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FACULTY OF ARTS
DEPARTMENT OF DEVELOPMENT STUDIES

**Effects of late “visits” re-booking practice at Mpilo and Parirenyatwa
hospitals Opportunistic Infections clinics for the HIV/AIDS & TB
Programme in the Ministry of Health and Child Care**

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APPROVAL FORM

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Abstract

Worldwide, an estimated 34 million people were living with HIV, but only 47% of the people in low- and middle-income countries eligible for antiretroviral therapy (ART) were receiving treatment at the end of 2013. Zimbabwe initiated its national ART programme in April 2004, and since that time the benefits of such therapy have been widely documented in the country. The scaling up of the ART programme is facilitated by the identification and approval of ART-initiating sites using standardized assessment tools and simplified treatment guidelines that employ the public-health approach as well as the family-centred approach. It is now widely accepted that even resource-poor countries using a public-health approach to HIV and AIDS care and treatment can achieve similar effectiveness with these antiretrovirals (ARVs) as observed in more affluent settings.

The aim of this study is to assess the effectiveness of the two different rebooking methods practiced by Mpilo and Parirenyatwa Central Hospitals in the provision of the ART and OI services in Zimbabwe while exploiting the work done by others on gender mainstreaming theory, the queuing theory and deducting from McGregor's Theories X and Y. The study also set to elucidate on how the need to rebook appointments arose in the health facilities in Zimbabwe. Some of the factors that cause clients not to honour their booked appointments were explained and validated as the study progressed to look at the best way to deal with this seemingly minority population of People Living With HIV (PLWHIV) in Zimbabwe. This key population is quite crucial if Zimbabwe is to put up a successful fight against HIV/AIDS. There are deadly consequences ranging from treatment failure to multiple drug resistance up to the much dreaded revival of the HIV related mortality/death rates that were beginning to decline. The epitome of this study is when it will assess the performance of different patient re-booking approaches in terms of the treatment outcomes for the patients who have been rebooked. The study also focuses on the human-work relationships in order to assess the silent yet salient factors that affect patient care for those patients who miss their normal booked times in the OI/ART clinics of both Mpilo and Parirenyatwa Central Hospitals.

Methods: Patient level treatment and CD4 count measurement data from the two facilities was extracted using the electronic Patient Monitoring System (ePMS) in the AIDS and TB Unit of the Ministry of Health and Child care. A sample of 10,000 patient visit records were extracted from both facilities (giving a total of 20,000 records) from which rebooked visits were taken (n=1219). The variables for analysis included gender, age, baseline and subsequent CD4 counts. Key Informant Interview (KII) questionnaires were also administered as a way of trying to get more insights and to validate the trends coming out of the collected data. KIIs were used to assess the attitude and perceptions of the Health Care Providers and Managers towards patients who miss their appointments. The researcher also undertook to observe the workflow, processes and procedures as patients came for their ART clinics at both facilities. A desk review was also done to inform the researcher about documentation, Standard Operating Procedures (SOPs), policies and other official documentation or articles on public health in Zimbabwe.

Results: Of the 1,219 rebooked appointments, 842 of them were coming from one facility while only 377 were from the other. Data was analysed using SPSS and Stata. Descriptive statistics showed by a wide margin, the superior health seeking behaviour of the feminine gender and this was further validated by the results of the KIIs. CD 4 count median trends were used because the gathered data was not following any normal distribution curve. The analysis however managed to convince the researcher that better CD4 counts were observed at the Mpilo Central Hospital. To a greater extent positive initiatives employed in the ART clinics resulted in fewer rebooked visits and better patient outcomes. There is currently no electronic appointment booking and reminder systems in both facilities.

Conclusion: Although Mpilo Hospital proved to be doing everything in order to save thousands of lives through the way that they are administering their rebooking procedure, efforts still need to be put towards taking the ART programme to the people and improve access to care and treatment if Zimbabwe is to completely be on top of the situation in the fight against HIV/AIDS. This study is just the beginning of a series of studies meant to validate and strengthen the way ART is offered in Zimbabwe after overcoming the early stages where stigmatisation was a major hindrance and a stumbling block for many people who died yesteryear. The research proved that where the better of the two rebooking methods was in use, there was better patient outcomes and the health care providers are more positive. ART treatment guidelines must not be used as an end in themselves but as a means to a

defined end. Parirenyatwa Hospital management needs to do more in order to allow innovation and flexibility in their ART clinic. Their policies and procedures need to be more patient focused while not neglecting the health care providers at the same time.

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Dedication

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May our soon coming Saviour and Creator be with you always.

Declaration

I declare that this research report is my own work. It is submitted for the Degree, Master of Arts in Development Studies at the Midlands State University, Gweru and it has not been submitted before for any other degree or examination in any other University. Where I have used the work of other authors, I have properly acknowledged them and I have not copied any author or scholar's work with the intention of passing it off as my own. All the interviews and informal conversations that have been conducted for the purposes of this research report have also been cited correctly and I have not passed off any of my participants work, suggestions and quotes as my own.

Signed:.....

On this..... Day of.....2015

Table 1: Acronyms

ATP	AIDS and TB Programme
M & E	Monitoring and Evaluation
MOHCC	Ministry of Health and Child Care
NAC	National ADIS Council
DEC	Data Entry Clerk
OI	Opportunistic Infection
ART	Anti-Retroviral Therapy
CD4	Cluster of differentiation 4
ARVs	Medicines for treating HIV
FDC	Fixed-dose combination
PLHIV	People living with HIV
UNDP	United Nations Development Programme
PMTCT	Prevention of mother-to-child transmission of HIV
STI	Sexually transmitted infection
TB	Tuberculosis
WHO	World Health Organisation
MSF	Medicines Sans Frontiers
ePMS	Electronic Patient Monitoring System

Chapter 1: Study Background

1.1 Background Information

This study borders around the need to accord every Zimbabwean who is affected or infected by the HIV/AIDS, the right to treatment according to the Zimbabwe Patients Charter. This document is a coining of the Zimbabwean context to the World wide Patients Charter, which is also customised for many other countries including Africa. The Zimbabwe Patients Charter was developed from recommendations by the Consumer Council of Zimbabwe (CCZ) and the Zimbabwe Ministry of Health and Child Welfare to offer protection to consumers and improve health services delivery (Mpofu, 2010). Patients, according to this charter, have the right to access the health system at the time of need, both as paying and non-paying patients (Mpofu, 2010, The Herald, October 23, 2013). Health services providers are expected to respond to the needs of patients. Patients are also according to the Zimbabwe Patients' Charter accorded rights to hospitality, confidentiality, consent, privacy, human treatment, choice and redress of grievances. These rights of patients in the Zimbabwe Patients' Charter are very important in a world with people living with HIV/AIDS.

“Monitoring HIV patients is fundamental for controlling their health, as well as the epidemic itself. It is important to know if the medication is working or not, how effective it is for the patient and against the virus.” (MSF, 2015). HIV patient management stipulates that once a person is put on ART treatment, this will be for life. There are so many challenges which militate against the idea of being on medication for the rest of one's life and worse still if one has to visit the clinic at least once every month to see a doctor or a nurse or simply to re-fill their medicine supply. In resource-poor countries it often takes a lot of time, effort and money to collect the necessary drugs. This discourages many from continuing to take their life-long treatment. A drug pick up visit is different from a review visit in that for the former, the patient simply visits the facility to pick up or to re-fill their prescribed drug while a review visit entails booking some clinical time with a nurse or a doctor for the purpose being re-assessed for any essential changes caused by the drug or any new infections that are HIV related like TB¹

¹Studies have shown that up to 50% of people with HIV infection develop TB and that up to 85% of patients with TB have HIV infection (Guidelines for Antiretroviral Therapy for the Prevention and Treatment of HIV in Zimbabwe, 2013)

In a review visit, the clinician may prescribe a change of drugs due to treatment failure or resistance to that particular drug. When that happens, this patient is supposed to be upgraded to a higher drug regimen, which is more powerful and is deemed to respond to the HIV strain in the patient's blood. Currently in Zimbabwe there are 3 such regimens with the third line being the most expensive and beyond the reach of many. It is quite important for a patient to be managed in such a way that they would not be resistant to the first line regimen but in most cases this is caused by the patient's health seeking behaviour. Key among bad health seeking behaviours that are causing resistance to the first and second line regimens for ART is the non-adherence or skipping of review visits. At each review visit in Zimbabwe, a patient is ordinarily supposed to have their CD4 count taken so as to assess any immunological/treatment failure² which will prompt change of regimen to a higher one. Viral load, which is a measure of the amount of the HIV virus per 1000ml³ of blood is normally done once a year for every client. If a client has missed a visit within one calendar month, it is advisable to counsel the patient, measure their CD4 and assess their fitness to continue with their medication; this is a typical review visit. When a patient goes missing for over three months and they have not been taking any medication, they have to go under a thorough screening and review exercise involving taking their viral load, all in an effort to ascertain which regimen they now fall under and to check if the HIV strain is not resistant to all the available regimens. If a resistant strain of HIV is found, then it has to find a new cure before it spreads to other sexual partners of the affected and becomes a new epidemic.

