselling and a follow-up intensive course on HIV/AIDS.

Staff in the ANC unit at Site A had received more training than those working in Site B. This may be explained by the greater patient load and higher demand for services in Site A. Professional nurses, enrolled nurses and counsellors had all received some training in HIV/AIDS. Difficulties cited by the CCMT Manager at Site A were people being trained and then transferred to another department and the difficulty of staffing departments when staff are released for training.

Nurses and counsellors in the ANC unit at Site B had been trained in HIV. Both nurses and counsellors were trained in PMTCT and VCT. It was difficult to obtain any further information as to the length of the training and whether there were any differences in the content covered with these two groups. Information supplied by the ANC unit in Site B indicated that while nurses had received training on PMTCT, none had been trained on managing ART in pregnant women. This is problematic given the clinical complexity of working with pregnant women who are simultaneously taking ART.

3.4 Delivery systems design

This component of the CCM speaks to operational arrangements within facilities. Some of the aspects covered during interviews with Unit Managers included referral processes and relationships between services, interaction with the surrounding community, and processes used to initiate, track and maintain patients on treatment.

3.4.1 Integration of services and continuity of care

The term integration is used to explain referral relationships and pathways of care. Facility and CCMT Managers as well as ANC providers were asked to rate the degree of integration of services within the facility in which they worked.

Table 10: Perceptions of integration within sites

Statement	Site A			Site B		
	Facility Manager	CCMT	ANC	Facility Manager	CCMT	ANC
A series of vertical activities completely separate from each other						
A series of activities partially coordinated with each other						√
A well integrated set of activities						
A well integrated set of activities that is also well integrated into the activities of the clinic/OPD as a whole	√	√	√	√	√	

There was unanimous agreement among Unit Managers at Site A that services were well integrated within the facility. This is consistent with the observation that staff knew each other well and that services were located in close proximity to each other. This level of

integration was also facilitated by the fact that all staff within the unit reported to one central person. Statistics were submitted to the CCMT Manager who also oversaw the functioning of the TB, VCT and ANC services.

One weak point in the continuity of care at Site A was the separation of duties between primary health care clinics and the hospital in relation to provision of TB treatment. Site A had a TB focal point where patients commenced treatment. Patients were then referred to primary health care clinics to be managed. An acknowledgement slip was provided to patients to take to the clinics. This slip should have been returned to the hospital. This did not always happen as clinics were frequently without drivers. For this reason, feedback on TB patients was predominantly done telephonically. PHC clinics were also responsible for follow-up of TB patients. It was said that the TB focal point did check that the patient reached the clinic but the site lacked the capacity to do any community-based follow up with patients who did not attend the PHC clinic to which they were referred. The focal point shared space with the VCT service. This allowed for easy referral between services. Patients who tested positive for TB are advised to go for VCT.

When asked about referral procedures for patients who have TB and test HIV positive, a nurse working in the TB service at Site A indicated that patients often died while waiting to start ART, and that family members blamed staff working in the TB service for the delay between completing the treatment preparation process and initiating treatment. Similarly, a lay counsellor in Site A had the following to say: "I see many people die waiting for ARVs so sometimes I feel we are not doing enough to save them".

In both Sites A and B, the protocol of starting a patient on TB treatment prior to initiating ART was followed. The Facility Manager in Site A reported that the CD4 count of patients who are co-infected with HIV and TB tended to increase once the patients were taking TB treatment, thus limiting the extent of the clinical side-effects likely to accompany early ART. In Site A, patients with HIV who are co-infected with TB and have a CD4 count of greater than 200 were referred to a wellness programme in the community and asked to return to the ART service at the site after 12 months, during which time patients should have completed TB treatment. This created fragmentation in the delivery of consistent high-quality responsive patient care.

In Site B, the screening, initiation and ongoing follow-up of patients taking TB medication took place within the facility directly. This made the monitoring and follow-up of patients registered in the CCMT service far less complex. Similarly, patients who were found to have a CD4 count greater than 200 were referred to the wellness programme that was run within the facility. In Site B, one professional nurse worked across the TB, ART and wellness service. This should mean that she had some clinical knowledge of the patients who were obtaining services at different points and their particular needs and problems. The services were all located within one main building. Staff members who were interviewed within each service indicated that they accompanied patients personally to their point of referral. As all services were located within one building in Site B, it was not a routine procedure to prepare referral letters.

Table 11: Views expressed by programme managers on integration of HIV-related services

HIV related services	Factors which facilitate integration	Barriers to integration
Regional Hospital (Site A)		
Facility Manager	• ART service functioning every week day • VCT service well used • No drug stock outs	• Shortage of pharmacists delays patients starting on treatment. The absence of a wellness programme contributes to high numbers of patients falling out of the system • Programme is saturated and is still treating patients who joined the programme in 2004. It is urgent that stable patients are down referred to PHC clinics so as to address the high waiting list. • Insufficient staff in the ART clinic • Having to use untrained staff to complete tasks in unit (Queue marshals assist in pharmacy and provide drug counselling) • Difficult to monitor number of patients still on treatment as many deaths not reported
ART	• High rates of self-referral for VCT allow for early intervention, education for behaviour change and delay the need to start treatment • Stability within facility with low turnover • Good teamwork and high levels of loyalty and commitment (described in detail in Table 8 above)	• Site covers a large geographical area – patients often lost to follow up • No wellness programme due to lack of space and staff – resulting in large fall-out of HIV+ patients • Not always continuity of care as doctors and nurses are overstretched • Difficulty of integrating patients from private sector into public sector due to different drug regimens used • Absence of a strong intensive monitoring system • Temporary stock out of paediatric drugs means patients had to return after one week for new repeats
Voluntary Counselling and Testing (VCT)	•	• Some patients who are HIV+ do not return to the hospital due to distance (do not have money for taxi fare)

HIV related services	Factors which facilitate integration	Barriers to integration
TB service	• Good cooperation among staff • Physical proximity of services	• Long waiting lists means patients complete adherence counselling and can not commence treatment • Patients being referred to PHC clinics • Doctors test in-patients for TB and do not refer via focal point so hard to keep accurate records • Reliance on external volunteers and NGOs to track patients due to staff shortages and absence of a vehicle • Patients seen by doctors often do not return to focal point to get results and do not start treatment when necessary (Sputa taken by doctors directly, not within TB service) • Felt that it should be routine that all patients test for TB before starting ART. The high number of tablets patients take simultaneously (TB& ART) increases likelihood to default. • Lack of familiarity with data means data is not being used to track clinical outcomes, monitor uptake of services and movement within services
Prevention of Mother-to-Child Transmission (PMTCT)	• Good referral between services • Patients bring partners for testing • Existence of support group for pregnant women	• Patients without IDs cannot be enrolled on the treatment programme. These patients are also unable to get a CD4 count taken as this is done through the ART clinic

HIV related services	Factors which facilitate integration	Barriers to integration
Community Health Centre (Site B)		
Facility Manager	• Excellent data collection and capture • High levels of community involvement • ART service running daily • No patient is turned away from ART service for having come on the wrong day	• Absence of regular debriefing increases levels of burnout
ART	• Area where ART provided is located in a quiet area behind closed doors facilitating confidentiality • Staff working in ART are not working in other units/areas • Regular drug supply, no problems with procurement or distribution • Good support from Facility Manager • Functioning community health committees • NGOs and Traditional Leaders who refer patients and assist with tracking patients	• Lack of space within ART clinic resulting in some patients having to stand while waiting to be seen • Frequent change in CCMT Managers has negative consequences for patient-provider relationships. Patients lose confidence in ART staff and affects relationship building. Frequent loss of personal history and relationships when staff changes • Difficult to manage patients coming in from private sector who are started on second line regimen drugs
VCT service	• Effective use of routine data and information to inform service delivery • Passion and commitment of staff	• Lack of feedback from ART service as to how patients are progressing • Erratic payment of salaries due to counsellors being contracted to and paid by NGOs
TB service	• Staff work across sections where necessary	• Patients who are HIV+ placed on TB treatment by doctors without a confirmed TB diagnosis • Heavy administrative load for one person • Enrolled nurse staffing the TB service has not been trained in ART • Patients referred to TB service from outside CHC without a referral letter • Difficult to use computer to record data on TB patients as many come with incomplete identifying information
ANC/PMTCT service	• Health education programmes well-attended	• Staff are shared between VCT and PMTCT • Difficult to track and follow-up patients

3.4.2 Adherence Management Systems

Semi-structured interviews with CCMT Managers collected information about the process of treatment preparation in each site and the procedure for monitoring and tracking patients who were not adhering to treatment or had dropped out of the programme. The CCMT Manager was asked to map out the stages involved in determining whether a patient is ready to begin treatment and the role of each health care worker. Treatment preparation processes differed between facilities. This could be attributed to the difference in procedure that was followed when a patient received a positive HIV test result.

Due to the high number of patients on treatment and the limited numbers of staff at Site A, no wellness programme existed within the site for patients who did not qualify for ART. These patients were down-referred to clinics for ongoing management and asked to return after twelve months or when they fell within the clinical criteria of a CD4 count below 200, whichever was sooner. All wellness, support group activities and DOTS support was done through clinics and organisations working in the area. The CCMT Manager was not familiar with these organisations. The reasons given for the lack of NGO involvement in the site was the lack of space. This was consistent with observations of the site. As there was no wellness service currently being run within the CCMT service itself, there was a risk that patients would not return.

Site B had an active wellness programme that was run by a professional nurse with ongoing referral of patients from VCT to wellness and, at a later point, when necessary, referral to the ART clinic to commence treatment.

Table 12: Treatment Initiation Rates in Sites A and B (April- October 2006)

Number of patients started on treatment	April	May	June	July	Aug	Sept	October
Site A	34	58	74	81	111	213	175
Site B	21	58	31	40	40	24	40

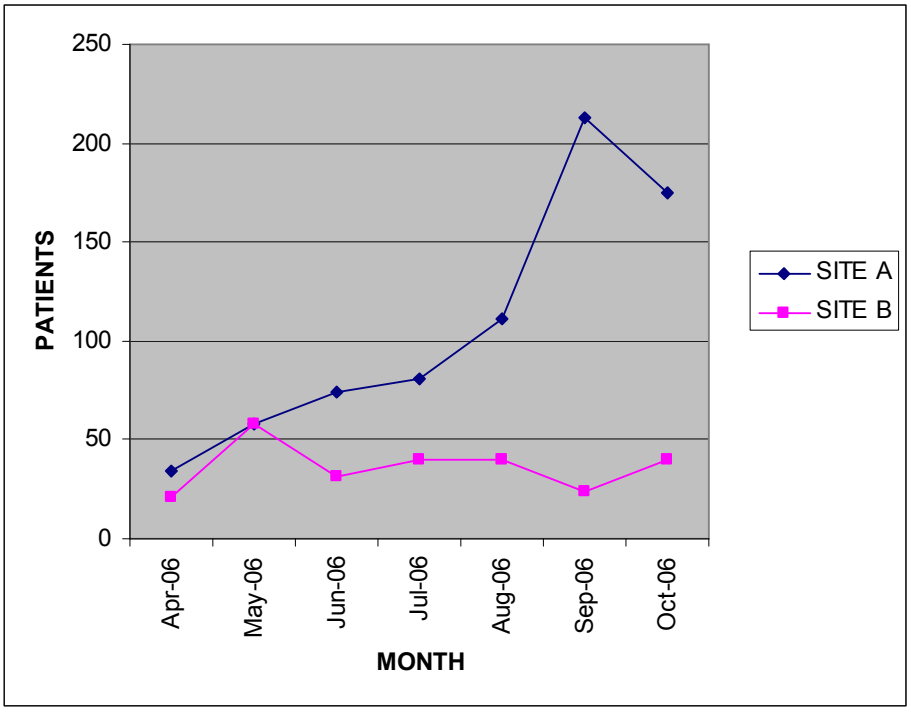


Figure 5: Treatment Initiation Rates between April and October 2006 in Sites A and B

3.4.2.1 Treatment preparation in Site A

The treatment preparation process began with three successive counselling sessions during which a detailed history was obtained from the patient. The history taking process looked at information such as family situation, employment status, social support and living conditions. The first counselling session was done by a lay counsellor and provided basic information and education about HIV, AIDS and ART. The following two counselling sessions were conducted by a nurse and focussed on the importance of

adherence, and drug training, including possible side-effects for each drug. Once the three sessions were completed, the patient was referred to the social worker for a thorough assessment. This assessment included sources of support and the living situation of the patient. Once the assessment was complete and the patient was found to be ready for treatment, they were referred to the dietician to begin supplements and vitamins. The shortage of social workers to conduct assessments was one of the reasons that patients who had completed treatment preparation were put on a waiting list prior to initiating ART. This meant that patients may have completed treatment preparation but could not start treatment until this assessment was complete. Considering that Site A had three times the number of patients on treatment, it was clear that there are not sufficient health care workers to do the work required in the ART service. In an attempt to address the long waiting list, treatment preparation processes were shorter in Site A than in Site B. Though this may have alleviated some of the backlog of patients, a bottleneck occurred where people had completed treatment preparation but were still facing delays in the initiation of ART.

3.4.2.2 Treatment preparation in Site B

The treatment preparation process at Site B was described by the Facility Manager in great detail. Once the patient's CD4 count is below 200 and all opportunistic infections had been treated, the patient was referred for adherence counselling. This took place over three to four sessions, depending on the patient's emotional status and readiness to begin treatment. Should it be necessary, patients were offered more counselling sessions. The Facility Manager explained that this was crucial as levels of concentration among patients with advanced HIV infection was often poor in addition to the difficulties caused by possible dementia associated with late stage AIDS. The adherence counselling was conducted by a lay counsellor. During the first visit, the nurse assessed the patient's

nutritional status and, where necessary, the patient was referred to see the dietician. At the time of completing fieldwork, the position for a dietician was vacant. Since completing data collection, a full-time dietician had been employed at Site B. In the second session of adherence counselling, the patient's level of understanding was assessed and the information covered in the previous session was recapitulated. The third session checked the sexual behaviour of the patient and support structures available to the patient. At this stage, baseline bloods were also collected – viral loads, full blood counts and liver function tests.

Once the results were received, the patient was referred to the doctor for assessment and treatment was initiated. Throughout the treatment preparation process, the patient was able to see a registered nurse. In instances where the clinical prognosis of the patient was poor, the patients were referred to see the doctor at their first visit. All patients were encouraged to bring a treatment buddy to the treatment preparation process.