This study is concerned therefore with the care that the missed visits are receiving at the two centres of excellence in terms HIV care in the country for the reasons mentioned above. The care that this group of patients determines whether there will be new strains of the deadly HIV virus or not. By inference, all missed visits must be rebooked and treated as special cases to make sure that the patient becomes more adherent. To have a shot at ending HIV we not only need to start more people on ARVs, but we also need to keep them on ARVs for the rest of their lives. Only when people are taking their medication daily without interruption do they stop being infectious and are no longer able to transmit the virus. (MSF, 2015). This study to a lesser extent will contribute to reduced HIV/AIDS deaths because by attending to

² Treatment failure refers to the state whereby a certain drug can no longer be effective in boosting one's immunity. It is caused by many factors but key among them is non-adherence to treatment prescriptions.

missed clients through re-booking them, health care providers will be fighting against treatment failure and HIV drug resistance; which, when allowed to take place, will eventually lead to death.

The study will also follow the provisions of the Zimbabwe Patients Charter, which was developed from recommendations by the Consumer Council of Zimbabwe (CCZ) and the Zimbabwe Ministry of Health and Child care to offer protection to consumer and improve health services delivery (Ministry of Child and Social Welfare 2010). The Zimbabwe Patients' Charter focuses on a number of basic health issues. Patients, according to this charter, have the right to access the health system at the time of need, both as paying and non-paying patients (Ministry of Child and Social Welfare 2010). Health services providers are expected to respond to the needs of patients. Patients are also according to the Zimbabwe Patients' Charter accorded rights to hospitality, confidentiality, consent, privacy, human treatment, choice and redress of grievances. These rights of patients in the Zimbabwe Patients' Charter are very important in a world with people living with HIV/AIDS. The aim of this study though is to avert the possible deaths that were going to be caused by non-adhering clients at Parirenyatwa and Mpilo Hospitals.

1.2 Aim of the study

The overall objective of the study is to provide quantitative and qualitative information on the level of utility (maximising the greatest good for patients as well as optimising the use of the health service provider (Nurses, Counsellors and Doctors)) derived from and to ascertain the best way in which patients can be re-booked ³(for residual visits) at Parirenyatwa and Mpilo Central Hospitals Opportunistic Infection Clinic for HIV/AIDS programme.

³ Re-booked visits are clinic visit appointments made for patients who would have missed their originally assigned/slotted dates. In this study they are also termed residual visits because they are not originally planned for and they are a corrective measure meant to make sure that every patient gets access to treatment according to the Patient Charter. Poor re-booking practices have the potential to increase the number of patients who die whilst in HIV care.

1.3 Primary Objectives

1. To identify the gaps and barriers in the quality of service in terms of the review dates for patient appointments. This answers to the question why there are differences in the way late visits are dealt with at the two health facilities. To find out if there are processes and standard operating procedures to deal with late comers or visit defaulters. Questions answered are do we find quality related documentation within the clinics. How is the quality of reviews - i.e. measured through improvement in the CD4 count and viral load!
2. To measure or compare the effectiveness of the re-booking mechanisms employed by both facilities. Questions answered are where do we find more re-bookings? And why? Which of the two methods results in better patients (CD4 count and viral load)? How bookings and re-booking are made to align with supply of medicines.
3. To measure the sustainability of these two methods. Costs (transport, wasted booking slots which are never re-claimed/re-booked), skills needed to sustain the programme (how many training workshops attended/needed), privacy rooms, waiting area space, specialised equipment and personnel
4. To establish if gender affects the success or failure of either re-booking methods for the two health facilities.
5. To validate the appropriateness of the two methods of re-booking missed appointments
6. Lastly to recommend any policy and programmatic improvements based on the findings of the study for future programming on reducing the number of defaulting patients

1.4 Project Summary and Rationale for the study

This research explores issues linked to how patients are rebooked for their originally missed appointments at Mpilo and Parirenyatwa Central Hospitals when patients report on a wrong date or time. Most research papers in the past are looking at the optimisation of time spent at a waiting area in similar setups and they come up with elaborative simulation models as solutions, Mohebbifar(2013), just to try and reduce the queuing time without really looking at the behaviour related issues in this area. The aim of the study is to provide quantitative and qualitative information on the level of utility (maximising the greatest good for patients as well as the optimising the effectiveness of the health service provider) derived from the way booking for defaulting patients is done at Parirenyatwa and at Mpilo Central Hospitals.

The OI ART clinics at both Parirenyatwa and Mpilo are run by fully qualified and state registered counsellors, nurses and doctors. The clinic starts when a patient is diagnosed HIV positive and has agreed to begin treatment after a series of counselling sessions (Pre-ART). At initiation⁴ the patient is given medication prescription which lasts some days depending on the condition of the patient and the supply of the medicines at the local pharmacy, WHO ART Treatment Guidelines, (revised in 2013). At the end of the prescribed period, that patient is supposed to report back to the facility for a review by a doctor. This review date is also determined by the workload (number of patients per clinician) on a given date.

It is quite critical for treatment to be effective that the patient shows 100% adherence to this treatment regime and also to the allocated check-up (review) dates. However due to many reasons, most clients do not come to the clinic on the appointment date, rather, they come when it is convenient for and allowing them to do so. Non-adherence has two main fatal results according to many authors and these are:

- a) It will dramatically reduce the effectiveness of the treatment and this increases the occurrence of treatment failure and b) there is a very certain probability of causing HIV resistance to antiretroviral drugs. Resistance to ARV Therapy also means a patient is migrated to a higher treatment regimen which is relatively costly within the context of developing world populations. Márcia SILVA(2009), Margaret Macherera (2012)

⁴ART initiation is the beginning of taking Anti-retroviral Therapy

Many institutional and non-institutional guidelines have been produced to try and deal with the problem of non-adherence. Ministério Da Saúde (2005), Osterberg&Blaschke (2005), World Health Organization (2013).

The research sets out to strike the right chord of combination on patient health seeking behaviours and how the clinicians perceive their customers in order to lessen the burden of patients who default on their visits citing one reason or another. The researcher aims to deductively contribute to knowledge improvement for use by the clinicians as well as raising awareness to the health care managers on the importance of improving their processes and procedures in the OI/ART clinics around the country.

1.5 Problem Statement

While at Mpilo Hospital, Clinicians do review an HIV positive patient who comes on an un-booked or unplanned review date; at Parirenyatwa they will re-book the patient to a future date without a doctor attending the case at all. After treating the patient, the administrator then adjusts the patient's next booking in such a way that the patient is given a date which corresponds to their Cohort ⁵at Mpilo Hospital. To the contrary, at Parirenyatwa they will not review a patient who comes on a wrong date rather they give the patient two (2) weeks supply of medication according to their last prescription. Afterwards, the patient is booked on another date as allocated by the computer system which looks at the available resources at any particular day in the near future. It can be seen that the patient is denied access to a see a clinician at Parirenyatwa while at Mpilo that right is given to the patient and then a corrective booking follows. It can also be argued that with the relatively high number of patients that these facilities receive per day (approximately 200), there is a need to train the patients to adhere to their allocated days so that they will not inconvenience others and also to manage the workload for Nurses and Doctors at both facilities.

The researcher is however not convinced that these solutions are informed by any research and therefore sets out to look for better solutions on how the unplanned visits to the OI clinic for the two hospitals are handled and possibly come up with a better way for both facilities. The fact that these two biggest facilities in the country serve almost the same number of patients and are both located in Zimbabwe and also that ART treatment guidelines are the

⁵A cohort contains a number of patients who were initiated during the same month of a particular year at a given health facility

same for Zimbabwe means that any variations of significant proportions like this one must be investigated and where possible research must recommend the best way forward

Questions to be asked are how are these patients treated, what informs the way they are handled at each facility, why do the two facilities differ in the way they handle this situation and are there any implications, what is the best way of coping with unscheduled visits to the OI clinics of the respective facilities. The research questions are organized around the need to improve the re-booking of patients who are failing to report on their appointed times in order to inform programmatic work from the respective outcomes. The assertions of this study are that there will always be defaulting patients and hence this study will not try to look for solutions for defaulting patients but rather it will explore the dimension of how to best cope with missed appointments. The next chapter will delve into more evidence from other researchers in the same domain.

Chapter 2: Literature Review

2 Literature Review

2.1 Background

Zimbabwe is one of the countries in the world with high Human Immunodeficiency Virus (HIV) prevalence and infection rates. The estimated number of people living with HIV reached a peak in 1999 at 1,975,063 and has since declined to 1,390,211 in 2013. The Antiretroviral Therapy (ART) Programme started in 2004 with 11,000 adult patients and the number has been growing yearly up to 618,980 in 2013. Children on ART have also increased from 1,600 in 2005 to 46,319 in 2013, Zimbabwe National HIV Estimates Report, Ministry of Health and Child Care (2013).

The flexibility of the health system is a vital factor in allowing a patient-centered approach to care. It is especially important in the fight against HIV, as the majority of people suffering from the disease live in resource-poor countries (only 6.5% of HIV-positive people live in high-income countries; 71% live in sub-Saharan Africa). Most of these countries have weak health systems that cannot manage millions of chronic patients. (MSF, 2014). A study in Kenya showed that in 2003, only 6,000 people living with HIV were accessing ART, by 2013 this had increased to 656,000. Since 2008, owing to the expansion of antiretroviral treatment (ART) in Kenya, an increased number of adults on treatment rose from 64 percent to 80 percent as of 2013. UNGAS (2014) Kenya AIDS response progress report (2014)

Zimbabwe has continued to scale up the provision of ART with support from Global Fund, PEPFAR, the Expanded Support for HIV and AIDS Programmes (ESP), local consortium of multinational and international partners, Department for International Development (DFID), European Union (EU), and others. As of 2014 the average monthly initiation of new patients was 12,000 and it is expected that the figure will increase as the country gains momentum in implementing the 2013 New Treatment Guidelines. Ministry of Health and Child Care, ePMS Assessment Report (2014).

There are over 1500 health facilities in Zimbabwe where ART services are offered and this includes the country's six biggest Health care centres, which are; Parirenyatwa group of Hospitals, Mpilo Central Hospital, United Bulawayo Hospital, Harare Central Hospital, Inghusheni Hospital and Chitungwiza. Despite great strides made by the government of

Zimbabwe in trying to make Antiretroviral treatment cheaper and more accessible to all populations in the country, challenges remain in the service is delivered and the population's health seeking behaviours, Sarna (2010). This study will focus on Parirenyatwa and Mpilo Central Hospitals.

2.2 Contextualisation

A desk review by this researcher found out that most authors and researchers in this area are exploiting more on the need to reduce waiting time through the introduction of specialised simulation and modelling systems that will improve the work floor in the clinic area. Some are still devoting a lot of time on finding out why patients (both adult and children) are not adhering to strict treatment regimens, Macherera(2012), Sarna,(2010), while others are spending time to find out why patients are disappearing completely from treatment registers/inventories, (SILVA, 2009).

All of the authors that were reviewed were missing the crucial point that research needed to concentrate on the silent yet salient treatment behaviours by the patient and the not-so obvious signals emitted by the clinicians/healthcare workers in their day to day duties. Factors which when considered will leave almost every facility with patients that are not adhering to their visits.

Numerous factors were found to be associated with Anti-Retroviral Therapy uptake in developing countries; they range from socio-demographic, economic, clinical and structural factors (Geng et al., 2011, Msellati et al., 2003, Ingle et al., 2010a); but what worries most writers are the factors that militate against ART uptake in the same population. Among other challenges, service delivery and health seeking behaviour have been discovered to be barriers to treatment and care (Sarna, 2010).

The choice of medicine regimen for Zimbabwe and for similar low-resource setup is based on the "essential medicine" concept and the rational use of medicine. To maximise adherence, use of Fixed Dose Combination (FDC) medicines is strongly encouraged. An essential medicine or medicine is defined as follows:

These are medicines that satisfy the healthcare needs of the majority of the population, at a price they and the community can afford; they should therefore be available at all times and

in adequate amounts, and in appropriate dosage forms (WHO Expert Committee on Essential Medicines, December 1999).

The rational use of medicines is defined as follows:

The rational use of medicines requires that patients receive medicines appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and the community. (WHO Conference of Experts, Nairobi, 1985)

The increase of visits to public hospitals can be partly explained by the spread of the epidemic in all sectors and geographic boundaries, lower costs, increasing demands from patients and hospitals' perceived improved service quality. Consequently, many community hospitals are facing the challenge of improving service to meet patient demands with limited staff resources. (China Medical Journal, 2010). Many patient complaints come from the long waiting time and long waiting times at outpatient clinics has been shown to be the major dissatisfaction with medical care delivery and a barrier to further use of healthcare facilities by affected patients. (China Medical Journal, 2010). Some researchers argue for the adoption of an appointment system and flexible management of doctor scheduling as an effective way to achieve decreased waiting time. China Medical Journal (2010).

It is critical for managers to know how to allocate the limited resources to the right place at the appropriate times. More data are needed for policy-making evaluation before the new plans are implemented, and simulation skill is a suitable decision-making support tool to support this. (China Medical Journal, 2010). Appointment systems are widely used as a good way to control rate of patients' arriving for consultations in order to improve service delivery. It has been widely used in western countries, but is not prevalent in Zimbabwe.

In accordance to a desk review of other articles, most researchers put forward the argument for using appointment systems informed by simulation models. Appointments could be patient demand-orientated and doctor-orientated. Hospitals should not expect 100 % of outpatients to use the appointment system, or expect 100% of appointed patients to honour their appointment time, Chen (2009) LópezMartínez (1987). Therefore it is worthwhile to devote some time to plan for the unexpected event when patients miss their appointments; whether or not there is a perfect appointment system in place. To do justice to the militating

facts against ART uptake, briefly mentioned above, I am going through to scan through some of them which indirectly can also cause missed appointments or non-adherence.

2.2.1 Gender factors

Among 109 countries reporting to WHO/UNAIDS, estimated ART coverage was higher among women (53%) than men (40%) (WHO/UNAIDS/UNICEF, 2011); this was also the case in a number of studies in developing countries (Ingle et al., 2010a, Geng et al., 2011, Msellati et al., 2003). An online publication called Avert.org published in 2015 that in Kenya 6.9 percent of women were living with HIV compared with 4.2 percent of men as of 2012 (NASCOP, 2012). Over half of the 280,000 adults living with HIV in Lesotho are women and the whole population is either infected or affected by HIV/AIDS (UNAIDS, 2012). Among HIV infected patients surveyed in a study comparing the socio-economic and health characteristics of HIV infected patients with regards to the Drug Access Initiative (DAI) and to antiretroviral drug (ARV) treatment in Cote d'Ivoire, males were less likely to be on ART (Msellati et al., 2003). In a study on ART access in South Africa, women accessed ART (60% of eligible women) more than men (41%) (Johnson, 2012) and pregnant women initiated ART at a higher CD4 count than men (National Department of Health, 2010). Coming back home, a national report on elimination of mother to child transmission of HIV/AIDS showed that women are more likely to initiate on ART especially if they are pregnant due to the targeted approach by the government programme, called Option B+. This national programme advocates for all pregnant women to be put on treatment in an effort to eliminate mother to child transmission of HIV (National PMTCT Annual report, Ministry of Health and Child Care, 2014). While men as partners are also targeted for treatment if they accompany their spouses for antenatal care (Sexual and Reproductive Health and Rights Service Guideline, Ministry of Health and Child Care, 2014), very few of them are reached this way.

2.2.2 Socio-economic and structural factors

Socio-economic factors such as lack of money for transport, food and poor access to grants have been cited as barriers to ART access in children (Yeap et al., 2010, Macherera, 2012). In a cross-sectional study among 800 HIV infected patients in Zambia on barriers to ART perceived by patients on ART and those who were on home-based care and not on treatment, having to pay for transport and other non-transport costs were mentioned as barriers to ART initiation (Fox et al., 2010). In a study on barriers to ART in Mozambique, transportation cost was also found to hinder access to ART especially in areas where the public transport system is not well developed leading to higher costs due to increased demand (Posse and Baltussen,

2009). Transportation as a barrier to ART is multi-faceted as this includes the direct cost of transport and other incidental costs of spending time away from home (Tuller et al., 2010). In relation to this, increased distance of homestead from the nearest clinic was found to hinder access to ART in the Africa Centre Demographic Surveillance Area (Cooke et al., 2010) and in a review of barriers to ART access in developing countries (Posse et al., 2008). Hence the need to bring healthcare services to the people through primary health care clinics as well as mobile clinics.