Table 13: Methods and procedures used in treatment preparation and adherence support

Tools and methods	Site A (Regional hospital)	Site B (CHC)
Treatment preparation		
Individual counselling/briefing	Yes	Yes
Group education	Yes (dialogue with health worker)	Yes – conducted by CCMT Manager where patients are provided with drug training. Talks conducted by Treatment Action Campaign on Tuesday and Thursday.
Nomination of treatment buddy	Yes	Yes
Home visit	No, only in exceptions is a home visit conducted. If there is a dire need, the patient is referred to the social worker. The social worker is unable to conduct home visits due to a vehicle not being available	Yes – Where patients do not keep appointments or a problem is identified, a home visit is made to the patient by the DOTS supporters from surrounding NGOs involved at the CHC
Knowledge questionnaire	No – the CCMT Manager indicated that this was not done as it would 'make people uncomfortable'	Yes – done by doctor
Consent forms or patient contract	No – only used in obtaining consent for voluntary counselling and testing (VCT)	Yes –contained in patient files
Written information/pamphlets	Yes – obtainable at the front desk	Yes - Provided by Khomanani, the government sponsored health education/communication programme
Treatment support		
Follow-up appointments	Yes	Yes
Pill boxes	No – to be provided by patients	No – to be provided by patients
Tick sheets	Yes	Yes
Adherence assessment		
Self reported adherence (three or four day recall)	Yes	Yes
Pill count	Yes	Sometimes – depending on availability of person to help
Viral load monitoring	Yes – done at baseline and two months after commencing treatment, then every six months after	Yes
Return for follow-up	Yes	Yes
Managing defaulters		
Identifying patients who miss appointments	Noted by pharmacist	Noted by pharmacist
Tracing patients	Contact patient telephonically	Done by NGOs

Interviews and observations demonstrated that there was greater structured NGO involvement in Site B. Patients in Site A tended to be down-referred for NGO support due to the lack of staff and resources within the site itself. The CCMT Manager in Site A indicated that all support groups for people taking ART were run in the community. Support groups focusing on disclosure of HIV status were hosted within the ANC service.

Patients who tested positive for TB at Site A were started on treatment but down-referred to clinics for follow-up. This means that DOTS supporters were located at clinic level and that Site A (hospital) did not have the access to DOTS supporters to assist with home visits and support, in the way that Site B had.

Site B had a significantly smaller catchment area and patient load than that of Site A. In Site B, follow-up of patients taking TB treatment took place at community level and was conducted by DOTS supporters attached to three NGOs. The DOTS supporters also assisted with monitoring patients taking ART. The Facility Manager reported that such volunteers also brought chronically ill patients who required immediate medical attention directly to the clinic. The Facility Manager reported that the site had developed good relationships with traditional healers in the surrounding community. The traditional healers had received some training on HIV and the treatment of opportunistic infections. It was reported that subsequent to the training, traditional healers were also bringing patients who were very sick to the clinic for assistance. This was observed during a visit to the site. Mindset Health which provides health education through broadcast television materials in clinics and the Treatment Action Campaign (TAC) were providing drug education and counselling at Site B.

In exit interviews, more patients reported attending support groups in Site B than in Site A. In Site B, 30/164 belonged to a support group. The majority of these patients attended weekly meetings (51%). Of the patients on treatment who belonged to a support group, 29/30 had never missed taking any of their medication, while one of the 30 had missed taking their treatment more than three months ago. This data draws attention to the powerful role that support groups can play in increasing adherence among group members. On the day that patients attended the support group, lunch was provided by an NGO.

3.4.2.3 Management of patients who are defaulting on treatment

Site A

If it was found that a patient was not keeping their appointments and was missing their treatment, counselling was intensified. This was done by involving the family and treatment supporter when available. Patients were then referred to NGOs for follow-up. Patients who were identified as 'chronic defaulters' (interrupting treatment and habitually not keeping appointments or taking treatment as prescribed) were required to come for their treatment weekly. This is in contrast to adherent patients who attended the clinic to collect medication monthly. This was to ensure closer monitoring and to limit the length of time treatment was interrupted. The CCMT Manager stated that patients who formed part of this group did come weekly to collect treatment and did observe these new arrangements.

Of the 190 patients interviewed at Site A, 20 patients had missed their tablets since commencing treatment. The length of time the patients had missed their tablets in Site A ranged from 1 to 31 days. The most frequently cited reasons for people missing

treatment by these 20 patients was "people forget" (5/20) and "they drink alcohol" (4/20). "Because of the side-effects", "being far away from home" and "don't know" all scored the same number of responses (2/20).

Site B

All patients who did not arrive for their appointments were recorded by the pharmacist and step-up adherence measures were put in place. If there was an underlying problem, the patient was referred to the social worker. In the time since collecting the data at Site B, the social worker had resigned and by January 2007 the post had still not be filled. This made the provision of thorough adherence counselling and social support difficult. Of the 164 patient interviews conducted at Site B, 24 patients reported missing doses of their treatment since commencing ART. In Site B, the length of time that patients had missed taking their treatment ranged from 1 to 93 days. The reasons that were most frequently cited for patients missing treatment were "they forget" (6/24), "because of the side-effects" (5/24), "they are out of town" and "don't know" scored the same number of responses (4/24).

3.5 Decision support systems

3.5.1 Physical infrastructure

In both sites, all services were located within close proximity to each other and were within five minutes walking distance to each other. Both sites also had services which dealt with patients requiring post-exposure prophylaxis due to sexual assault. These were also in close proximity to other HIV related services. In Site B, all HIV related services were located within one main building. Just outside of the main entrance to the building was a youth friendly centre funded by Lovelife. The CCMT Manager regarded this as a

strength because it allowed youth to come forward for sexual health services without fearing they would be judged by clinic staff. Staff within the Lovelife clinic knew clinic staff well. This meant that should a person test positive for HIV, the referral process was smoother and easier.

In both sites, the ART service was located in a very small physical space. While both units provided some measure of confidentiality to patients (by virtue of their location), by mid morning the waiting area was congested. In some instances, patients in Site A were standing due to a lack of chairs. This created a particular problem for patients who were heavily pregnant. The CCMT Manager and the nurse interviewed in the ANC unit both confirmed that this sometimes resulted in pregnant women not wanting to wait.

In Site A, the ART clinic had been moved into an existing building. This had resulted in moving the social work service out of the building and into a container in close proximity to the unit. Though the waiting area in Site A was often overcrowded, there was a second waiting area to which patients requiring any laboratory tests were referred. Health information notices and prayers are displayed on an information board in the smaller waiting area. While there was some movement of patients between waiting areas, the main area where patients collect their files remained busy. During exit interviews, patients were asked how many hours they spent at the clinic at each visit. In Site A, the length varied from one to twelve hours. The greatest number of patients spent five hours at the clinic at each visit (42/187 or 22%). In comparison, the time spent by patients in Site B ranged from one to eight hours. The majority of patients interviewed (48/159 or 30%) spent four hours at the clinic for each visit. This considerable difference may be attributed to the number of patients receiving treatment at each site. In Site B, some building work had been done to create the new ART clinic. Despite this, there was no

allocated waiting area and patients sat on benches in the passage behind a closed door. As the number of patients on treatment increases, it is likely this will become increasingly problematic.

3.5.2 Drug distribution and supply

CCMT Managers in both sites reported that they had not experienced many problems with drug stock outs in the last six months. Pharmacies in both sites were visited to confirm the availability of drugs listed in Table 14 below. All these drugs form part of the Essential Drug List.

Table 14: Checklist of drugs and supplies

General drugs and supplies	Anti-Retrovirals
Sharps disposal containers	Stavudine caps 30mg (Stavir/d4T)
Condoms	Stavudine caps 40mg (Stavir/d4T)
Ciprofloxacin tablets	Stavudine solution1mg/ml (Stavir/d4T)
Flagyl (Metronidazole) 400mg	Lamivudine tabs 150mg (3TC)
Erythromycin 250mg tabs	Lamivudine solution 10mg (3TC)
Doxycycline 100mg tabs	Efavirenz caps 200mg (Stocrin /EFV)
Latex gloves	Efavirenz caps 50mg (Stocrin /EFV)
Rapid HIV/AIDS testing kits	Efavirenz tabs 600mg (Stocrin /EFV)
Purple topped blood specimen containers	Didanosine tabs 200mg (Videx/ddI)
Nevirapine tablets 200mg	Didanosine tabs 100mg (Videx/ddI)
Nevirapine suspension 50mg/5ml	Didanosine tabs 50mg (Videx/ddI)
Nystatin	Zidovudine tabs 300mg (Retrovir/AZT)
Analgesia (paracetamol)	Zidovudine syrup 50mg/5ml (Retrovir/AZT)
Cotrimoxazole (Bactrim) syrup	Lopinavir/Ritonavir caps 133/33mg (Kaletra)
Cotrimoxazole (Bactrim) tablets	Lopinavir/Ritonavir suspension 80/20mg/ml (Kaletra)
Acyclovir 800mg	Ritonavir suspension 80mg/ml (Norvir)
Amitryptaline	Ritonavir caps 100mg (Norvir)
Hydrocortisone cream	Abacavir tabs 300mg
Loperamide 2mg	Abacavir solution 20mg/ml
Sputum containers	

At Site A, the chief facility pharmacist was responsible for the ordering, control and receiving of all drugs. The drugs were kept at the main pharmacy and fetched by the ART service as needed. The Facility Manager at the site indicated that the facility almost never ran out of essential drugs and that the facility was able to order drugs daily when

the availability of specific drugs was declining. The CCMT Manager indicated that the relationship with staff in the wards was good, and that staff did phone when patients who were on treatment ran out of drugs while admitted. This was quite different to the initial concerns raised by the CCMT Manager that communication between the wards and the ART clinic was erratic due to lack of staff, leaving full responsibility for follow-up of patients with the CCMT Manager directly.

The drug supply at Site B was managed by professional nurses. The Facility Manager in the site also indicated that the facility almost never ran out of essential drugs. The central distribution depot informed the Site when it was out of stock of certain items and would deliver such drugs as soon as they arrived at the central depot. ART drugs were kept in a separate store room at Site B. Though both sites had a dedicated pharmacist, it was only in Site A that the dedicated pharmacist manages the ART drugs. In Site B, ART drugs were managed by the CCMT Manager. Tracking of defaulters was done by the pharmacists in both sites.

Table 15: Drugs and supplies not in ARV pharmacy

Drug name	Facility	Reason
Videx 200mg	Site A	Not given (2nd line regimen drug)
Videx 50,100, 200mg	Site B	As 2nd line regimen drug, not routinely stocked. Only seeing patients being put on 2nd line regimen drugs recently, on order at time of visit
Rapid HIV Testing Kits	Site A	In consulting rooms
Rapid HIV Testing Kits	Site B	In consulting rooms
Nevirapine tablets 200mg	Site A	In labour ward
Nevirapine suspension 50mg/5ml	Site A	In labour ward
Ritonavir suspension 80mg/ml (Norvir)	Site A & Site B	Not given
Ritonavir caps 100mg (Norvir)	Site A	Not given

The CCMT Manager in Site A reported a shortage of Stavudine (paediatric formulation) during July and parts of August 2006. This was managed by providing patients with a one

week supply. In a very small number of patients, patients missed treatment for two weeks. It was acknowledged that this was a risk for adherence.

3.5.3 Laboratory capacity

Both Sites A and B reported that they did not have major problems with the laboratory service and the turn around time for results. Turn around time ranged from 48 hours to five days. The information provided by the Facility Manager and the CCMT Manager as to the availability of tests and the turnaround time was not consistent in Site A. Budgetary issues in Site A meant that CD4 counts could not be requested or conducted in the Outpatient Department and had to be conducted within the CCMT service. In certain exceptions, doctors were able to request CD4 counts for in-patients to be done directly. The Facility Manager reported that the relationship with the laboratory service was good and that the service was reliable. Where results were not returned to the facility or were needed urgently, staff were able to call the service directly for results.

Tests for Viral load, Liver Enzymes, HIV ELISA tests and PCR all had a five day turnaround time in Site B. All major tests were available on site. Staff were able to call the laboratory directly in instances where results were not immediately available. As in Site A, the laboratory service was able to provide results telephonically, informed staff when the results were needed urgently and that the facility needed to trace the patient as soon as possible. Specimens were collected from Site B daily by a courier and results returned in the same way.

3.5.4 Use of staffing guidelines and protocols

CCMT Managers were asked what protocols were used in the CCMT service and asked to indicate where such protocols were displayed. Most of the protocols were immediately

available and used by staff working in the CCMT service. In certain instances, protocols were located in other HIV related services. For example, protocols relating to infant feeding and PMTCT, and management of HIV positive pregnant women were kept in the ANC section in Site A. Protocols relating to the Management of a person with a STI and National Guidelines on home-based care and community based-care were not available within Site A. It is possible that guidelines for the management of STIs were located in the outpatient section (not immediately observable). All the protocols listed were immediately available within the same building in Site B. This is because all HIV-related services were within the same building.

3.6 Clinical information systems

In both sites, patient files were kept in a lockable cabinet. Both sites had rooms in which data capturers and clerks worked. Laboratory data was recorded on computers in these rooms. In Site A, a counsellor was able to provide data pertaining to the full outpatient services, but some routine data elements were not easily available. Data capturers were able to provide routine data in Site B that the Facility Manager did not have in her office.

Table 16: Reporting processes in place at Sites A and B

Site	Dept	Content	To	Frequency	Paper or electronic	Local, provincial or national design
A		Number visiting VCT service, number of discordant partners, number testing HIV+, number referred to ART clinic	CCMT Manager	Monthly	Paper	Own
	ART	Pharma-covigilance	Medunsa	Quarterly	Electronic	Own
	ART	Numbers on treatment, number of CD4 counts and viral loads conducted	Province	Monthly	Electronic	Province

	VCT	Number of HIV tests done, number of HIV+ results, CD4 counts done, staging, age of patients	Regional	Monthly	Paper	Own
B	CCMT	Headcount, number of repeat scripts filled, referrals	District	Monthly	Electronic	Province
	CCMT	Number of new patients initiated o treatment, Numbers on treatment, number of CD4 counts and viral loads conducted, number of deaths, drop outs and transfers	District	Monthly	Electronic	Province
	VCT	Number visiting VCT service, number of discordant partners, number testing HIV+, number referred to ART unit	CCMT Manager	Monthly	Paper	Province
	PMTCT	Referrals received, number of CD4 counts and viral loads taken	CCMT Manager	Monthly	Paper	Own

3.6.1 Data collection and storage

Facility and CCMT Managers were asked to provide information about the collection and recording of statistics within HIV-related services. The Facility Manager at Site A indicated that the facility receives very little support from the Region and that the only time they see anyone from the Region is when they want statistics.