In a study done in Free State Province, South Africa, fewer patients from rural or less staffed clinics initiated ART than in urban/peri-urban or highly staffed clinics (Ingle et al., 2010b). In a retrospective study of children attending urban and rural clinics in four provinces of South Africa, living in rural areas was associated with delayed access to ART, increasing the risk of poor outcomes while on ART. At presentation, a higher proportion of children from rural areas had lower CD4 count percentages and severe underweight compared to urban children (Fatti et al., 2010). In a related study done in the Plumtree district in, a conclusion was made that because most children are left under the care of older women as care givers while their mothers migrate to the cities for economic reasons, the children were not accessing treatment mainly due to ignorance and money for transportation to the nearest health facility (Macherera, 2012). In Swaziland the government through donors has launched a program to transport patients from the peri-urban areas to nearest health facilities in an effort to counter the economic challenges faced by patients on ART. The same government has gone a step further and provided food for TB co-infected patients so that they can take their medication (UNDP, 2013)

Zimbabwe Ministry of Health and Child Care has tried decentralisation of ART services to more health centres that are in peri-urban and rural settings as a way to reach the poor in their communities without the need for them to travel long distances for treatment and care services (ZDHS, 2010/11). Decentralisation of ART services was found to reduce travel time in the sub-district (rural) leading to higher ART coverage (UNDP, 2014). Despite ART being provided free of charge at public health facilities in South Africa rural ART users spent a considerable portion of their income on travel to the health facility and self-care (Chimbindi and Bärnighausen, 2010, Cleary et al., 2012). This self-care may be a reflection of perceived poor quality of care at rural healthcare centres and unequal access to ART in rural compared to urban areas (Cleary et al., 2012) as well as the culture of using traditional medicines. The differences in ART access between rural and urban areas was also highlighted in a study on

barriers to ART in Mozambique where rural ART users had longer waiting time at the clinic due to shortage of staff which impacted on the quality of care at rural health facilities. (Posse and Baltussen, 2009).

The perceived high costs for ART were also cited as a barrier to ART in a review of studies on barriers to ART access in developing countries (Posse et al., 2008). Not having health care insurance was also found to hinder the efficient movement of HIV infected patients from diagnosis to treatment (Msellati et al., 2003, Dieffenbach and Fauci, 2009). Homelessness was also found to impede access to treatment (Dieffenbach and Fauci, 2009). Therefore economic factors influence access to treatment and for this reason poverty eradication programmes should go hand-in-hand with HIV prevention, treatment and care programmes.

However, in some studies socio-economic status was not associated with being on treatment. In a study conducted in the Africa Centre surveillance area on population's uptake of antiretroviral treatment, socio-economic status was not associated with being on ART (Cooke et al., 2010). This is probably because the study population was relatively homogeneous in terms of socio-economic status with the majority very poor with two in five adults unemployed (Muhwava et al., 2008). Thus socio-economic factors affect ART uptake in a complex way and depend on the environment in which studies are conducted.

2.2.3 Clinical and behavioural factors

Clinical factors which were found to hinder access to ART were severe immuno-suppression, loss of functional capacity and Pre-ART assessment (Ingle et al., 2010a, Murphy et al., 2010). After HIV diagnosis, there is clinical and laboratory assessment to determine the stage of HIV infection and need for ART as well as prophylaxis for opportunistic infections. The patients also undergo psychosocial assessment focusing on financial resources, social support and readiness to disclose as well as understanding of HIV. Adherence counselling (where three sessions are needed) should be completed before ART is commenced (World Health Organisation, 2013). This pre-ART readiness assessment was cited as a barrier to ART access among HIV-infected patients admitted with opportunistic infections at McCord Hospital in Durban (Murphy et al., 2010).

In a study at public sector treatment facilities in South Africa, severe immuno-suppression (CD4 count < 50 cells/mm³ and underweight (weight < 50kg) were found to be associated with lower chances of initiating ART (Ingle et al., 2010a). In this study, a large number of people died before they initiated therapy (83% of the deaths). Loss of functional capacity due to

hospitalisation was also found to hinder access to ART among patients admitted with opportunistic infections (Murphy et al., 2010).

Fear of stigmatisation has also been suggested to play an important role in delaying people from accessing treatment (Yeap et al., 2010, Dieffenbach and Fauci, 2009, Posse et al., 2008), although this may diminish with widespread use of ART in a community with high HIV prevalence (Bor et al., 2011). Wrong perceptions about HIV like maternal guilt may hold back mothers from seeking treatment for their children. Negative staff attitude at clinics was also cited as a barrier to ART (Yeap et al., 2010). In addition to these barriers, substance abuse, mental illness and denial were also found to impede the smooth movement of patients from HIV diagnosis to treatment (Dieffenbach and Fauci, 2009).

2.2.4 Mathematical modelling based importance of ART coverage and uptake

In addition to the role of ART in improving survival among people living with HIV, antiretroviral drugs have been shown to reduce HIV transmission. ART use in prevention of mother-to-child transmission of HIV has resulted in virtual elimination of neonatal HIV infection (Hammer, 2011). ART has been routinely used for post-exposure prophylaxis (PEP) after considerable potential occupational exposure to HIV at healthcare facilities (Hamlyn and Easterbrook, 2007). Observational data show that PEP reduces HIV sero-conversion by 80% so PEP is recommended in both occupational and non-occupational exposure to HIV (Landovitz and Currier, 2009).

In Zimbabwe a model for early initiation of antiretroviral therapy adopted in 2014 i.e. at CD4 count ≤ 500 cell/mm³ instead of CD4 count ≤ 350 cell/mm³ would significantly reduce HIV incidence and prevalence. This model showed that the HIV prevalence will be lowered from a peak of 24% in 2015 to 14% and incidence from 2.6/100 person years in 2010 to 1.5/100 person years in 2040 if people initiate treatment at CD4 count ≤ 500 cell/mm³ compared to 20% and 2.0/100 person years in 2040 respectively when ART is initiated at count ≤ 3500 cell/mm³ (Hontelez et al., 2011).

The results of the ZDHS, 2010/11 study conducted by the Ministry of Health and Child Care in HIV discordant couples⁶ were strongly in favour of the use of ART as an HIV prevention strategy among sero-discordant couples. In this study couples were randomised to immediate arm ⁷ and delayed arm where the infected partner initiated ART at CD4 count <250

⁶Sero-discordant couples are couples in which one partner was HIV infected and the other was HIV negative.

⁷Immediate arm is whereby infected partner initiated ART at CD4 count of 250 - 550 cells/mm³

cells/mm³. The study showed a 96% efficacy of ART in preventing HIV transmission to the uninfected partner. In addition the benefits to the infected partner who received early treatment were significant (Hammer, 2011).

Also at population level, higher levels of ART coverage were found to be associated with lower chances of HIV acquisition among the uninfected individuals (every percentage point increase in ART coverage was associated with a 1.7 decline in hazard of HIV acquisition) (Tanser et al., 2012). This study was done in the Africa Centre DSA, KwaZulu-Natal, South Africa. All this provide strong evidence of the impact of treatment in reducing HIV transmission hence ART can be successfully used in combination with other preventive strategies in the fight against HIV/AIDS pandemic.

Although factors associated ART access and the importance ART as an HIV prevention strategy are well documented, there are knowledge gaps at population-level as to why some people are not accessing ART even if it is offered free of charge. Missed appointments represent one such gap which needs further study in order to try and understand how best ART can be offered to People Living With HIV (PLWHIV).

2.2.5 Factors Related To Health Care Delivery System

The health care delivery system plays a key role in both adult and adolescent adherence to ART. Firstly, it involves the patient's relationship with the clinician in terms of communication, information and education. The existence of structures that address or support patients' psycho-social issues (Chirag, 2007), care givers on issues of adherence complexity and challenges disclosure of a patient's HIV status and counselling on the adverse effects of the medicines, have been shown to improve adherence to ART and the emotional wellbeing of care givers (Merzel, 2008). Other factors related to the health care delivery system involve reliable ARV supply chain management processes (Chirag, 2007, Polisset, 2009 and Elise, 2005), a centre for follow-up of defaulters (patients who fail to maintain 90 to 100% adherence to their medication) and management of patients with failing ART regimens.