When requesting copies of routine data at Site A, the data available was manually recorded and located in the office of the CCMT Manager. It was not possible to draw the data from the computer located in her office. Information systems and data collection processes in Site B were well managed. The Facility Manager had a very good understanding of the various data elements and was able to speak to the data and possible causes for changes in the number of patients using the service and any variations in head counts. Though the data management system appeared better in Site B, only 67% of patients had viral load results available in their files, as compared to 83% at Site A.

CHAPTER FOUR – DISCUSSION

The previous chapter has provided a summary of the main findings generated from key informant interviews, SAQs and observations completed in Sites A and B. This chapter will provide a discussion on levels of adherence and organisational capacity within both sites using Wagner's Chronic Care Model as the framework for analysis. Elements of the Chronic Care Model that will be discussed are prepared proactive practice teams, delivery Systems design, decision support and clinical information systems.

Both sites appeared to be functioning relatively well. Areas of difficulty were not dissimilar to those facing the CCMT programme more broadly. Each had strengths in different areas and displayed efforts to manage constraints. Staffing at both sites was relatively stable, though levels of motivation varied. The use of data to inform decision-making and assess overall performance differed between sites. The Facility Manager in Site B had a stronger grasp of CCMT data. It is important to note that the Facility Manager in Site A was responsible for the Outpatient Department (working across a much bigger service) and was not as close to the CCMT service. Despite these differences, adherence was fairly similar in both sites.

4.1 Prepared proactive practice teams

4.1.1 Staffing

There was a general view that a major deficit in the current staffing situation is the shortage of nurses and pharmacists. The lack of pharmacists was an issue that was raised by the Facility Manager, CCMT Manager and the TB nurse during interviews at Site A. Significant staffing gaps included the shortage of nutritionists and social workers. The

tasks and responsibilities of these three professions are crucial to initiating and maintaining patients on treatment. At the same time, the proposed staffing guidelines presented in Table 6 need to be reconsidered. In certain instances, as programmes mature and patients remain stable on treatment, the responsibilities and tasks of professionals may shift.

This will involve reconsidering the staffing ratios in line with available skills and knowledge among stable patients, community members and other organisations involved in the ART rollout. In Site A, it was very clear that the ability of the site to continue initiating patients on treatment and to address the backlog of patients waiting to start treatment would require the reorganisation of tasks or an increase in the number of staff working within the CCMT service. While the staffing formula outlined in the CCMT Plan would suggest that there are staff shortages in Site B, the site appeared to be able to meet current patient needs. Treatment initiation rates appeared to be relatively constant and there is no waiting list. Site B also has an enrolled nursing assistant working within the CCMT service. There were no enrolled nursing assistants working in the CCMT service in Site A.

Shortages of professional nurses and other scarce skills professionals have been described elsewhere as one of the major barriers for the expansion of South Africa's ART programme. The CCMT Plan proposes increasing the recruitment of nurses for training; creating new posts; and creating new categories of health workers. To date, no substantial increase in the number of nursing graduates has been noted. Secondly, nurses who are currently studying do not receive any specific training in HIV or the administration of ART. This is a major shortfall in light of the escalating AIDS crisis facing South Africa.

Task shifting and the creation of new categories of health workers needs to be seriously considered as a solution to human resource constraints. This would ensure that capacity is built internally, the health system is strengthened and available human resources are utilised optimally. Careful consideration will need to be given to identifying tasks that can be shifted to lower category health workers. One example where this is the necessary is the use of pharmacy assistants to dispense treatment for patients collecting repeat scripts of medication. The shortage of medical officers has resulted in the emergence of nurse-centred CCMT Programmes and was identified as a major strength of both programmes included in this study. However, for Site A to continue to expand and maintain high levels of adherence, task shifting is imperative.

4.1.2 Productive patient-provider interactions

Both sites demonstrated varying levels of interaction and relationships between patients and staff. Observations by the researcher provided a somewhat different picture to the input shared during in-depth interviews with staff and patient exit interviews. Observations at Site A suggested the presence of good and positive relationships between patients and health care workers, suggesting high levels of acceptability[1] among patients, one of the basic criteria for assessing levels of access to the ART service. This was borne out by low staff turnover and positive interaction between staff and patients in the waiting area of the ART clinic. Stability in staff within the CCMT service was likely to mean that patients have developed relationships with staff members who had a solid knowledge of patient's own individual circumstances and factors which may affect adherence to treatment. This was also supported by reports and observations that

[1] Acceptability is the extent to which patient expectations are met. High levels of acceptability indicate that patients are generally satisfied with the health care provided.

patients travelled beyond the reach of Site A to be cared for by nursing staff who were previously working within the HIV/AIDS sector at a different public sector facility in Gauteng.

This is in contrast to Site B where there had been three CCMT Managers since the programme was initiated in 2004. Observations noted health workers interacting very little with patients and the shortage of professional nurses in the unit meant that patient consultations were very brief. The outgoing CCMT Manager reported that staff turnover was making it difficult to establish and maintain relationships between health workers and patients.

The quality of patient-provider relationships within both sites may also have been influenced by the quality of relationships among staff. Staff who feel motivated and committed are more likely to work well in a team and to work towards achieving common goals. Both observations and responses by staff in Site A suggested higher levels of organisational loyalty and team work, although this did not appear to affect outcomes in any significant manner.

4.2 Delivery systems design

4.2.1 Access to Services

The accessibility of both sites to patients was seemingly influenced by the geographical location of the site, the costs associated with attending the ART clinic and the experience and interactions of patients with health workers. Both sites exhibit varying levels of access. Both are accessible to patients for different reasons. The previous section provided considerable detail regarding the quality of human interaction within both sites.

While Site A may display good quality human relationships, it was more expensive to access and the geographic proximity to the target population varied considerably. Despite the barriers imposed by cost and distance, enrolment remained high in Site A. It is important to reflect on whether the absence of a waiting list and the slower uptake of ART at Site B were reflective of the patient experience of human interactions or the lower level of need in the surrounding area.

The delay in rolling out a second ART site within the catchment area of Site A placed considerable pressure upon the existing ART service. Patients came from a large geographical area, making it especially difficult to create and maintain strong community relationships with multiple stakeholders. This may also have possibly caused difficulties with the ongoing follow-up of patients at community level. Secondly, the material costs (R25 per visit) associated with attending the CCMT site at Site A were considerably higher than Site B (R16 per visit). In instances where levels of employment were low, high costs may prevent patients from keeping their appointments. There is a risk that patients who are stable and have achieved viral load suppression may perceive maintaining adherence to treatment as being of lesser importance than if the patient was AIDS sick. In contrast, the costs were less at Site B but overall levels of utilisation were lower.

4.2.2 Pathways of care

The efficacy of monitoring and follow-up is influenced by the extent to which health care providers, units and facilities work well together. This is commonly referred to as the integration of services or pathways of care. Integration of services and cooperation among health care providers to ensure adherence needs to take place at internal and external levels.

The CCMT Plan places significant emphasis upon the interface between health care professionals and multiple service delivery points interacting with patients who are registered with the CCMT Programme. These include, but are not limited to, reproductive health care services, primary health care clinics, and TB, VCT and inpatient services. While each site was able to explain the referral of patients between services, this was not always working smoothly. This is exacerbated by capacity deficits at a human resource level. In certain instances, this has resulted in the vertical implementation of key programmes.

The shortage of staff and the lack of space in Site A resulted in a situation where TB services, wellness activities and NGO support are all located outside of the CCMT service. This creates potential for the large fall-out of HIV positive patients from the CCMT Service. This is of particular concern among patients who are taking TB treatment or participating in wellness programmes at community level.

Once patients leave the CCMT service, it becomes much harder to track their health status, assess when treatment preparation should begin and when additional support is required. It also places the burden on the patient to return for care when the individual deems it necessary. In many instances, this is often when the clinical prognosis is poor and successful clinical outcomes are less likely. The fall out of patients from Site A, even if not quantified, was likely to be significant. It points to the division of responsibility between Primary Health Care services provided by local government and secondary services provided by the provincial Department of Health. This disjuncture created the potential for patients to get lost in the system with no means for follow up.

When patients remain in the same service, it is easier to ensure that health care needs are being appropriately responded to through ongoing monitoring. The split between hospital and clinic-based care is further exacerbated by the fact that patients need to be referred from clinics back to ART sites for their CD4 count and viral load, creating further time delays and affecting the seamless movement of patients between services.

There is a dual imperative to ensuring high levels of adherence to ART. There is the concern for the individual wellbeing of patients with HIV, as well as the broader public health gains to be realised when patients are able to access treatment and manage their HIV status in a way that reduces the spread of HIV and prolongs life. Keeping patients in the same service will respond to both imperatives, and will remove the obligation to pursue broader public health gains from the individual patient.

4.2.3 Role of NGOs and community organisations working with lay workers

Two categories of NGOs exist that have been influential in the roll-out of ART across South Africa. The first are NGOs with medical expertise that have championed the roll-out in first generation sites and have pioneered models of care for resource-poor settings. The second category includes organisations providing general welfare services, counselling and family support through lay workers, some of which are based in CCMT sites across the country. This study focussed specifically on the second category of NGOs. The arrangements pertaining to the training and deployment of lay counsellors and volunteers to CCMT sites created complexities in management and accountability. Both staff and lay counsellors raised concerns relating to this arrangement. These areas of difficulty were not dissimilar to the divided responsibilities and tasks between local government and the provincial Department of Health. The division of responsibility and accountability created a considerable barrier to ensuring seamless movement between

services and effective cooperation between the CCMT service and organisations. In response to the shortage of staff in scarce skills areas, both sites utilised task shifting, through the use of lay counsellors and volunteers across services to perform core support tasks. These tasks pertained to assistance in the pharmacy, conduct of adherence assessments once treatment preparation had been completed, and the provision of nutritional guidance to patients. Until reporting lines and management structures are merged, the potential to abdicate tasks and responsibilities will pose a serious threat to the delivery of comprehensive high quality care.

The lack of consistency in, and information on, the content of training provided to lay counsellors made it difficult to accurately assess levels of competence. The division of management responsibilities across multiple NGOs can also lead to large discrepancies in the quality of supervision and oversight provided to those working in public sector facilities. This is of concern when considering the multiple roles and areas of involvement of lay counsellors and volunteers. For example, counsellors in Site B moved between the ANC section, the VCT section, drug literacy and the ART service.

The absence of formal commitments and arrangements between many CBOs and NGOs who were providing services to patients within the CCMT service can compromise adherence due to the interruption of services as a result of funding delays and the absence of enforceable, specific contractual arrangements for service provision within CCMT sites. Ad hoc arrangements with NGOs make it difficult to implement and maintain basic standards for service delivery. Ongoing NGO involvement appeared in both sites to be based on organisations coming forward and offering services of their own initiative. Where contracts exist with the Departments of Health and/or Social

Development, there were accountability measures, but these often did not relate specifically to tasks and responsibilities within the CCMT service.

The 2007- 2011 National Strategic Plan speaks to the need to create career path programmes for various cadres of counsellors and volunteers working in the health care system (South African Department of Health, 2007a). Lay counsellors working in the VCT service at Site B echoed this request and the wish to have their qualifications and training recognised as complying with official unit standards. The Strategic Plan suggests that this process has begun. For it to be most beneficial, the programme needs to be expanded and accessible for such cadres of health workers.

4.3 Decision support

4.3.1 Physical infrastructure

In both sites, the allocated space for the ART service was not ideal. In particular, the waiting area could not accommodate all patients waiting to be seen. This was a greater problem in Site A due to the higher number of patients attending the clinic each day, and the congestion was seen as a consequence of the rapid growth of the programme. Without task substitution, decentralising treatment access or a significant injection of staff, it is likely that waiting lists will continue to increase and the quality of care provided to patients will decline. There were noticeable disparities in space in Site A. For example, the ANC service situated opposite the ART clinic was significantly larger in size with a far bigger waiting area.

As ART sites expand, physical infrastructure will become a problem. The shortage of space in both sites was already an issue. While both units were located in a separate area and not in full view of other services, the size of the waiting areas in both sites was a problem.

4.3.2 Drug distribution and supply

Problems with drug supply and distribution are not uncommon in ART sites and have been reported in treatment programmes in South Africa. However, neither sites in this study had any major problems with drug distribution and supply. Site A had experienced a temporary shortage of paediatric Stavudine, but had overcome the problem by dispensing a smaller dose and requesting the patient to return a week later. No patient had ever been sent away without any medication. Drugs that were not available in Site B were second line regimen drugs that were not on prescription for any patient as yet. Barriers to access existed in there being only one pharmacist in Site A and only a part-time pharmacist who was going on maternity leave in Site B. There are possibilities for task shifting to address this. The sites had put in place contingency measures to address drug shortages. It is unclear how Site B managed the dispensing of drugs with only a part-time pharmacist.

Pharmacists and dieticians are recognised as part of the scarce skills category of professional staff. Without addressing this gap through task shifting, there is a possibility that the number of patients defaulting on treatment will increase. This is also likely to increase the risk of viral resistance. Ways to address this risk need to be explored further.

4.3.3 Laboratory Capacity

Neither site had experienced any difficulty in obtaining laboratory results. The disparity in the number of patients who were interviewed with viral load results available in their files (83% in Site A and 67% in Site B) raises some cause for concern, however, it was not clear whether this points to gaps in record-keeping or the tests not having been performed. If it is the latter, this also needs to be addressed. The one barrier which existed in the execution of laboratory testing was budgetary allocations for specific tests. Ring-fenced funding for ART placed the cost of performing CD4 counts in the CCMT service at Site A. Patients who were identified or admitted needed to be referred to the clinic for such tests. The presence of a waiting list in Site A may have introduced delays.

3.4.2 Relationships with districts and the region

Though there were generally good relationships among staff within both facilities, the sites experienced some distance in their relationships with the district and the region. There was very little feedback provided on data submitted. This feeling of a lack of support may have contributed to the isolation felt by staff at facility level. Staff in Site A also reported that there had been too many changes at the facility in the last six months.

4.4 Clinical information systems

4.4.1 Data collection and management

Routine data provides an important means of evaluating site performance, identifying health needs and assessing trends in service delivery within CCMT sites. In both sites, the responsibility for collecting and collating data was shared among different staff categories.

Data collection processes and the use of data to inform practice varied considerably between sites. In Site A, there were gaps in TB statistics as it appeared that patients were being tested and treated for TB within the hospital and that this information was not being passed on to the TB Focal Point. This resulted in an under-representation of the number of patients diagnosed with TB and the number started on treatment.

The process of referring patients to NGOs for ongoing treatment support also affected the reliability of data reported. The relationship with NGOs involved in monitoring TB and HIV patients at Site A was informal. There was no indication that community organisations were submitting data to the site. When looking at the referral process within the ART service, data for drop-outs and defaulters was not reliable as the process of monitoring patients relied heavily on NGOs and information was not provided to the site on a specified, regular basis. The absence of reliable data made it difficult to establish the nature of problems within sites and to identify priority clinical outcomes that require urgent attention. The disjuncture between the process of data collection and collation also meant that staff were somewhat distanced from the data once it had been collated at a higher level. The input and use of data in Site A required further attention. Many of these inaccuracies and gaps in data had arisen as CCMT staff were over-stretched.

There appeared to be congruence between sites regarding the data items being collected and reported. It was clear that sites were following a template required at regional and provincial level. However, there was inconsistency in the definitions being applied regarding the categorization of patients as having defaulted, dropped out or transferred out of the programme. Though these three data items all provide valuable information regarding retention, the inability to distinguish between these definitions made it difficult to track areas of movement and gaps within the programme. If more detailed

information was available, it would be easier to monitor trends in the evolution of the treatment programme.

In both sites, the data is often not used and interpreted by those who collect it directly[2]. Effective data collation and monitoring of the CCMT programme is also hampered by the lack of a central authority for submission of data by researchers (Kahn, 2008).

[2] Data is often collected and collated by administrative clerks who do not play an active role in the CCMT service.

CHAPTER FIVE – RECOMMENDATIONS

This final chapter seeks to provide recommendations for intervention based on the findings of interviews with staff, SAQs and patient exit interviews. The two sites demonstrated similarities and differences in functioning when reviewed using Wagner's Chronic Care Model. This chapter will break down and propose recommendations in line with each element of the CCM.

5.1 Prepared proactive practice teams

5.1.1 Staffing allocation and task descriptions

When comparing the number and skill level of staff within each site against the Strategic Plan, it appeared that gaps in staffing and skills exist in both sites. These gaps had implications for quality of care. While increased staffing needs to be considered, it would be unrealistic to recommend further increases according to the proposed norms outlined in the CCMT Plan.

In certain categories, such as pharmacists, recruitment "ceilings" had already been reached. It may thus have been more feasible to revisit the task description for each category of health worker and to consider increased training and deployment of mid-level categories. Again using the example of pharmacists, as the programme progresses and the number of patients requiring treatment continues to increase, it is anticipated that patients with poor adherence will need to move to second-line regimen drugs. Additional support and tasks will be involved in the management of patients who require second-

line regimen drugs. It is expected that these patients would require further attention and assistance to ensure that any concerns related to side-effects are suitably dealt with by the pharmacist. This is nearly impossible when pharmacists are faced with such a high number of patients to be seen each day. Though the CCMT Plan has not assumed any decline in patient-provider contact time, the staffing needs remain under-estimated. The presence of trained pharmacy assistants could alleviate some of the pressure placed upon pharmacists by delegating tasks to be completed.

With sufficient structure and formalisation of relationships with NGOs, it is possible that specific basic tasks could be absorbed by NGOs and Community-Based Organisations (CBOs). An example of this is the use of social auxiliary workers and community development workers to do follow-up visits with patients who have not returned for treatment. Social auxiliary workers are able to work under the supervision of a social worker and, with sufficient guidance, can take over some responsibility for assessing the social circumstances of patients. This can form part of task shifting and substitution in order to cope with high patient numbers and increasing need.

5.1.2 Training and skills development

Training and skills development among staff working within the CCMT service should be made a priority when implementing interventions to improve CCMT services. This relates to training in HIV, ART and the management of TB-HIV co-infection. This is in line with the recommendations in the National Strategic Plan. There is a need to harmonise training offered to lay counsellors to ensure a common basis of training and understanding. This process should be done in collaboration with the relevant Sector Education and Training Authority (SETA). This was articulated by counsellors in both sites.

5.1.3 Workload and burn out

The nature of work within the CCMT service is emotionally demanding and can negatively affect motivation and quality of care provided to patients. The need for regular debriefing by credible, preferably independent, agencies can not be over-emphasised. This should form part of the budget for each site and not be based on the ad-hoc possibility of funding being available. The lack of emotional support may form one of the reasons that nurses are leaving the public sector. Good internal relationships between colleagues provide some emotional support but are not an adequate response to the needs expressed by staff. Nurses and doctors who head the services also experience emotional burnout. Implementing support structures through a formal contractual arrangement could assist in ensuring the long-term sustainability of this initiative.

5.2 Delivery systems design

5.2.1 Integration of services and continuity of care

This report has highlighted the importance of ensuring that there is continuity of care as patients move between services and ensuring that patients remain within the same facility. This ensures that patients are monitored on an ongoing basis and decisions about treatment can be made sooner. The creation of well-functioning Wellness Programmes is vital to ensuring this continuity of care. This is afforded priority in the National Strategic Plan. The delay in starting patients on treatment due to lack of capacity means that it is imperative that emphasis is placed upon patients maintaining good health as far as possible.

The process through which patients are managed within facilities requires consideration. The continued absorption of patients in hospital sites without down-referral to clinic level will continue to place increasing pressure upon existing sites. This is not sustainable and will compromise the quality of care available to patients. There is a need to accelerate the roll out, and accredit PHC clinics to initiate and maintain patients on ART. Historically, primary health care clinics are greater in number and are closer to communities. The high cost incurred by patients to attend the CCMT service in both sites highlights the need to prioritize and accelerate the preparation of PHC clinics for the rollout of ART and support. This will ensure that facilities can continue to absorb patients, and patients who have completed treatment preparation can begin treatment sooner. Decentralising treatment access is also likely to reduce the cost of accessing treatment for patients.

5.2.2 Managing TB/HIV co-infection

Another important component to ensuring the effective management of people with HIV/AIDS prior to starting treatment is the effective management of patients who are co-infected with TB. TB and HIV are two epidemics that have grave public health implications if they are not managed appropriately. The entry of patients into the ART service provides a valuable opportunity for simultaneous intervention. Taking TB treatment and ART simultaneously can be complex. Both can have severe side-effects and it requires taking a high number of tablets each day. This may compromise adherence among patients. While there has been a commitment to starting patients on TB treatment prior to beginning ART, there appears to be insufficient monitoring of patients within each programme. This is further exacerbated in Site A where the management of patients taking TB treatment happens at clinic level. Similarly, the protocol for encouraging TB testing for every patient with HIV needs to be afforded

greater priority. This is only likely to be effective where there are clear processes for the movement of patients between TB and ART services, and where ongoing monitoring is taking place. This requires strengthening and formalising relationships with NGOs at community level.

5.2.3 Role of NGOs and community organisations

The gaps in capacity within existing ART sites and the delay in accrediting ART sites in various areas confirms the need to strengthen service co-ordination between sites and communities. This could be done through formalising relationships with existing NGOs providing similar services at community level. This would also capitalise on existing skills and community resources. For example, NGOs providing DOTS support have experience in supporting patients taking chronic medication and are likely to have knowledge of issues affecting adherence to chronic medication. By centralizing and formalising relationships with NGOs, it will be easier to manage external service-providers and to ensure accountability by service providers.

The disjuncture between the employer, lines of accountability and the site in which lay counsellors are based has created difficulties in the delivery of ongoing high quality care. The absence of standardised training and the lack of clear roles and responsibilities has made it difficult to hold lay counsellors to account for their conduct. Roles and responsibilities differ across sites and CCMT sites are not always clear on the contents of job descriptions prepared by NGOs. Specific task descriptions need to be developed and managed by CCMT sites. This will ensure that CCMT sites can oversee the work of counsellors and take remedial action where necessary.

There is a need to review the current process of funding NGOs to deploy counsellors to health care facilities. It would seem that it may be more appropriate to fund NGOs to train counsellors in a SETA accredited course or programme, but that counsellors are contracted and employed by the site in which they work. If this is not feasible, counsellors working within the CCMT service should be affiliated to an NGO that has an ongoing established presence at CCMT sites. The gaps in staffing mean that counsellors have a valuable role to play in supporting treatment preparation, conducting follow-up visits, pill counts and providing psycho-social support. For this to be effective and sustainable there is a need to ensure continuity and ongoing service delivery. This relies upon there being clear reporting lines, management and accountability between CCMT Managers and lay counsellors.

5.3 Decision Support

The lack of the support from the Region that is felt by staff working in the ART service needs to be addressed urgently. Though support structures and reporting lines are relatively clear within each site, the absence of support and feedback from the Region is of concern. With more effective communication and support, it is likely that staff would feel less isolated in coping with a heavy workload and emotional stress.

The lack of training in key areas may also influence the application of protocols and guidelines. Improved training and greater coverage of staff in the service is likely to improve the use of guidelines and protocols. It is important to record that this was not identified as a weak point during the study, but it is likely there is scope for improvement.

5.4 Clinical information systems

5.4.1 Monitoring & Evaluation processes

The lack of consistency in the application of indicators when collecting routine data has severe implications for the validity of data items collected within sites. It appears that sites are not monitoring the number of patients who have fallen out of the ART programme. This is observed in the lack of differentiation between transfer and loss to follow up. The lack of clarity on the application of such indicators may point to the need for further training and, or, the need for clerical staff to understand the importance of collecting valid data.

It appeared that death data was not always reported to ART sites due to the lack of volunteers affiliated to community organisations and working in cooperation with CCMT sites. Instances were reported where patients had died but the facility did not know, and the patient was recorded as lost to follow up. This indicator tends to become an all-encompassing category used to record any data pertaining to patients who have not returned to the site. While this provides a crude analysis of site-level functioning, it is imperative that this is disaggregated accurately and distinguishes between deaths, transfers out and patients who are lost to follow-up.

5.4.2 Data collection and reporting processes

The second area of concern relating to clinical information systems is the process by which data is collected and reported. It is unclear how data is recorded or adjusted where a patient has not arrived for their appointment on an allocated day, but does attend the clinic on a different day. Where data is collected and recorded daily, the number of patients who have missed appointments is recorded on a daily basis. It is not clear if or

how this data is adjusted for patients who arrived on another day and are not lost to follow up.

The process of data collection relating to the TB and ART services in sites where high numbers of patients are taking TB treatment and ART simultaneously must be afforded priority in improving adherence among patients taking ART. This highlights the importance of ensuring that data is interpreted and made available to sites. The process of monitoring and evaluating treatment programmes needs to be seen as a priority focus area, and not merely as a last end activity that is of lesser importance to other staff duties. For as long as this message comes from a regional level, it will continue to be perceived as an instruction that brings more work, with no understanding of the value of accurate data and the important role it can play in improving quality of care provided to patients, with subsequent gains in increasing levels of adherence among patients taking ART.

If not enough emphasis is placed upon the importance of collecting accurate data, it will be difficult to thoroughly evaluate and assess the overall functioning of the CCMT programme nationally. As the number of patients who are co-infected with TB and HIV continues to increase, there needs to be greater collaboration and ongoing monitoring in place between sites. This is of great importance when the division of responsibilities remains split between local and provincial government. It is also possible that patients who are defaulting on TB treatment may also be defaulting on ART and vice versa. One consistent community-based monitoring mechanism and the management of patients at PHC level could address these two concerns simultaneously.

REFERENCES

ART-CC (2006). HIV treatment response and prognosis in Europe and North America in the first decade of HAART: a collaborative analysis. *The Lancet,* **368:** 451-458.

ART-LINC Collaboration and ART-CC (2006). Mortality of HIV-1 infected patients in the first year of Anti Retroviral therapy: a comparison between low-income and high-income countries. *The Lancet,* **367:** 817-824.

Bekker, L., Myer, L., Orrell, C., Lawn, S., Wood, R. (2006). Rapid scale-up of a community-based HIV treatment service. *SAMJ,* 96 **(4):** 315-320.

Bodibe, K. (2006, 26 September). Battlefield of the 21st century. *The Mail & Guardian.* http://www.health-e.org.za/news/article.php?uid=20031898 (Last accessed 28 September 2006).

Boulle, A., Coetzee, D. (2006). Anticipating future challenges to ART provision in South Africa: reflections on the Khayelitsha Programme. *Acta Academica Supplementum,* **(1)** 241-255.

Dalal, R.P., MacPhail, C., Mqhayi, M., Wing, J., Feldman, C., Chersich, M., Venter, W.F. (2008). Characteristics and Outcomes of Adult Patients Lost to Follow-Up at an Anti Retroviral Treatment Clinic in Johannesburg, South Africa. *JAIDS,* **47**: 101-107.

Day, C., Gray, A. (2007) Health and related indicators in South African Health Review. *Health Systems Trust.* p235-239.

Dorrington, R., Johnson, L., Bradshaw, D., Daniel, T (2006). The demographic impact of HIV/AIDS in South Africa, National and Provincial Indicators for 2006. *Centre for Actuarial Research.*

Ekurhuleni Metropolitan Municipality (2008). http://www.ekurhuleni.com/ekurhuleni/Doing-Bus-ek-profile-final.jsp#link5 (Last accessed 25 May 2008).

Epping-Jordan, J.; Pruitt, S., Bingo, R., Wagner, E. (2004). Improving the quality of health care for chronic conditions *Quality and Safety in Health Care,* **13**: 299-305.

Ford, N., Reuter, H., Bedelu, M., Schneider, H., Reuter, H. (December 2006). Sustainability of long-term treatment in a rural district: The Lusikisiki Model of Decentralised HIV/AIDS Care. *Southern African Journal of HIV Medicine*, 17-22.

Healthlink Worldwide (2006). Treatment Literacy: empowering communities to access AIDS treatment. *Healthlink Worldwide,* **(6)**: 1-8.

Hirschhorn, L., Oguda,L., Fullem, A., Dreesch, N., Wilson, P. (2006). Estimating health workforce needs for antiretroviral therapy in resource-limited settings. *Human Resources for Health,* **4**:1. http://www.human-resources-health.com/content/4/1/1 (Last accessed 15 October 2006).

Kahn, T (2008, 25 February). Aspen queries HIV treatment numbers. *The Business Day.*

Lewis, R., Dixon, J. (2004). Rethinking management of chronic diseases. *British Medical Journal,* **328**:220-22 (24 January).