The treatment adherence counselling and support is another service offered and is provided by the nurse in charge of the national ART program at each of the two health facilities. This unit is responsible with assessment of the readiness of the patients before initiating the ART and also provides support for non-adherent patients. Non adherent patients, according to HIV Treatment Guidelines, 2013 are supposed to be followed-up by the psychologists at the psycho-social unit before re-assessed to see if they can continue with their treatment regimen or whether they have to be upgraded to a different combination of ART regimen.

The monitoring of side effects of ART is supposed to be provided by the medical team. All patients are monitored by a medical doctor with the assistance of a local nurse who is fluent in Shona (for Parirenyatwa) and Ndebele (for Mpilo), the most spoken languages in these regions. The same medical doctor monitors the side effects.

Finally, even though studies have not shown an association between health literacy and patient adherence to their medication, there is evidence that regular visits and interaction between the HIV infected or positive patients and their peers can improve health literacy (Malee, 2009). Health literacy is "the degree to which individual have the capacity to obtain process, and understand basic health information to make appropriate health decision" (Murphy, 2010).

2.3 Techniques for Measurement of Adherence

Adherence to ART is crucial and the aim is to prevent virus replication, resistance, and promote the health and survival of the HIV infected patient on ART. However, despite the multiple techniques of measurement of adherence, there is no gold standard technique to accurately evaluate a patient's adherence in practice. Therefore, the reported rates of adherence level may vary according to the method of assessment (Davies, 2008) and result in the difficulty to generalize findings across studies on HIV infected patient's adherence to ART.

There are direct and indirect techniques for adherence measurement (Simoni, 2007). The direct methods involve the biological assay of the active drug, its metabolites and other markers in body fluid (Grossberg, 2007). The indirect methods are self-reporting and care givers report (Simoni, 2007, Grossberg, 2007), clinician assessment (Simoni, 2007, Murri, 2004), medical chart review, clinical attendance, pill count or medication return (Davies, 2008), pharmacy refill record (Simoni, 2007), behavioural observation (as directly observed therapy), resistance testing (Simoni, 2007) and unannounced pill count (Davies, 2008).

All of these methods have limitations in validity, reliability and feasibility (Wiener, 2004). However, according to Wiener and Davies, it seems that electronic pill count and unannounced pill count could be the gold standard technique of measuring accurately the medication adherence (Davies, 2008 and Wiener, 2004).

The assessment of the rate of prescription refills can give an indication of adherence, but does not ensure that the patient is ingesting the medication. Two studies have concluded that the prescription refill method could be a reliable method of measuring adherence among HIV infected adults (Garcia, 2008) and adolescents (Nachega, 2009) on ART. The assessment of the clinical response (virological and immunological response) is also an indirect method, because other factors besides adherence to ART can have an impact on the immunological status. In addition, a virological failure is not always caused by non- adherence to ART (Taddeo, 2008).

Self-reporting questionnaires are generally efficient means of assessing adherence and although such methods have been reported to overestimate the adherence by 30%, their accuracy may be affected by the wording of the questions (Taddeo, 2008). Overallly it can be seen that adherence measurement is quite crucial and without the patient reporting to the

clinic, there might be no way of measuring this. For this reason this study will refer to adherence from clinical attendance so that clinic medical staff can extract rely more self-reporting and care givers report according to Simoni and Grossberg for their measurement of adherence (Simoni, 2007, Grossberg, 2007).

2.3.1 ART Initiation Guideline for Zimbabwe as from 2014

The National AIDS Control programme in conjunction with the Ministry of Health and Child Care (MoHCC) managed to coin out the following guidelines from the global WHO HIV/AIDS Treatment Guide:

- ▶ ART must be started in all patients with WHO clinical stages ⁸III and IV of HIV disease.
- ▶ Where CD4 count testing is available, ART should be started at CD4 counts of less than or equal to 500 cells/mm³ in all adults and adolescents, whilst some patients groups will start ART regardless of CD4 count.
- ▶ Regardless of the CD4 count: ART for all HIV positive pregnant and lactating women
- ▶ All HIV positive partners in sero-discordant couples
- ▶ ALL HIV positive children below 5 years old

⁸ WHO clinical stages 1 to 4 are stages assigned to an HIV positive individual levels of HIV infection usually derived from the patient's oral record and also the clinician's observations. 1 is the least while 4 is sever signs and symptoms of AIDS.

2.4 Theoretical framework (Theory and hypothesis)

This study will exploit the various underpinnings of Gender Mainstreaming in trying to understand if gender (whether male or female) plays a major role in influencing the pattern of missed or defaulted appointments. The hypothesis is that females have a better health-seeking behaviour than males. Many studies have exploited this same hypothesis in generalised health seeking and adherence to treatment behaviours but mine will establish a pattern along the lines of ignorance, opportunities and chances that someone (whether male or female) has which will lead to missing their very important appointments in ART treatment. There are significant factors that can influence women to want to adherence to ART like pregnancy and the time that is at the disposal of women to go and attend clinic. There are also salient factors for men to want to take ARVs like the their masculinity and ability to decide what happens in the family and also the economic tide in most cases swings their way but is this enough to make them not miss their appointment? I will also delve into the provisions of the Queuing Theory in order to understand if there are any inefficiencies in the workflow, resulting in patients missing their appointments. The hypothesis here as informed by this theory is that the more a person queues, the more they get frustrated and would not want to go through the same experience again thus queuing inefficiencies will militate against the need to avoid missing visits. I will see if there are possibilities of improving this through availing many ways in which a client can make an appointment thereby reducing the queuing time. Lastly I will also use the scientific management theories in trying to understand human relations, specifically zooming in on Douglas McGregor's Theory X and Theory Y. McGregor's assumptions are going to be implored in order to pan out the human behaviour aspects of the Clinicians at the two hospitals towards their work and how that can possibly have an impact (negative or positive) on the patients that they book and review. I am hypothesising that one group needs more supervision and they see their day to day work as routine while others take initiatives to improve their working relationships and they focus on the patients more than the other based on the way they treat missed appointments.

Chapter 3: Design

3 Methodology

This chapter describes the study design, site and population, including variables for analysis as well as data extraction, cleaning and management.

3.1 Study Design

This was a cross-sectional secondary data analysis of routinely collected data from Electronic Patient Monitoring System (ePMS), the ART Evaluation and Monitoring Information System at each of the two facilities. Data for 1219 patients was analysed for a period of five (5) months following a certain cohort (January to December 2013 cohort). This data was linked to SPSS and Stata statistical packages for analysis.

3.2 Study Site

This study was conducted in the HIV/AIDS and TB Unit within the Ministry of Health and Child Care where the researcher worked. This unit was created as a direct response to the HIV epidemic in 2004 and was mandated to monitoring and evaluation of efforts, resources and time invested in the fight against HIV/AIDS and TB by the Government of Zimbabwe. The unit produces monthly, quarterly, half yearly and annual reports on all programme monitoring and evaluation activities that it carries out in conjunction with its strategic partners. Periodically the unit carries out surveys and pilot studies to measure the impact of the HIV intervention and to look for more insights in the fight against this epidemic. The ePMS system is the sole system that is used to track and monitor patient level data at health facility level for HIV positive clients. This system outputs many reports including retention analysis, cohort analysis, patient treatment outcomes, survival analysis CD4 count and viral load analysis.

3.3 Study Population and sampling methods

HIV infected individuals who are 15 years and older and are members of households (residents and non-residents) at Parirenyatwa and at Mpilo Hospitals and who were recorded in the ePMS system. Monthly cohorts (January to December 2013) for 1219 clients were followed up for five months (January to May 2014 through measuring their adherence to visits to the OI clinics of the respective facilities. Targeted KIIs using questionnaires (see appendix 1) were administered to about 10 Clinicians and Facility Managers at each of the

two Hospitals; these include Facility Managers (Matrons/Nurse in Charge), Health Care Providers (Nurses and Doctors working in the OI/ART service areas). Participants were randomly selected by the Senior Sister-In-Charge of the Opportunistic Infections Clinic for Anti-retroviral Treatment programme.

3.4 Inclusion and exclusion criteria

3.4.1 Inclusion criteria:

All HIV positive patients who were initiated in the period between January and December 2013 and were recorded in the ePMS system or in the paper based registers within the facilities.