McCoy, D., Chopra, M. Loewenson, R., Aitken, J.M., Ngulube, T., Muula, A., Ray, S., Kureyi, T., Ijumba, P., Rowson, M. (2005). Expanding Access to Anti Retroviral Therapy in Southern Africa, Avoiding the Pitfalls and Dangers, Capitalising on the Opportunities. *American Journal of Public Health,* **95 (1)**: 18-22.

Murphy, D., Marelich, W., Hoffman, D., Steers, W. (2004). Predictors of antiretroviral adherence. *AIDS Care,* 16 **(4)**: 471-484.

Vogel, U., Nemes., M., Beaudoin, J., Kiumbi, G., Skjelmerud, A.(2006). Evaluation of WHO's contribution to "3 by 5". *World Health Organisation.*

Paterson, D.L., Swindells, S., Mohr, J., Brester, M., Vergels, E., Squler C., Wagener, M., Singh, N. (2002). Adherence to Protease Inhibitor Therapy and Outcomes in Patients with HIV Infection. *Ann Intern Med*, **133**: 21-30.

Piot, P. (2006). AIDS: From crisis management to sustained strategic response. *The Lancet*, **368:** 526-530.

Rabkin, M., El-Sadr, W., Abrahams, E. (2003) MTCT-Plus Clinical Manual, Mailman School of Public Health. Columbia University, New York.

Rosen, S., Fox, M., Gill, C. (2007). Patient Retention in Anti Retroviral Therapy Programmes in Sub-Saharan Africa: A Systematic Review. *PLoS Medicine,* **4 (10) e298:** 1691-1701.

Rothman, A., Wagner, E. (2003). Chronic Illness Management: What Is the Role of Primary Care? *Annals Internal Medicine*, **138**: 256-261.

Severe, D., Leger, P., Charles, M., Noel, F., Bonhomme, G., Bois, G., George, E., Kenel-Pierre, S., Wright, P., Gulick, R.., Johnson, W., Pape, J., Fitzgerald, D. (2005). Anti Retroviral therapy in 1000 patients in Haiti. *New England Journal of Medicine,* **353 (22):** 2325-2334.

Schneider, H., Naidoo, N., Ngoma, B., Goudge, J., Williams, E., Pursell, R., Nyatela, H., Lubwama, J. (2008). Performance and capacity of second generation Comprehensive Care Management and Treatment (CCMT) sites in Gauteng Province. *Centre for Health Policy.*

South African Department of Health (2003). Operational Plan for Comprehensive Care, Management and Treatment for South Africa. *Department of Health.*

South African Department of Health. (2004). Monitoring Review- Progress Report on the Implementation of the Comprehensive HIV and AIDS Care, Management and Treatment Programme. http://www.doh.gov.za Issue 1, September 2004.

South African Department of Health. (2004a). Monitoring and Evaluation Framework for the Comprehensive HIV/AIDS Care, Management and Treatment Programme for South Africa. http://www.doh.gov.za (Last accessed on 15 August 2007).

South African Department of Health. (2006). Cumulative Statistics for Adults and Children in Comprehensive Care, Management and Treatment as on 31.10.2006. http://www.doh.gov.za/docs/statistics-f.html (Last accessed 2 March 2008).

South African Department of Health. (2007). National HIV and Syphilis Prevalence Survey 2006. *Department of Health.*

South African Department of Health. (2007a). National Strategic Plan 2007-2011.*Department of Health.*

South African Treasury (2007). Provincial Budgets and Expenditure Review: 2003/04 - 2009/10. Ministry of Finance, South African Government.

Statistics South Africa (2003) Census 2001. *Statistics South Africa.*

Statistics South Africa. (2007). Community Survey. *Statistics South Africa.*

Steyn, F., Van Rensburg, D., Engelbrecht, M. (2006). Human Resources for ART in the Free State public health sector: recording achievements, identifying challenges. *Acta Academica Supplementum,* **(1)** 94-139.

UNAIDS (2007). AIDS Epidemic Update. *Joint United Nations HIV/AIDS Programme and World Health Organisation.*

World Health Organisation. (2002). Innovative Care for Chronic Conditions: Building Blocks for Action. *World Health Organisation.*

World Health Organisation. (2007). Treat, Train, Retain. Task Shifting: Global Recommendations and Guidelines. *PEPFAR and UNAIDS*.

ANNEXURES

University of Witwatersrand
School of Public Health
Faculty of Health Sciences

Information Sheet – Facility Manager

Organisational capacity affecting patient adherence to Anti Retrovirals in Gauteng Province

Good Day,

We are two Masters in Public Health (MPH) students at the University of the Witwatersrand. One of us (Rebecca) is a social worker by training and the other (Nicolette) previously studied anatomy. As part of our MPH course we are participating in a collaborative research project between the Centre for Health Policy (CHP) in the School of Public Health and the Gauteng Department of Health (GDOH). CHP and GDOH have cooperated on a number of HIV/AIDS projects in recent years. The theme of the current research project is adherence to Anti Retrovirals. Specifically, we are tasked with investigating the facility factors (for instance, presence of lay counsellors) that promote adherence in patients, which we refer to as "organisational capacity". Another team of students will be doing research on the patient side of adherence. Once completed, the two studies will be combined in one report for Gauteng Province in which we hope to make recommendations for the strengthening adherence in treatment sites. We would be most grateful if you could help in this research by providing information on these factors that relate to Anti Retroviral adherence in patients.

Why we would like to interview you

Your facility is one of four ARV treatment sites (two CHCs and two hospitals) in Regions A and B that were randomly selected for the project. As the manager of the facility we would like to interview you. The purpose of the interview with you is to obtain a general understanding of the facility in which the ARV site is located, such as the staff and resources in the facility as a whole, and how you see the link between the ARV programme and the rest of the facility.

What can I expect and what will be expected of me?

One of us will interview you and take notes using a semi-structured questionnaire. We will also ask your assistance in gathering information on aspects such as staffing, drug supplies and facility statistics. The interview will take about one hour or so to complete. Your views will be combined with those of other Facility Managers and neither your name nor that of the facility will feature in the report.

Are there benefits or risks to the participants?

There are no physical risks to the participant. The knowledge obtained from the interview or any additional information obtained from registers and routine data will only be known to the researcher. This information will not reflect peoples names or patient numbers and will only show case numbers via a coding system. By participating you will help us understand the challenges facing managers in implementing a major new programme.

Can I withdraw from this study?

You can at any point in time withdraw from the study. This is a voluntary study and there will be no negative consequences should you choose not to participate or to withdraw.

Confidentiality

All information that is obtained in this study will be kept confidential. Please note that to ensure that this is maintained, interview schedules will be coded and will only indicate the date of the interview and the facility code. Your participation will remain anonymous. Information pertaining to interview schedules will be kept in a separate file from the rest of the report, under lock and key in a safe place by the researcher.

Should you have any questions concerning this study, please contact us:

Nicolette Naidoo Tel: 082 490 1214 Email: nickynaidoo@gmail.com
Rebecca Pursell Tel: 082 828 7387 Email: mwrebecc@mweb.co.za

Our supervisor is Professor Helen Schneider and she is contactable on: Tel: 011-242 9905 Email: helen.schneider@nhls.ac.za

Sincerely, **Nicolette Prea Naidoo** **Rebecca Pursell**

Consent Form for Facility Manager

Organisational capacity affecting patient adherence to ARVs in Gauteng Province

Do you understand the purpose of the study, and what will be required of you if you agree to participate? Yes/No

Have all your questions been answered? Yes/No

If no, what further questions do you wish to ask?

Do you understand that you are not obliged to agree to participate in this study? Yes/No

Do you understand that your decision to participate or not participate will not affect your job security in any way? Yes/No

If answers to all above are yes

Do you agree to be interviewed for the project Yes/No

Signature of Respondent (If yes) _____

Names and contact details of investigators:

Nicolette Prea Naidoo
Tel: 082 490 1214
Email: nickynaidoo@gmail.com

Rebecca Pursell
Tel: 082 828 7387
Email: mwrebecc@mweb.co.za

Organisational capacity affecting patient adherence to ARVs in Gauteng Province

Facility Manager Interview Schedule

Interview details

1.1 Interview schedule No: _____

1.2 Interviewer: _____

1.3 Date of interview: _____

1.4 Facility code: _____

1.5 Data capturing: Date: By:

_____

2. Clinic profile and staffing

2.1 Could you tell me what services are provided at this outpatients department/clinic?

(*Fill in the table and prompt for remainder once finished*)

Service	**Provided (Y/N)**	**Days/Hours of operation**
Curative care (minor ailments)		
Antenatal		
Maternity		
PMTCT		
Child health/immunisation		
Family planning		
TB diagnosis		
TB treatment		
Chronic disease care		
VCT		
Home based care		
Post sexual assault services		
Other		
Other		

2.2 Can you tell me when each of these services are available? (*fill in second column*)

2.3 I'd now like to ask you to draw me an organogram of the facility, showing me the structure of services and the reporting lines *(Show example of an organogram; draw on the next page)*

Probe: if there are services which do not report to her/him what are their reporting lines? (draw a second diagramme if necessary)

2.4 Who do you report to? _____

Facility Organogram

2.5 Can you tell me what staff you have available in this clinic/OPD?

Category	Full-time	Part-time	Unfilled posts	Left in last year	Joined in last year
Doctors					
Professional nurses					
Enroled nurses					
Enroled nursing assistants					
Health promoters					
Dietician					
Social worker					
Psychologist/ Counsellor					
Clerical staff					
Cleaning staff					
Other					
Other					

2.6 Do you have any unfilled posts in this clinic? (*fill in number next to category in table*)
2.7 In the last year, since ____ (*month*) have any staff left? (*ditto*)
2.8 In the last year, since ____ (*month*) have you recruited any new staff (*ditto*)

2.9 Please describe to me how the nursing staff are allocated to activities, in other words, who does what, in this clinic/OPD?

Probe overlapping functions; rotations

2.7 Are there volunteers, lay workers or other kinds of community workers linked to this OPD/Clinic? Yes/No

2.8 If yes, could you list the types of volunteers used and the tasks that they perform?

Categories of Volunteers	Tasks	Remuneration

2.9 Are any of these workers remunerated? *(fill in the table – amount or N)*

2.10 Do you know your current daily clinical nurse workload in this clinic/OPD, in other words, on average how many patients do your primary health care nurses see on a daily basis?

_____ patients

2.11 Do you know how many patients you currently see in total in this OPD/clinic, on a:

Daily basis? _____ patients

Weekly basis? _____ patients

3 Drug supplies

3.1 Who manages the drug supply in this facility?

Pharmacist	
Pharmacy assistant	
Professional nurses	
Other (*state*)	

3.2 How would describe the drug supply in this facility? (*prompt a choice by reading out options*)

Almost never or never run out of essential drugs	
Sometimes run out of essential items	
Regularly run out of essential items	
Almost always out of some essential items	

Comments on drug supply

3.3 Ask if you can check availability of the list of drugs at the end of the questionnaire and who to go to for this (e.g. person working in pharmacy)

4 Laboratory Capacity

4.1 Are any of the following tests available on site at your facility?

Syphilis (rapid RPR)	Y	N
Pregnancy test	Y	N
Haemoglobin	Y	N
HIV rapid test	Y	N

4.2 Are you able to order the following tests (*if yes, ask turnaround times*)?

HIV (ELISA)	Y	N	Turn around time for results
CD4 count	Y	N	
Viral load	Y	N	
PCR	Y	N	
Sputum AFBs	Y	N	
Full blood count	Y	N	
Liver enzymes	Y	N	
Electrolytes	Y	N	

Comments on laboratory service

---

5 Referral systems

5.1 Where do you refer patients who need hospitalisation? (*relevant for clinic only*)

Name of facility

5.2 How are patients transported to hospital? *(relevant to clinic only)*

By ambulance if acutely ill	
Hospital/clinic taxi service	
Patients have to arrange their own transport	
Other (*state)*	

5.3 Where do you refer patients who need TB care? (*if not provided on site*)

Name of facility

5.4 *If refer TB cases,* do you (*read out each question*):

Know the name of the person in charge of the TB service where you refer patients?	Y	N
Ever discuss the management of individual patients with staff in the TB service?	Y	N
Send patients with referral letters to the TB service?	Y	N
Receive information back from the TB service on your patients you referred?	Y	N
Provide transport for patients to get to the TB service?	Y	N

Comments on referral system

5.5 Do you run any support groups from this OPD/clinic? Yes/No
If yes, Can you list these support groups for me *(prompt for target group if not obvious)?*

Type of support group	**Target group**

5.6 Do you have any relationships with NGOs in this area? Yes/No
If yes, Can you tell me about these and what your relationship is with them?

Name of NGO	**Nature of relationship**

6 Information Systems

6.1 I'd like to know now about the collection of statistics in this OPD/clinic. Can you describe to me how the system of collecting statistics in this clinic works?

Write verbatim response

6.2 Do you have any computers in this OPD/clinic? Yes/No

If yes, how many? _____

Which services do they cover? _____

6.3 Do you know, more-or-less, the following statistics for your clinic/OPD?

Number of suspected TB cases in the last month?	
% of patients on ARVs who have dropped out?	
% pregnant women tested for HIV?	
Number of HIV tests conducted?	

7 Supervision

Apart from yourself, are there any other people who provide support and supervision to the OPD/clinic? Yes/No

If yes, please tell me about these people

Source of supervision	**Who they supervise**

8 Integration

I'd now like to ask your opinion of HIV/AIDS services in this clinic:

8.1 In your opinion what are the strengths of the HIV/AIDS-related services in this OPD/clinic?

_____

_____

_____

8.2 In your opinion what are the areas of the HIV/AIDS-related services that are weak or that require attention in this OPD/clinic?

_____

_____

_____

8.3 Which best describes the HIV/AIDS activities in this facility *(read out and ask to choose one)?*

A series of vertical activities completely separate from each other	
A series of activities partially coordinated with each other	
A well integrated set of activities	
A well integrated set of activities that is also well integrated into the activities of the clinic/OPD as a whole	

9 General

9.1 Is there anything else that you would like to say about the facility and health care services provided?

9.2 Do you have any questions you would like to ask me?

THANK YOU, THE INTERVIEW IS OVER

Ask for assistance in doing the inventory of drug supplies, consulting the routine data and indicate that you are going to be drawing a map of the area

Map of the facility (including waiting areas)

Check-list of drug supply *(to be collected in dispensary)*

General drugs and supplies			Anti Retrovirals		
Sharps disposal containers	Y	N	Stavudine caps 30mg (Stavir/d4T)	Y	N
Condoms	Y	N	Stavudine caps 40mg (Stavir/d4T)	Y	N
Ciprofloxacin tablets	Y	N	Stavudine solution1mg/ml (Stavir/d4T)	Y	N
Flagyl (Metronidazole) 400mg	Y	N	Lamivudine tabs 150mg (3TC)	Y	N
Erythromycin 250mg tabs	Y	N	Lamivudine solution 10mg (3TC)	Y	N
Doxycycline 100mg tabs	Y	N	Efavirenz caps 200mg (Stocrin /EFV)	Y	N
Latex gloves	Y	N	Efavirenz caps 50mg (Stocrin /EFV)	Y	N
Rapid HIV/AIDS testing kits	Y	N	Efavirenz tabs 600mg (Stocrin /EFV)	Y	N
Purple topped blood specimen containers	Y	N	Didanosine tabs 200mg (Videx/ddI)	Y	N
Nevirapine tablets 200mg	Y	N	Didanosine tabs 100mg (Videx/ddI)	Y	N
Nevirapine suspension 50mg/5ml	Y	N	Didanosine tabs 50mg (Videx/ddI)	Y	N
Nystatin	Y	N	Zidovudine tabs 300mg (Retrovir/AZT)	Y	N
Analgesia (paracetamol)	Y	N	Zidovudine syrup 50mg/5ml (Retrovir/AZT)	Y	N
Cotrimoxazole (Bactrim) syrup	Y	N	Lopinavir/Ritonavir caps 133/33mg (Kaletra)	Y	N
Cotrimoxazole (Bactrim) tablets	Y	N	Lopinavir/Ritonavir suspension 80/20mg/ml (Kaletra)	Y	N
Acyclovir 800mg	Y	N	Ritonavir suspension 80mg/ml (Norvir)	Y	N
Amitryptaline	Y	N	Ritonavir caps 100mg (Norvir)	Y	N
Hydrocortisone cream	Y	N	Abacavir tabs 300mg	Y	N
Loperamide 2mg	Y	N	Abacavir solution 20mg/ml	Y	N
Sputum containers	Y	N			

Routine data

From the routine information system record the following data elements for the **previous** six months

Indicate which 6-month period you have recorded data: _____

Indicator	Mnth 1	Mnth 2	Mnth 3	Mnth 4	Mnth 5	Mnth 6
Total head count						
Nurse clinical workload						
Absenteeism rate professional nurses						
Number of HIV tests (excluding antenatal)						
Number of HIV tests in antenatal clinic						
Number of first antenatal visits						
Total number of TB sputum sent						
Number of CD4 counts requested						
Number of PCR requested						
Number of viral loads requested						
Number of liver tests requested						
Total seen for ART – adults						
Total registered on ART- adults						
Deaths on ART						
Transfer out on ART						

Interviewer Notes *(after the site visit on the same day record critical incidents, observations and general impressions)*

University of the Witwatersrand
School of Public Health
Faculty of Health Sciences

Information Sheet – Comprehensive Care Management and Treatment (CCMT) Manager
Organisational capacity affecting patient adherence to Anti Retrovirals in Gauteng Province

Good Day,
We are two Masters in Public Health (MPH) students at the University of the Witwatersrand. One of us (Rebecca) is a social worker by training and the other (Nicolette) previously studied anatomy. As part of our MPH course we are participating in a collaborative research project between the Centre for Health Policy (CHP) in the School of Public Health and the Gauteng Department of Health (GDOH). CHP and GDOH have collaborated on a number of HIV/AIDS projects in recent years. The theme of the current research is adherence to Anti Retrovirals. Our interest is specifically in the facility factors (for example, presence of lay counsellors) that promote adherence in patients, which we refer to as "organisational capacity". Another team of students will be doing research on the patient side of adherence. Once completed, the two of studies will be combined in one report for Gauteng Province in which we hope to make recommendations for the strengthening adherence in treatment sites. We would be most grateful if you could help in this research by providing information on these factors that relate to Anti Retroviral adherence in patients.

Why we would like to interview you
Your facility is one of four ARV treatment sites (two CHCs and two hospitals) in Regions A and B that were randomly selected for the project. As the person responsible for the ARV programme in this facility we would like to interview you. The purpose of the research is to obtain a detailed understanding of the CCMT programme within this facility. This will include aspects such as staffing and resources within the programme, and how you see the link between the ARV programme and the rest of the facility.

What can I expect and what will be expected of me?
One of us will interview you and take notes using a semi-structured questionnaire. We will also ask your assistance in gathering information from registers. The interview will take about one hour or so to complete. Your views will be combined with those of other staff interviewed and neither your name nor that of the facility will feature in the report.

Are there benefits or risks to the participants?
There are no physical risks to the participant. The knowledge obtained from the interview or any additional information obtained from registers and routine data will only be known to the researcher. This information will not reflect peoples names or patient numbers and will only show case numbers via a coding system. By participating you will help us understand the challenges facing managers in implementing a major new programme.

Can I withdraw from this study?
You can at any point in time withdraw from the study. This is a voluntary study and there will be no negative consequences should you choose not to participate or to withdraw.

Confidentiality
All information that is obtained in this study will be kept confidential. Please note that to ensure that this is maintained, interview schedules will be coded and will only indicate the date of the interview and the facility code. Your participation will remain anonymous. Information pertaining to interview schedules will be kept in a separate file from the rest of the report, under lock and key in a safe place by the researcher.

Should you have any questions concerning this study, please contact us:
Nicolette Naidoo Tel: 082 490 11214 Email: nickynaidoo@gmail.com
Rebecca Pursell Tel: 082 828 7387 Email: mwrebecc@mweb.co.za
Our supervisor is Professor Helen Schneider and she is contactable on:
Tel: 011-242 9905 Email: helen.schneider@nhls.ac.za
Sincerely, **Nicolette Prea Naidoo** **Rebecca Pursell**

Consent Form for CCMT Manager

Organisational capacity affecting patient adherence to ARVs in Gauteng Province

Do you understand the purpose of the study, and what will be required of you if you agree to participate? Yes/No

Have all your questions been answered? Yes/No

If no, what further questions do you wish to ask?

Do you understand that you are not obliged to agree to participate in this study? Yes/No

Do you understand that your decision to participate or not participate will not affect your job security in any way? Yes/No

If answers to all above are yes

Do you agree to be interviewed for the project Yes/No

Signature of Respondent (If yes) _____

Names and contact details of investigators:

Nicolette Prea Naidoo
Tel: 082 490 1214
Email: nickynaidoo@gmail.com

Rebecca Pursell
Tel: 082 828 7387
Email: mwrebecc@mweb.co.za

Organisational capacity affecting patient adherence to ARVs in Gauteng Province
CCMT (ART) Provider Interview Schedule

1 Interview Details

1.1 Interview schedule No: _____

1.2 Interviewer: _____

1.3 Date of interview: _____

1.4 Facility code _____

1.5 Data capturing: Date: _____ By _____

_____

2 Department Profile

2.1 On which days and during which times does the ART unit provide services to the public?

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Hours of operation							

2.2 When did the service open for the first time? _____month_____year

2.3 When did you start providing ART? _____month _____year

2.4 Since starting the service, how many patients …

have you started on ART?	Number or don't know
are still on ART in this service?	
on ART are children (<14 years)	
started treatment during pregnancy?	
are on the waiting list to start ART (cd4<200)?	
are still in the wellness programme (cd4>200)?	
are still waiting to be assessed (no cd4 count done)?	

2.4 On average, how many patients does the unit see in one day?

2.5 I'd now like to ask you to draw me an organogram of the unit, showing me the structure of services and the reporting lines *(Show example of an organogram; draw on the bottom of the page)*

Probe: if there are services which do not report to her/him what are their reporting lines? (draw a second diagramme if necessary)

Unit Organogram diagram

3 Staffing

3.1 Please tell me about the staffing for the ART service

Category	Full-time	Part-time	Unfilled posts	Left in last year	Joined in last year
Doctors					
Professional nurses					
Enroled nurses					
Enroled nursing assistants					
Lay counsellors					
Volunteers					
Dietician					
Social worker					
Psychologist					
Clerical staff					
Cleaning staff					
Other					
Other					

Do you have any unfilled posts in this unit? (*fill in number next to category in table*)
In the last year, since ____ (*month*) have any staff left the unit? (*ditto*)
In the last year, since ____ (*month*) have you recruited any new staff to the unit? (*ditto*)

3.2 In a typical day, what are your duties?

Probe overlapping functions, rotations-

_____

_____

_____

_____

3.3 What training have the staff received in this unit on HIV/ART?

Category	No trained	Type of training
Doctors		
Nurses		
Lay counsellors/volunteers		
Clerical		
Other		
Other		

4. Information Systems

I'd now like you to ask questions about the record keeping system in your unit *(fill in the table)*

4.1 Can you show me an example of a patient record at this clinic?
Are there any standard forms in this record?
Who designed this record?

4.6 Is patient information recorded anywhere else? If yes, where?

4.6 Do you keep any special registers at the clinic?

	Description	Specific to ART service	Paper or electronic	Local, provincial or national design
Standardised patient records				
Registers and record books				
Reporting forms				

4.6 How do you track the follow-up of patients in this unit? (*alternatively* how do you track defaulters from the service?)

4.5 What information (statistics, reports) do you send to the clinic/OPD, district, province and national authorities? *(get copies of forms)*

Form/report	To	Via	Frequency

4.6 How do you assess whether your service/unit is performing adequately or not? (fill in table and *probe if necessary)*

Analyse own data locally	If yes, indicate frequency
Get verbal feedback district or province	
Get written reports from district or province	
Get verbal feedback from national	
Get written feedback from national	

5. Treatment preparation, adherence and support

5.1 I'd now like to ask you about how you manage treatment preparation and adherence

Step/procedure	Description
Describe the steps (verbal or written) or procedures involved in preparing people for ART	
Describe how you ensure that patients remain on (adhere to) treatment?	
How do you monitor adherence in individual patients?	

5.2 Does treatment preparation and support involve any of the following (*if not already mentioned*):

Treatment preparation	
Individual counseling/briefing	Y/N / DK
Group education	
Nomination of treatment supporter/buddy	
Home visit	
Knowledge questionnaire	
Consent forms or patient contract	
Written information/pamphlets	
Treatment support	
Follow-up appointments	
Pill boxes	
Tick sheets	
Adherence assessment	
Self reported adherence (3 or 4 day recall)	
Pill count	
Viral load monitoring	
Return for follow-up	

6 Pathways of care and referral

I am going to ask you now to take me through what happens to a person before they arrive at this service and the various referral services at this clinic.

6.1 A person attending a clinic or the OPD is suspected of having HIV infection or requests an HIV test …

Where do they receive VCT?	
Where do they go after that? (cd4 counts etc.)	
If their cd4 count is >200 what happens to them?	
If they are pregnant where do they go?	
When are patients referred to this service?	
Where do most of your patients come from? (e.g. referred after admission, from general OPD, ANC, TB, VCT)	

6.2 Where do you refer your patients who need TB care? (*if not provided on site*)

Name of facility

If refer TB cases, do you (*read out each question*):

Know the name of the person in charge of the TB service where you refer patients?	Y	N
Ever discuss the management of individual patients with staff in the TB service?	Y	N
Send patients with referral letters to the TB service?	Y	N
Receive information back from the TB service on your patients you referred?	Y	N
Provide transport for patients to get to the TB service?	Y	N

6.3 How would you describe your relationships with the following services:

	Good	Fair	Poor
VCT			
TB			
PMTCT/antenatal			
In-patient departments			
General outpatient			

6.4 Do you run any support groups from this unit? Yes/No

If yes, Can you list these support groups for me *(prompt for target group if not obvious)?*

Type of support group	**Target group (youth, women etc.)**

6.5 Do you have any relationships with NGOs in this area? Yes/No

If yes, Can you tell me about these and what your relationship is with them?

Name of NGO	**Nature of relationship**

6.6 Where do you refer patients who need hospitalisation? (*relevant for clinic only*)

Name of facility _____

7 Support Systems

7.1 Can you describe to me who provides support and supervision to this service (*position of person)?*

	Inside facility	**Frequency**	**Outside facility**	**Frequency**
General supervision (e.g. promotion, absenteeism)				
Supervision of programme activities (ARV/CCMT)				
Clinical support				

8. Supplies and infrastructure

8.1 Who manages the drug supply for this service?

Dedicated pharmacist for service	
By facility pharmacist	
Other (no pharmacist)	

8.2 Where are the drugs stored?

Separately from other facility drug supplies	
With other drug supplies	

8.3 Has the unit experienced stock out of ARV drugs in the past 6 months? Yes/No

If yes, how many times did this occur? _____

8.4 Comments on drug supply

---

9 Laboratory Capacity

9.1 What laboratory tests are offered at the ART clinic?

HIV (ELISA)	Y	N	On or off-site	Turn around time if off-site
CD4 count	Y	N		
Viral load	Y	N		
PCR	Y	N		
Sputum AFBs	Y	N		
Full blood count	Y	N		
Liver enzymes	Y	N		
Electrolytes	Y	N		

10 Policy, Protocols and Standard Treatment Guidelines

10.1 W hat written guidelines do you have available in the ART/CCMT service?
(Take note of guidelines posted on the walls when doing the walkabout)

Essential drug list and standard treatment guidelines for South African Primary Health Care services	*Y*	*N*
Feeding of infants of HIV positive mothers		
Prevention and treatment of opportunistic and HIV related diseases in adults		
Prevention of mother-to-child HIV transmission and management of HIV positive pregnant women		
Managing HIV in children		
VCT protocol/manual/booklet		
Tuberculosis (TB) and HIV/AIDS		
Protocol for management of a person with a STI (1998 or 1999 or more recent)		
HIV strategic plan for South Africa 2000-2005		
National guideline on home-based care and community based care		
Protocol/guidelines for PMTCT		
Management of occupational exposure to HIV (PEP guidelines)/Protocol for needle-stick injury		
The South African TB Control Programme Practical Guidelines 2000 (or more recent)		
Flow charts on TB diagnosis – New patients (blue) (either in TB control guidelines book or on a clinic/CHC wall, nurse should show it to you)		

11 Integration

I'd now like to ask your general opinion of HIV/AIDS services in this clinic:

11.1 In your opinion what are the strengths of the HIV/AIDS-related services in this OPD/CHC?

_____

_____

_____

11.2 In your opinion what are the areas of the HIV/AIDS-related services that are weak or that require attention in this OPD/CHC?

_____

_____

_____

11.3 Which best describes the HIV/AIDS activities in this facility (*read out and ask to choose one)?*

A series of vertical activities completely separate from each other	
A series of activities partially coordinated with each other	
A well integrated set of activities	
A well integrated set of activities that is also well integrated into the activities of the clinic/OPD as a whole	

12 General

Is there anything else that you would like to add about the ART programme at your unit?