All clinicians who work directly or indirectly in the OI Unit of either Hospitals

3.4.2 Exclusion criteria:

All the other patients who are on pre-ART (not yet initiated on ART) but are HIV positive and have their records in the ePMS system.

All other clinicians who do not work directly or indirectly in the OI Unit of either Hospitals

3.5 Variables for analysis

Gender - Male and Female

Age - age of an individual as of January 2013.

Perception/Attitude of Clinicians towards re-booked visits and organisational process assets for dealing with patient booking

Cluster of differentiation 4 (CD4) count of the patient.

3.6 Data Processing , Management and Analysis

Data was extracted by the Systems Analyst from the ePMS system using SQL queries. Each patient from this database has an individual unique identification number called the OI/ART number. The data was then automatically linked to SPSS version 17 and Stata for analysis.

3.7 Data Management

Duplicates were removed from the dataset and consistency checks were done on all variables e.g. checking that date of birth is smaller than date of ART initiation, male patients were not screened for pregnancy, etc. Variables were renamed and coded for analysis e.g. ART initiation was coded 0 for those who had not initiated ART and 1 for those who had initiated therapy. Some variable like age, employment status and education were categorised. A category for missing data was created.

3.8 Data analysis and Quality Control

A triangulation of quantitative and qualitative methods was used in the study with clients receiving OI/ART services, health providers and policy makers at the two facilities. A survey was used to collect quantitative data from secondary source; ePMS, whilst observations and some open ended questions on key informant interviews and a questionnaire for health care providers was used to collect qualitative data. The quantitative data elicited from the KII questionnaires was analysed using the Statistical Package for the Social Sciences (SPSS). From the ePMS system, SPSS was connected as an adaptor to extract/pull and analyse all the data. This process was fairly easy thanks to technology. Descriptive statistics were used to analyse client demographics, mean adherence scores Pearson's correlation coefficients was also used to examine the strength and direction of the relationship between the different ways in which defaulting patients are treated at the two facilities. Thematic analysis of qualitative data was also undertaken. Data collection tools ⁹were standardised and all the volunteer data collectors were trained in administration of the tools. A snap pre-test of the tools was done at Parirenyatwa Hospital in an attempt to fine tune the usability of these tools. Obstacles to effective and accurate data collection were ironed out after the pre-test. Any misunderstanding of questionnaires or other collection tools was addressed before data collection. Completed questionnaires for KIIs were investigated to identify any inaccurate or incomplete questions.

⁹ See the questionnaires used for data collection in the appendix section.

Frequencies and percentages were recorded and for continuous variables e.g. age and distances travelled to the OI clinic, medians and inter-quartile ranges were recorded in a frequency distribution table because the data was not normally distributed. In order to determine the likelihood of missing an appointment, ordinal logistic regression was used across three groups. Those who were reviewed on their first visit after the missing period and those who were not reviewed but were booked for a future date on their first visit after the missing period and those who did not miss any visit ever since being initiated for the past year.

3.9 SAMPLING FRAME

The sampling technique used is stratified random sampling whereby the researcher took a list of all the patients who visited in a month for five months and depending on the volume, random patient records were picked after every interval for follow-up. All patients who transferred out were dropped from the study and transfers in were not considered because there will be no data for their visits while they attended other clinics than Parirenyatwa and Mpilo. The study looked at the demographic data of the patients in order to answer some of the underlying causes for missed appointments at Parirenyatwa and Mpilo Hospitals. Patients' successive visits will be analysed to see the patterns and trends in the missed visits and these will be paired with the re-booked visits. Any other related factors that will come from the link between the missed visits and the corresponding re-bookings. The intervals will be determined by the average number of patients seen per day, divided by the total number desired from that facility.

3.10 Key Informant Interviews (KIIs)

Key informant interviews will be conducted with key staff members both at national and facility levels. The expected KIIs will be nurses, doctors, sisters-in-charge, hospital administrators and service delivery managers. Additional KIIs will be identified in consultation with MOHCC. The study will use structured key informant interview guides to gather perceptions of management and service providers on the incidence of defaulting patients and the subsequent handling of the same and will suggest possible recommendations for future programming. Facilitating and inhibiting factors to treatment adherence will be sought. Data will also be captured through note-taking and tape recording. Five key

informants (males and females) will be purposively selected from each facility. The following organisations will participate:

3.10.1 National Level

- a) Ministry of Health and Child Care; AIDS and TB departments

3.10.2 Facility Level

- a) Mpilo Central Hospital's OI section
- b) Parirenyatwa Central Hospital's OI section

3.10.3 KII interview questions

These are done to gather perceptions of management and service providers on the incidence of defaulting patients and the subsequent handling of the same and will suggest possible recommendations for future programming. Facilitating and inhibiting factors to treatment adherence will be addressed just as a means to the solution not as the source (end) of the solution in themselves. These factors are still important in that the researcher will try and see if they still influence the clients after going through their re-booked visits. The assertion of this study is that in spite of knowing or dealing with all the factors contributing to missed appointments, some programming time must be spent towards finding a better way to deal with the missed appointments themselves because these will always be there! (Macherera, 2012), (Silva, 2009), Iroezindu et al. (2013)

3.11 Content Analysis

A desk review of relevant documents such as HIV Service and Treatment Guidelines will be conducted to obtain information with regards to provision of integrated OI services. Quarterly/semester/annual reports and any additional documents identified while in the field will also be reviewed. The researcher will also rely to a greater extent on patient information documented in the registers at the two facilities. In sections where there is an electronic version of the registers, the researcher will rely on reports and patient level data that is kept in the computer systems at the respective institutions.

3.12 Ethical considerations

The study will respect freedom to participate. Participants will voluntarily consent to participate in the study without coercion and deception, and may terminate the interview whenever they feel so. The study will adhere to international research principles pertaining to privacy, anonymity and confidentiality. Written informed consent shall be obtained from

study participants. Study participants will have a right of refusal to participate; participants will be informed that participation is voluntary and have the right to withdraw whenever they feel like without any consequences. A research authorisation letter from the Midlands State University will be presented at the MoHCC and subsequently Health facility administrators will be requested via an authorisation letter from the MoHCC to participate in this study.

3.13 Observations

It is important to carry out observations in this study in addition to quantitative data collection in the key service areas in order to determine and estimate the patient's body language and also to pan out the service providers' bias and quality of service that they offer. In addition to that, an observation on the presence and utility of ART guidelines will be done to find of client appointment booking is according to the standard guidelines for the respective facility.

3.14 Focus Group Discussion (FGDs)

Focus group discussions (n=10) will be conducted with clients who have been offered ART services in order to capture their general perceptions on the reasons for not meeting their appointments. Information elicited from FGDs will compliment information gathered from client exit interviews. This will attempt to eliminate courtesy bias.

3.15 Assumptions, Limitations and Bias

The study needed more time in order to interview the affected clients in the survey. Resources were also constraining for the researcher to follow-up using telephonic interviews for clarification of visit data with patients.

Chapter 4: Evidence and Results

Presentation and discussion of the data and information collected and analysed in the study.

4 Evidence and Results

4.1 Definition Of Key Terms

This section covers the definition of key terms that are going to be used in the results presentation as well as I arguing the same.

4.1.1 The CD4+ lymphocyte count.

The CD4+ lymphocyte count is the number of white blood cells (WBC) or lymphocytes that bear the marker, CD4. It is a biological marker that is used to monitor the disease progression and adherence to ART as well. In short CD4 count measures the amount of defenses generated by the body (Medicins Sans Frontieres (MSF), 2015).

4.1.2 ART visit adherence:

Adherence to the visits is a shared agreement between the care provider and the patient that stipulates when the patient is supposed to come and see the clinician for reviews.

4.1.3 Retention

Retention: Eligible participants (caregiver-infant pairs) returned to each follow-up visit or Patients who were alive (no death reported/identified at the previous visit)

Retention rate at a follow-up visit

Number of participants returned for the follow-up visit

Total number of eligible participants

4.1.4 Missed Visits

When the window period for a follow up appointment closes, the visit will be marked as ‘missed’ in the system.

4.1.5 Suspensions

When a participant needs to be withdrawn from the study for one of the following reasons, data collectors need to complete the Suspension form.

- Patient has passed away
- Relocation also known as transfer out
- Unable to locate/contact/follow up

4.2 Questionnaires and interview questions

4.2.1 Key Informant Interviews (KIIs) Questionnaire

(Questionnaire to be answered by **data capturers, healthcare providers and healthcare managers**)

		Responses
1.	Name of institution:	
2.	Designation of respondent (put an X where appropriate): Your post: _____	Healthcare Manager <input type="checkbox"/>
		Healthcare Provider <input type="checkbox"/>
3.	Gender of respondent (put an X where appropriate):	a) Male <input type="checkbox"/>
		b) Female <input type="checkbox"/>
4.	Period you have spent in this institution ? (please provide answer years and months)	
5.	Number of years of experience in your profession ? (please provide answer in years and months)	
6.	Did you receive HIV Integrated In-service Training?	Yes <input type="checkbox"/> <input type="checkbox"/>
	a) If Yes, When?	
7.	Did you receive training in HIV Counselling and Testing?	Yes <input type="checkbox"/> <input type="checkbox"/>
	a) If Yes, specify level? Tick only one applicable option.	Basic <input type="checkbox"/> Intermediate <input type="checkbox"/> Advanced <input type="checkbox"/>
8.	Do you use any system for booking?	Yes <input type="checkbox"/> <input type="checkbox"/>
	a) If yes specify the nature of booking system?	Paper-based <input type="checkbox"/> Computer-based <input type="checkbox"/>
9.	How do you receive reminders for bookings?	Manually <input type="checkbox"/> Electronically <input type="checkbox"/>
10.	How often do you receive reminders? (specify hourly, daily, weekly or monthly)	
11.	How often do you compile a list of missed appointments (specify hourly, daily, weekly or monthly)	
12.	Do you follow up patients who missed appointments?	Yes <input type="checkbox"/> <input type="checkbox"/>
13.	When a patient finally turns up after missing their actual date, how do you handle them? Free text	
	a) Give 3 main reasons why you handle them that way? <i>Free text</i>	

4.2.2 Key Informant Interviews (KIIs) Heuristics Questionnaire

<i>Put an X in the appropriate box</i> , where you do not know or understand, put an X in the D/K box							
Importance of adherence for rebooked visits							
1.	Patients must be given adherence counselling before being ART initiation.	1 Strongly disagree	2 Disagree	3 Undecided	4 Agree	5 Strongly agree	D / K
2.	Adherence counselling is important.	1 Strongly disagree	2 Disagree	3 Undecided	4 Agree	5 Strongly agree	D / K
Gender							
1.	Do you agree that men are more likely to miss their visits than women	1 Strongly disagree	2 Disagree	3 Undecided	4 Agree	5 Strongly agree	D / K
2.	Do you agree that women are more likely to miss their visits than men	1 Strongly disagree	2 Disagree	3 Undecided	4 Agree	5 Strongly agree	D / K
Age – from analysing missing patterns in the registers							
1.	Do you think age directly affect adherence?	1 Strongly disagree	2 Disagree	3 Undecided	4 Agree	5 Strongly agree	D / K
Community Support systems							
1.	Do you feel that adherence support groups will reduce missed appointments	1 Strongly disagree	2 Disagree	3 Undecided	4 Agree	5 Strongly agree	D / K
2.	Mobile art clinics help to reduce the number of defaulters	1 Strongly disagree	2 Disagree	3 Undecided	4 Agree	5 Strongly agree	D / K
3.	Number of clinicians available is an important factor when booking a client.	1 Strongly disagree	2 Disagree	3 Undecided	4 Agree	5 Strongly agree	D / K
4.	Availability of adequate private consultation rooms is key to obtaining client information.	1 Strongly disagree	2 Disagree	3 Undecided	4 Agree	5 Strongly agree	D / K
5.	The size of the waiting affects workload negatively for Clinicians.	1 Strongly disagree	2 Disagree	3 Undecided	4 Agree	5 Strongly agree	D / K
6.	ART clinic should run on specific days of the week and not every day.	1 Strongly disagree	2 Disagree	3 Undecided	4 Agree	5 Strongly agree	D / K
7.	Supply of medicines is a determining factor in booking of patients.	1 Strongly disagree	2 Disagree	3 Undecided	4 Agree	5 Strongly agree	D / K
8.	The location of the client determines ART visits adherence.	1 Strongly disagree	2 Disagree	3 Undecided	4 Agree	5 Strongly agree	D / K
9.	The ART clinic is strictly run according to a policy and some guidelines.	1 Strongly disagree	2 Disagree	3 Undecided	4 Agree	5 Strongly agree	D / K

4.3 Results

This section details the results of the study.

4.3.1 Descriptive Statistics on the demographic data

Table 2: Sample size by Gender

Source: electronic Patient Monitoring System

	Frequency	Percent	Valid Percent	Cumulative Percent
Female	13,620	68.1	68.1	68.1
Male	6,380	31.9	31.9	100.0
Valid Total	20,000	100.0	100.0	

The sample was taken from 20,000 records that were pulled 10,000 from each facility. The 10,000 were specified as the top 10,000 patients who were initiated in the year 2013 and were followed up for treatment outcomes during the first five months of 2014. All the re-booked visits (1,219) from this dataset were extracted for analysis and the analysis follows.

Table 3: Rebooked Visits by Gender

Source: electronic Patient Monitoring System

Gender	Frequency	Percentage	Cumulative
Female	820	67.27	67.27
Male	399	32.73	100.00
Total 	1,219	100.00	

67% of the rebooked visits were women. This follows the picture shown in the main sample which included 13,620 (68%) women. Only 33 men out of every 100 people do seek and access medical attention at these two biggest health facilities in Zimbabwe.

Table 4: Rebooked Visits by Pregnancy

Pregnancy	Frequency	Percentage	Cumulative
Yes	75	6.15	6.15
No	1144	93.85	100.00
Total 	1,219	100.00	

Source: electronic Patient Monitoring System

From the above table, only 75 women are pregnant while the rest are not. Some are males while some are females. Out of the 75, 61 (81%) are from Mpilo while only 14 (19%) were rebooked at Parirenyatwa as shown in table 4 below.

Table 5: Pregnant Status of Rebooked Visits by Facility

Facility Name	Frequency	Percentage	Cumulative
Mpilo Central Hospital	61	81.33	30.93
Parirenyatwa Central Hospital	14	18.67	100.00
Total	75	100.00	

Table 6: Females by pregnant status

Now Pregnant	Frequency	Percentage	Cumulative
No	745	90.85	92.56
Yes	75	9.15	100.00
Total	820	100.00	

9% of women in this sample were pregnant in 2014.

Table 7: Rebooked Visits by Facility

Facility Name	Frequency	Percentage	Cumulative
Mpilo Central Hospital	377	30.93	30.93
Parirenyatwa Central Hospital	842	69.07	100.00
Total	1,219	100.00	

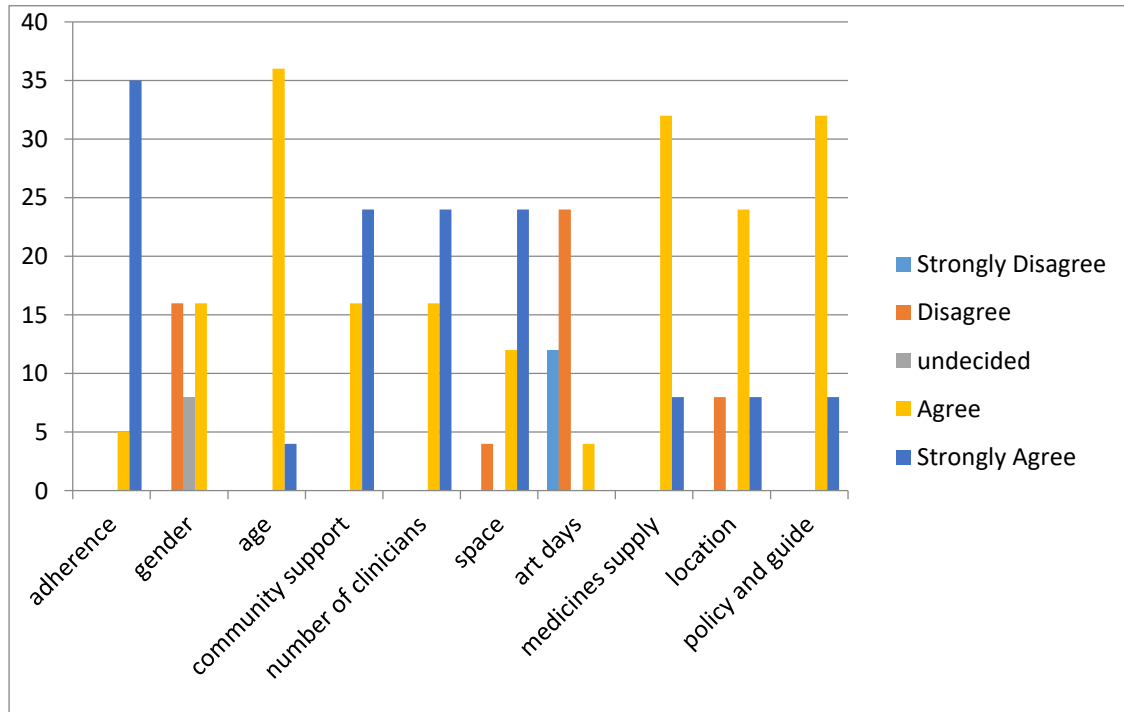
Source: electronic Patient Monitoring System

Mpilo Central Hospital accounted for 31% of all rebooked visits in during this period while the rest were at Parirenyatwa (69%).