Response/Comments:

_____

_____

_____

_____

_____

_____

Do you have any questions that you would like to ask me?

_____

THANK YOU, THE INTERVIEW IS OVER.

Interviewer Notes *(after the site visit on the same day record critical incidents, observations and general impressions)*

_____

Map of the facility *(including waiting areas, and indicating functions of various rooms – counselling, treatment, record keeping etc.)*

Drugs kept in lockable space	Y/N
Records kept in locked space/cabinet	
Visual privacy of: • counselling • consulting rooms	
Auditory privacy of: • Counselling • Consulting rooms	

Routine data ***(if not already obtained)***

From the routine information system record the following data elements for the prior six months

Indicate which 6-month period you have recorded data: _____

Indicator	**Mnth 1**	**Mnth 2**	**Mnth 3**	**Mnth 4**	**Mnth 5**	**Mnth 6**
Number of CD4 counts requested						
Number of PCR requested						
Number of viral loads requested						
Number of liver tests requested						
Total seen for ART – adults						
Total registered on ART- adults						
Deaths on ART						
Transfer out on ART						

University of Witwatersrand
School of Public Health
Faculty of Health Sciences

Information Sheet – Manager of Tuberculosis Clinic / Unit
Organisational capacity affecting patient adherence to Anti Retrovirals in Gauteng Province

Good Day,
We are two Masters in Public Health (MPH) students at the University of the Witwatersrand. One of us (Rebecca) is a social worker by training and the other (Nicolette) previously studied anatomy. As part of our MPH course we are participating in a collaborative research project between the Centre for Health Policy (CHP) in the School of Public Health and the Gauteng Department of Health (GDOH). CHP and GDOH have collaborated on a number of HIV/AIDS projects in recent years. The theme of the current research is adherence to Anti Retroviral treatment. Our interest is specifically in the facility factors (for example, presence of lay counsellors) that promote adherence in patients, which we refer to as "organisational capacity". Another team of students will be doing research on the patient side of adherence. Once completed, the two of studies will be combined in one report for Gauteng Province in which we hope to make recommendations for the strengthening adherence in treatment sites. We would be most grateful if you could help in this research by providing information on these factors that relate to Anti Retroviral adherence in patients.

Why we would like to interview you
Your facility is one of four ARV treatment sites (two CHCs and two hospitals) in Regions A and B that were randomly selected for the project. As the manger of the TB service, we would like to interview you. The purpose of the interview with you is to obtain a general understanding of the service you provide and how you see the link between the ART and TB programmes.

What can I expect and what will be expected of me?
One of us will interview you and take notes using a semi-structured questionnaire. We will also ask your assistance in gathering information on aspects such as staffing and facility statistics. The interview will take about one hour or so to complete. All the findings of the study will be anonymous. Your views will be combined with those of other Facility Managers and neither your name nor that of the facility will feature in the report.

Are there benefits or risks to the participants?
There are no physical risks to the participant. The knowledge obtained from the interview or any additional information obtained from registers will only be known to the researcher. This information will not reflect peoples names or patient numbers and will only show case numbers via a coding system. By participating you will help us understand the challenges facing managers and professional health care staff in implementing a major new programme.

Can I withdraw from this study?
You can at any point in time withdraw from the study. This is a voluntary study and there will be no negative consequences should you choose not to participate or to withdraw.

Confidentiality
All information that is obtained in this study will be kept confidential. Please note that to ensure that this is maintained, interview schedules will be coded and will only indicate the date of the interview and the facility code. Your participation will remain anonymous. Information pertaining to interview schedules will be kept in a separate file from the rest of the report, under lock and key in a safe place by the researcher.

Should you have any questions concerning this study, please contact us:
Nicolette Naidoo Tel: 082 490 1214 Email: nickynaidoo@gmail.com
Rebecca Pursell Tel: 082 828 7387 Email: mwrebecc@mweb.co.za

Our supervisor is Professor Helen Schneider and she is contactable on:
Tel: 011-242 9905 Email: helen.schneider@nhls.ac.za

Sincerely, **Nicolette Prea Naidoo** **Rebecca Pursell**

Consent Form for Manager of Tuberculosis Unit / Clinic

Organisational capacity affecting patient adherence to ARVs in Gauteng Province

Do you understand the purpose of the study, and what will be required of you if you agree to participate?

Yes/No

Have all your questions been answered? Yes/No

If no, what further questions do you wish to ask?

Do you understand that you are not obliged to agree to participate in this study? Yes/No

Do you understand that your decision to participate or not participate will not affect your job security in any way? Yes/No

If answers to all above are yes

Do you agree to be interviewed for the project Yes/No

Signature of Respondent (If yes) _____

Names and contact details of investigators:

Nicolette Prea Naidoo
Tel: 082 490 1214
Email: nickynaidoo@gmail.com

Rebecca Pursell
Tel: 082 828 7387
Email: mwrebecc@mweb.co.za

Organisational capacity affecting patient adherence to ARVs in Gauteng Province

TB Manager Interview Schedule

1. Interview details

1.1 Interview schedule No: _____

1.2 Interviewer: _____

1.3 Date of interview: _____

1.4 Facility code: _____

1.5 Data capturing: Date: By:

---

2 Profile of service

2.1 What TB services do you provide at this clinic? (*Prompt and tick relevant one*)

Diagnosis of TB (sputum & x-ray)	
Initiation of treatment of TB	
Follow-up treatment	
Voluntary counselling and testing for HIV	
None	

2.2 If yes, what days and times do you provide TB care at this OPD/clinic?

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Hours of operation							

2.3 *If does not provide full spectrum* where do you refer patients for…

	Name of place where refer	On-site or off-site
Diagnosis of TB (sputum & x-ray)?		
Initiation of treatment of TB?		
Follow-up treatment?		
Voluntary counselling and testing for HIV?		

3. Staffing

3.1 Have staff in this TB service received training in HIV? Yes/No

3.2 If yes, what training have the staff received with regards to HIV?

Staff	**No. trained in HIV**	**Name of training course/content**
Doctors		
Professional Nurses		
Auxiliary Nurses		
Other		

(Prompt for the following if not mentioned: clinical management, counselling, health promotion)

4. Integration

4.1 Does this unit share staff with other services within the OPD/clinic? Yes/No

If yes,

Which service?	Which staff?

4.2 Do you share space with the other service centres/units located in this OPD/clinic? Yes/No

If yes,

Which service?	Which space?

4.3 Is it routine procedure within your facility to refer all TB patients to the VCT service?

Yes	
No	

4.4 Similarly, is it routine procedure to refer HIV+ patients to be screened for TB?

Yes	
No	

4.5 Do formal methods of communication and feedback exist between TB clinics and ART units, if patients are taking TB treatment and ART simultaneously?

Yes	
No	

4.6 If yes, can you describe the process of feedback and communication between the two service centres?

_____

_____

_____

4.7 Do you (*read out each question*):

Know the name of the person in charge of the closest ART site?	Y	N
Ever discuss the management of individual patients with staff in the ART service?	Y	N
Send patients with referral letters to the ART service?	Y	N
Receive information back from the ART service on your patients you referred?	Y	N
Provide transport for patients to get to the ART service?	Y	N

4.8 Do you guidelines or protocols for initiating HIV+ patients who are taking ART on tuberculosis treatment?

Yes	
No	

4.9 What other protocols or treatment guidelines are used in the management of TB in patients with HIV?

_____

4.10 Have you observed any *general patterns* of adherence to tuberculosis treatment among patients who are taking ART? If so, please describe these.

5. Information Systems

5.1 Do you know what percentage of TB patients at this clinic are:

Tested for HIV?	
Test positive for HIV?	
Complete treatment for patients with only TB? (treatment completion rate)?	
Complete treatment in patients receiving ART simultaneously?	
Are cured? (cure rate)	

5.2 Are there routine follow-up systems that are able to identify patients who are defaulting or have not returned for their drugs?

Yes	
No	

5.3 If yes, please describe further

5.4 If such systems exist, who is responsible for follow-up?

6. Views on HIV services

I'd now like to ask your opinion of HIV/AIDS services in this clinic:

6.1 In your opinion what are the strengths of the HIV/AIDS-related services in this OPD/clinic?

6.2 In your opinion what are the areas of the HIV/AIDS-related services that are weak or that require attention in this OPD/clinic?

7. General

7.1 Can you think of anything that you feel would improve the functioning of the TB service and its interaction with the ART programme?

7.2 Is there anything else that you would like to say about this facility and health care services provided?

7.3 Do you have any questions you would like to ask me?

THANK YOU, THE INTERVIEW IS OVER

Interviewer Notes *(after the site visit on the same day record critical incidents, observations and general impressions)*

University of Witwatersrand
School of Public Health
Faculty of Health Sciences

Information Sheet – Head of VCT Service
Organisational capacity affecting patient adherence to Anti Retrovirals in Gauteng Province

Good Day,
We are two Masters in Public Health (MPH) students at the University of the Witwatersrand. One of us (Rebecca) is a social worker by training and the other (Nicolette) previously studied anatomy. As part of our MPH course we are participating in a collaborative research project between the Centre for Health Policy (CHP) in the School of Public Health and the Gauteng Department of Health (GDOH). CHP and GDOH have cooperated on a number of HIV/AIDS projects in recent years. The theme of the current research is adherence to Anti Retrovirals. Our interest is specifically in the facility factors (for instance, presence of lay counsellors) that promote adherence in patients, which we refer to as "organisational capacity". Another team of students will be doing research on the patient side of adherence. Once completed, the two studies will be combined in one report for Gauteng Province in which we hope to make recommendations for the strengthening adherence in treatment sites. We would be most grateful if you could help in this research by providing information on these factors that relate to Anti Retroviral adherence in patients.

Why we would like to interview you
Your facility is one of four ARV treatment sites (two CHCs and two hospitals) in Regions A and B that were randomly selected for the project. We would like to interview you about your role as a VCT Service Provider. The purpose of the interview with you is to obtain a general understanding of the VCT service in which the ARV site is located, such as the staff and resources in the VCT service, and how you see the link between the VCT programme and the rest of the facility.

What can I expect and what will be expected of me?
One of us will interview you and take notes using a semi-structured questionnaire. We may also ask your help to collect information about staffing and statistics on the uptake of the VCT service. The interview will take about one hour or so to complete. All findings will remain anonymous. Your views will be combined with those of other Facility Managers and neither your name nor that of the facility will feature in the report.

Are there benefits or risks to the participants?
There are no physical risks to the participant. The knowledge obtained from the interview or any additional information obtained from registers will only be known to the researcher. This information will not reflect peoples names or patient numbers and will only show case numbers via a coding system. By participating you will help us understand the challenges facing managers and professional health care staff in implementing a major new programme.

Can I withdraw from this study?
You can at any point in time withdraw from the study. This is a voluntary study and there will be no negative consequences should you choose not to participate or to withdraw.

Confidentiality
All information that is obtained in this study will be kept confidential. Please note that to ensure that this is maintained, interview schedules will be coded and will only indicate the date of the interview and the facility code. Your participation will remain anonymous. Information pertaining to interview schedules will be kept in a separate file from the rest of the report, under lock and key in a safe place by the researcher.

Should you have any questions concerning this study, please contact us:
Nicolette Naidoo Tel: 082 490 1214 Email: nickynaidoo@gmail.com
Rebecca Pursell Tel: 082 828 7387 Email: mwrebecc@mweb.co.za

Our supervisor is Professor Helen Schneider and she is contactable on:
Tel: 011-242 9905 Email: helen.schneider@nhls.ac.za

Sincerely, **Nicolette Prea Naidoo** **Rebecca Pursell**

Consent Form for VCT Service Provider

Organisational capacity affecting patient adherence to ARVs in Gauteng Province

Do you understand the purpose of the study, and what will be required of you if you agree to participate? Yes/No

Have all your questions been answered? Yes/No

If no, what further questions do you wish to ask?

Do you understand that you are not obliged to agree to participate in this study? Yes/No

Do you understand that your decision to participate or not participate will not affect your job security in any way? Yes/No

If answers to all above are yes

Do you agree to be interviewed for the project Yes/No

Signature of Respondent (If yes) _____

Names and contact details of investigators:

Nicolette Prea Naidoo
Tel: 082 490 1214
Email: nickynaidoo@gmail.com

Rebecca Pursell
Tel: 082 828 7387
Email: mwrebecc@mweb.co.za

Organisational capacity affecting patient adherence to ARVs in Gauteng Province

VCT Service Provider Interview Schedule

1. Interview details

1.1 Interview schedule No: _____

1.2 Interviewer: _____

1.3 Date of interview: _____

1.4 Facility code: _____

1.5 Data capturing: Date: By:

---

2. Clinic profile and staffing

2.1 What days and times do you provide VCT at this OPD/clinic?

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Hours of operation							

2.2 For how long has this facility been providing VCT to patients? _____ *months/years*

2.3 More or less, how many patients attended the voluntary counselling and testing service in the last month? _____

3 Pathways of Care

I am going to ask you now to take me through the steps of what happens when a person visits this service.

A person is referred to or attends the VCT unit for an HIV test. What steps do you follow?

Step 1	
Step 2	
Step 3	

If the test is positive for HIV what happens next?

Step 1	
Step 2	
Step 3	

If not already indicated If a patient is found to be HIV+, what is the process by which they receive ongoing care?

Continue receiving care at this facility		
Referred to surrounding hospital		*Site of referral*
Referred to Community Health Centre		*Site of referral*

4. Staffing

4.1 Please tell me about the staffing for the VCT service

Category	Full-time	Part-time	Left in last year	Joined in last year	Salary/Renumeration
Doctors					
Professional nurses					
Enroled nurses					
Enroled nursing assistants					
Lay counsellors					
Volunteers					
Other					
Other					

In the last year, since ____ (*month*) have any staff left the unit? (*ditto*)
In the last year, since ____ (*month*) have you recruited any new staff to the unit? (*ditto*)

4.2 Is there an ongoing programme of training and skills upgrading for staff in this clinic?

Yes	
No	

4.3 If yes, what training have the staff in this unit received?

Staff	No. trained	Name of training course
Doctors		
Professional Nurses		
Auxiliary Nurses		
Lay counsellors		

5. Integration

5.1 Does this unit share staff with other services within the OPD/clinic? Yes/No
If yes,

Which service?	Which staff?

5.2 Do you share space with the other service centres/units located in this OPD/clinic? Yes/No
If yes,

Which service?	Which space?

5.3 What are the most common ways in which people reach the VCT service *(read and ask to rank):*

TB service	
Antenatal	
General curative service	
Other clinics	
Community-based health promotion and campaigns	
Self referred	
Other	

5.4 Do you (*read out each question*):

Know the name of the person in charge of the closest ART site?	Y	N
Ever discuss the management of individual patients with staff in the ART service?	Y	N
Send patients with referral letters to the ART service?	Y	N
Receive information back from the ART service on your patients you referred?	Y	N
Provide transport for patients to get to the ART service?	Y	N

5.5 What procedures for formal communication and feedback are there between this unit and staff in the referral facility?

Procedures	**Yes**	**No**
Written records in patient file		
Duplicate test results distributed		
Case meetings between clinicians		
Telephonic Contact		

6. Information Systems

6.1 What information is collected at facility level within the VCT service?

6.2 Is there any mechanism for tracking referred patients movement through the health system?

Yes	
No	

If yes, please explain further

7. Views on HIV/AIDS related services

I'd now like to ask your opinion of HIV/AIDS services in this clinic:

7.1 In your opinion what are the strengths of the HIV/AIDS-related services in this OPD/clinic?

7.2 In your opinion what are the areas of the HIV/AIDS-related services that are weak or that require attention in this OPD/clinic?

8. General

8.1 Can you think of anything that you feel would improve the functioning of the VCT service and its interaction with the ART programme?

8.2 Do you have any questions you would like to ask me?

THANK YOU, THE INTERVIEW IS OVER.

Interviewer Notes *(after the site visit on the same day record critical incidents, observations and general impressions)*

University of Witwatersrand
School of Public Health
Faculty of Health Sciences

Information Sheet – Antenatal Care Provider

Organisational capacity affecting patient adherence to Anti Retrovirals in Gauteng Province

Good Day,

We are two Masters in Public Health (MPH) students at the University of the Witwatersrand. One of us (Rebecca) is a social worker by training and the other (Nicolette) previously studied anatomy. As part of our MPH course we are participating in a collaborative research project between the Centre for Health Policy (CHP) in the School of Public Health and the Gauteng Department of Health (GDOH). CHP and GDOH have cooperated on a number of HIV/AIDS projects in recent years. The theme of the current research is adherence to Anti Retrovirals. Our interest is specifically in the facility factors (for instance, presence of lay counsellors) that promote adherence in patients, which we refer to as "organisational capacity". Another team of students will be doing research on the patient side of adherence. Once completed, the two studies will be combined in one report for Gauteng Province in which we hope to make recommendations for the strengthening adherence in treatment sites. We would be most grateful if you could help in this research by providing information on these factors that relate to Anti Retroviral adherence in patients.

Why we would like to interview you

Your facility is one of four ARV treatment sites (two CHCs and two hospitals) in Regions A and B that were randomly selected for the project. We would like to interview you as an antenatal care provider in this facility. Specifically we are interested in the prevention of mother to child transmission (PMTCT) of HIV aspects of your work and how this links with the HIV treatment programme in this facility.

What can I expect and what will be expected of me?

One of us will interview you and take notes using a semi-structured questionnaire. We will ask you questions about examinations and tests done on pregnant women and where you refer them if they need HIV care. All the findings of the study will be anonymous. Your views will be combined with those of people interviewed and neither your name nor that of the facility will feature in the report.

Are there benefits or risks to the participants?

There are no physical risks to the participant. The knowledge obtained from the interview or any additional information obtained from registers and routine data will only be known to the researcher. This information will not reflect peoples names or patient numbers and will only show case numbers via a coding system. By participating you will help us understand the challenges facing managers in implementing a major new programme.

Can I withdraw from this study?

You can at any point in time withdraw from the study. This is a voluntary study and there will be no negative consequences should you choose not to participate or to withdraw.

Confidentiality

All information that is obtained in this study will be kept confidential. Please note that to ensure that this is maintained, interview schedules will be coded and will only indicate the date of the interview and the facility code. Your participation will remain anonymous. Information pertaining to interview schedules will be kept in a separate file from the rest of the report, under lock and key in a safe place by the researcher.

Should you have any questions concerning this study, please contact us:

Nicolette Naidoo Tel: 082 490 1214 Email: nickynaidoo@gmail.com
Rebecca Pursell Tel: 082 828 7387 Email: mwrebecc@mweb.co.za

Our supervisor is Professor Helen Schneider and she is contactable on:
Tel: 011-242 9905 Email: helen.schneider@nhls.ac.za

Sincerely ,

Nicolette Prea Naidoo **Rebecca Pursell**

Consent Form for PMTCT/Antenatal Care Provider

Organisational capacity affecting patient adherence to ARVs in Gauteng Province

Do you understand the purpose of the study, and what will be required of you if you agree to participate? Yes/No

Have all your questions been answered? Yes/No

If no, what further questions do you wish to ask?

Do you understand that you are not obliged to agree to participate in this study? Yes/No

Do you understand that your decision to participate or not participate will not affect your job security in any way? Yes/No

If answers to all above are yes

Do you agree to be interviewed for the project Yes/No

Signature of Respondent (If yes) _____

Names and contact details of investigators:

Nicolette Prea Naidoo
Tel: 082 490 1214
Email: nickynaidoo@gmail.com

Rebecca Pursell
Tel: 082 828 7387
Email: mwrebecc@mweb.co.za

Organisational capacity affecting patient adherence to ARVs in Gauteng Province
Antenatal Care Provider Interview Schedule

Interview Details:

1.1 Interview schedule No: _____

1.2 Interviewer: _____

1.3 Date of interview: _____

1.4 Facility code _____

1.5 Data capturing: Date: _____ By _____

_____

2. Department Profile

2.1 What days and times do you provide antenatal care at this OPD/clinic?

Days	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Times							

2.2 Do you provide PMTCT (prevention of mother to child transmission of HIV as a part of antenatal care? Yes/No

2.3 Could you describe what your role is in the PMTCT service?

3. Pathways of Care

I am going to ask you now to take me through the steps of what happens when a pregnant woman visits this clinic.

A woman presents at the clinic for a booking visit. She arrives at the clinic - what happens then? *(probe for physical routing through facility)*

Step 1	
Step 2	
Step 3	
Step 4	

Probe for the following activities if not mentioned

HIV–related activity	**Yes/No/Comment**
VCT offered?	
Counsellors in ANC?	
HIV testing on site?	
Other tests?	

If she turns out to be HIV positive what happens to her next?

Step 1	
Step 2	
Step 3	
Step 4	

Probe for specifics if not mentioned

HIV-related activity	Comments
Follow-up counselling?	
Staging?	
Who does CD4 count?	
Referral to any other service?	

If the woman is HIV positive and you suspect TB what do you do?

Step 1	
Step 2	

4. Staffing

4.1 Have staff in this antenatal service received training in HIV? Yes/No

4.2 If yes, what training have the staff received with regards to HIV?

Staff	No. trained in HIV	Name of training course
Doctors		
Professional Nurses		
Auxiliary Nurses		
Other		

4.3 Does this unit share staff with other services within the OPD/clinic? Yes/No

If yes,

Which service?	Which staff?

4.4 Do you share space with the other service centres/units located in this OPD/clinic? Yes/No

If yes,

Which service?	Which space?

5. Information Systems

5.1 What information is collected to allow for follow up of mothers and their infants?

5.2 Do you know what percentage of pregnant women in this antenatal clinic are:

Tested for HIV?	
Test positive for HIV?	

6. Integration

I'd now like to ask your opinion of HIV/AIDS services in this clinic:

6.1 In your opinion what are the strengths of the HIV/AIDS-related services in this OPD/clinic?

6.2 In your opinion what are the areas of the HIV/AIDS-related services that are weak or that require attention in this OPD/clinic?

6.3 Which best describes the HIV/AIDS activities in this facility *(read out and ask to choose one)?*

A series of vertical activities completely separate from each other	
A series of activities partially coordinated with each other	
A well integrated set of activities	
A well integrated set of activities that is also well integrated into the activities of the clinic/OPD as a whole	

6.4 Is there anything else that you would like to add about the PMTCT/Antenatal programme at your unit?

Response/Comments:

6.5 Do you have any questions that you would like to ask me?

THANK YOU, THE INTERVIEW IS OVER

Interviewer Notes *(after the site visit on the same day record critical incidents, observations and general impressions)*

University of Witwatersrand
School of Public Health
Faculty of Health Sciences

Organisational capacity affecting patient adherence to Anti Retrovirals in Gauteng Province
Information sheet for health care workers in clinics and outpatient departments concerning the completion of a self-administered questionnaire

Good Day,

We are two Masters in Public Health (MPH) students at the University of the Witwatersrand. One of us (Rebecca) is a social worker by training and the other (Nicolette) previously studied anatomy. As part of our MPH course we are participating in a collaborative research project between the Centre for Health Policy (CHP) in the School of Public Health and the Gauteng Department of Health (GDOH). CHP and GDOH have cooperated on a number of HIV/AIDS projects in recent years. The theme of the current research is adherence to Anti Retrovirals. Our interest is specifically in the facility factors (for instance, presence of lay counsellors) that promote adherence in patients, which we refer to as "organisational capacity". Another team of students will be doing research on the patient side of adherence. Once completed, the two studies will be combined in one report for Gauteng Province in which we hope to make recommendations for the strengthening adherence in treatment sites. We would be most grateful if you could help in this research by providing information on these factors that relate to Anti Retroviral adherence in patients.

Why we would like to interview you

Your facility is one of four ARV treatment sites (two CHCs and two hospitals) in Regions A and B that were randomly selected for the project. As part of a general assessment of the facility we are approaching all medical and nursing staff with the request to complete an anonymous questionnaire. This questionnaire asks some personal information (e.g. your age, current job description) and enquires as to your recent experiences of work (e.g. number of patients seen). However, most of the questionnaire asks you to rate your agreement with job-related items and feelings. The questions are drawn from tools designed for people working in human service professions and have been tested in other settings. Completion of the questionnaire should take you no more than 15 minutes. When completed each questionnaire must be placed and sealed in the envelope provided. Envelopes are to be handed to the person nominated by the staff for collection of completed questionnaires.

Are there benefits or risks to the participants?

There are no physical risks to the participant. The knowledge obtained from the questionnaire will only be known to the researcher. This information will not reflect peoples names and will only show coding numbers. By participating you will help us understand the challenges facing managers as well as professional staff in implementing a major new programme.

Can I withdraw from this study?

You can at any point in time withdraw from the study. This is a voluntary study and there will be no negative consequences should you choose not to participate or to withdraw.

Confidentiality

When you fill in the questionnaire, a descriptor or code will be allocated to you instead of your name. In addition, being that the questionnaire is anonymous, you are not required to fill in your name. This means that no one will be able to link what you have answered back to you. There will be no adverse consequences should you choose not to fill it in.

What we plan to do with the information

The results of the survey will feed in to recommendations to creating better management and evaluation mechanisms of the ART programme. This will be accomplished by identifying gaps in service provision and management of the programme.

Should you have any questions concerning this study, please contact us:
Nicolette Naidoo Tel: 082 490 1214 Email: nickynaidoo@gmail.com
Rebecca Pursell Tel: 082 828 7387 Email: mwrebecc@mweb.co.za
Our supervisor is Professor Helen Schneider and she is contactable on:
Tel: 011-242 9905 Email: helen.schneider@nhls.ac.za
Sincerely, **Nicolette Prea Naidoo** **Rebecca Pursell**

Consent Form for Professional Staff

Organisational capacity affecting patient adherence to ARVs in Gauteng Province

Do you understand the purpose of the study, and what will be required of you if you agree to participate? Yes/No

Have all your questions been answered? Yes/No

If no, what further questions do you wish to ask?

Do you understand that you are not obliged to agree to participate in this study? Yes/No

Do you understand that your decision to participate or not participate will not affect your job security in any way? Yes/No

If answers to all above are yes

Do you agree to be interviewed for the project Yes/No

Signature of Respondent (If yes) _____

Names and contact details of investigators:

Nicolette Prea Naidoo
Tel: 082 490 1214
Email: nickynaidoo@gmail.com

Rebecca Pursell
Tel: 082 828 7387
Email: mwrebecc@mweb.co.za

Organisational capacity affecting patient adherence to ARVs in Gauteng Province
Self-administered Questionnaire for Professional Staff Working in ARV Sites

INSTRUCTIONS

This questionnaire requires you to tick (√ or X) or fill a series of boxes/lines. Please do not write your name on this questionnaire. If you feel uncomfortable answering any individual questions, you can leave it blank.

BACKGROUND INFORMATION

Today's date: /2006

Your age _____ years

Your sex:

MALE	FEMALE

Your current position (choose the one that best describes your position)

Nursing assistant	
Enrolled nurse	
Professional nurse	
Ward or unit manager	
Other, specify	

Unit in which you are working:

TB	
PMTCT/Antenatal	
ART/HIV	
VCT	
General Curative	
Other, specify	

What year did you start working at this clinic or hospital? _____

WORK AND PERSONAL SITUATION

In the last week, how many hours would you say you worked? _____ hours

On your most recent working day, how many patients did you see? _____ patients

In the last month, have any of your colleagues been unexpectedly absent from work?

Yes	No

In the last year, have you experienced a needle-stick injury at work?

Yes	No

Do you feel vulnerable to HIV in your personal life?

Yes	No

In the last month, did your department/clinic run out of any of the following?

	Yes	No
Drugs		
Disposables e.g. gloves		
Soap/hand spray		

Please indicate your degree of agreement with the following statements:

	Strongly disagree	Disagree	Not Sure	Agree	Strongly Agree
I am confident about my ability to do my job					
HIV positive patients make too much extra work for staff					
I am motivated to carry out my duties					
There are enough staff to do the work in this unit					
Overall, I am very satisfied with my job					
Hospital/clinic management communicates well with staff in this site/hospital					
I feel very little commitment to this hospital or clinic					
The amount of work I have to do is too demanding					
I can see myself working overseas in the future					
The major satisfaction in my life comes from my work					
I am proud to be working at this clinic/hospital					
I only do this job so that I get paid at the end of the month					
I prefer to work in the public sector than in the private sector					
These days I don't feel motivated to work as hard as I could					
I am glad I work for this facility rather than other facilities in this province					
I feel I'm positively influencing other people's lives through my work					
I feel emotionally drained at the end of every day					
I intend to leave this hospital					
There have been too many changes at this hospital /clinic in the past year					
In this facility conflict hampers our work					
If I had a personal problem which affected my work I would feel free to discuss it with my supervisor or manager					

Thank You for Your Time