4.3.2 Key Informant Interview Results

4.3.2.1 Perception of gender by KIs

Figure 1: Key Informant Interviews Results



From the above figure all the respondents agree that adherence, age, community-based support groups, number of available clinicians, medicines supply, and policies and guidelines all are important factors at play in the OI/ART clinics of both facilities and that they influence programming towards the successful rebooking of defaulting patients. Equal proportions of the respondents are torn in between the gender mainstream and roles that affect their success in rebooking of patients. As much as space and privacy for consultation is a basic right as coined in the Patient Charter, some clinicians do not take it as a factor that affects their successful rebooking and reviewing of patients while the same can be seen from the way the study participants responded in the location or distance of their patients from the health facility.

Table 8: Interviews by Post

Post	Frequency	Percentage	Cumulative
Data clerk	8	20.00	20.00
Manager	18	45.00	65.00
Provider	14	35.00	100.00
Total	40	100.00	

18 health care managers were interviewed while 14 providers and 8 data entry personnel responded to the questionnaires.

Table 9: Crosstab of institution post

Institution	data clerk	manager	provider	Total
Mpilo	4	9	7	20
Pariranyatwa	4	9	7	20
Total	8	18	14	40

Source: electronic Patient Monitoring System

Interview questionnaires were distributed to equal number of respondents in terms of positions held in the institution as shown above.

Table 10: Respondents by gender

Gender	Frequency	Percentage	Cumulative
Female	27	67.50	67.50
Male	13	32.50	100.00
Total	40		
100.00			

Source: electronic Patient Monitoring System

The questionnaires were completed by a total of 40 respondents selected from at random from both institutions. 27 (67.5%) of them were female and 32.5% (13) were males. These came out of a random sample of clinicians and managers on duty at any given day at the facility so the conclusion is that the figures above reflect the gender bias that is there in the health facilities where a majority of the nurses are female. This however did not affect the study as far as the researcher is concerned.

Table 11: Cross tabulation of institution by gender

Institution	female	male	Total
Mpilo	20	0	20
Parirenyatwa	7	13	20
Total	27	13	40

Source: electronic Patient Monitoring System

From the above table it can be seen that 100% of respondents from Mpilo in this study are women while Parirenyatwa has 13 males and 7 females.

Table 12: women's vs men's health seeking behaviour

Do you agree that men are more likely to miss their visits than women?

gender1cat	Frequency	Percentage	Cumulative
Disagree	16	40.00	40.00
Undecided	8	20.00	60.00
Agree	16	40.00	100.00
Total	40	100.00	

Source: electronic Patient Monitoring System

16 out of 40 respondents believe that women have a better health seeking behaviour than men in terms of patient rebookings at the two hospitals, while on the other hand an equal number is not convinced of this fact.

Table 13: men's vs women's health seeking behaviour

Do you agree that women are more likely to miss their visits than men?

gender2cat	Frequency	Percentage	Cumulative
Disagree	32	80.00	80.00
Undecided	8	20.00	100.00
Total	40	100.00	

Source: electronic Patient Monitoring System

From the above figures, the conclusion is that women are not more likely to miss their visits than men and also that the converse is true for men.

Table 14: Year spent at this facility

period	Freq.	Percent	Cum.
<5	11	27.50	27.50
5-10	9	22.50	50.00
>10	20	50.00	100.00
Total	40	100.00	

Source: electronic Patient Monitoring System

The above table shows the overall number of years spent at both facilities by the respondents. 50% (20) clinicians have spent more than 10 years at their respective institutions. Only less than 30% (11) employees have been with these facilities and the rest are between 5 and years.

Table 15: Period by institution

period	Mpilo	Parirenyatwa	Total
<5	4	7	11
5-10	7	2	9
>10	9	11	20
Total	20	20	40

Source: electronic Patient Monitoring System

Out of the two institutions, Parirenyatwa has eleven (11) clinicians who have more than ten year experience at the facility while only have considerable experience between five and ten years. A total of 9 clinicians have over ten years of experience at Mpilo while a good number (seven) have considerable experience at the institution ranging between five to ten years.

Table 16: Years of experience in the health care industry

Period	data clerk	manager	provider	Total
<5	8	0	3	11
5-10	0	2	7	9
>10	0	16	4	20
Total	8	18	14	40

Source: electronic Patient Monitoring System

In the above depiction, it can be noticed that managers (40%) are the most experienced of the clinicians with over 10 years spent in the industry followed by providers and lastly the data entry personnel (20%).

Table 17: Years of experience in the health care industry by gender

Period	female	male	Total
<5	4	7	11
5-10	9	0	9
>10	14	6	20
Total	27	13	40

Source: electronic Patient Monitoring System

It goes without saying that women are the most experienced in this career with 14 (35%) of them past ten years of experience. Only 6 (15%) male officers make it past the ten year mark.

4.3.2.2 Training

Table 18: HIV Counselling Training by Post

HIV Counselling Training	data clerk	manager	provider	Total
no	8	2	3	13
yes	0	16	11	27
Total	8	18	14	40

Source: electronic Patient Monitoring System

From the above graph, it can be seen that the higher the post the more the number of respondents trained in order for them to be able to manage the health facility. This ties in more with the Theory Y tenets which states that employees are equipped and trained for the necessary skills in order to manage without need for close supervision.

Table 19: HIV Counselling Training by Institution

HIV Counselling Training	Mpilo	Pariranyatwa	Total
no	4	9	13
yes	16	11	27
Total	20	20	40

Source: electronic Patient Monitoring System

Of the 27 people who were trained in HIV counselling and testing, 16 are from Mpilo Hospital representing close to 60% while Parirenyatwa is a distant 40% for the same training. Discuss: training equips the health worker with knowledge and skills that will enable them to give enough care to even the defaulting patients to the extent that the defaulters will cease to be defaulters.

4.3.2.3 Patient Booking System

Table 20: Booking System by Type

System Type	Frequency	Percentage	Cumulative
computer based	3	7.50	7.50
paperbased	37	92.50	100.00
Total	40	100.00	

Source: electronic Patient Monitoring System

37 out of 40 users responded that they have a paper-based booking system. A paper based booking system is another source of inefficiency in the whole setup of a health facility. It does not allow updating, entry or retrieval easily hence no user wants to waste a lot of time going through the pages of a book simply to find a booking. In most cases these are not followed and they may result in over or under-booking of visits because of their inefficiencies in this day and age.

Table 21: Booking System Type by Institution

Booking System Type	Mpilo Pariranyatwa		Total
computer based	0	3	3
paperbased	20	17	37
Total	20	20	40

Source: electronic Patient Monitoring System

All respondents at Mpilo were aware that they do not have a computer-based booking system while 3 users are not sure because observations on the ground showed that there is no computer-based booking at the institution. It can be concluded that the booking system at Parirenyatwa is not being used as there are confusion amongst the users over what a booking system is and what for it can take.

Table 22: Booking Reminders

Booking Reminders	Frequency	Percentage	Cumulative
dk	3	7.50	7.50
manually	35	87.50	95.00
non	2	5.00	100.00
Total	40	100.00	

Source: electronic Patient Monitoring System

The researcher observed that booking reminders are by way of manually checking in the paper registers for people who are supposed to attend clinic on a particular day. This is normally done by the Sister In Charge (SIC) of the OI clinic and she then distributes the workload to all the other nurses and doctors present on that day. Part of the explanation of why there are so many rebookings is that there is no electronic reminder system in place. A system that can alert both the facility as well as the patient through email or sms. If a reminder system is in place, clinicians can also find it easy to follow-up and therefore reduce the number of lost-to-care patients.

Table 23: Booking Reminders by Institution

Booking Reminders	Mpilo	Parirenyatwa	Total
dk	0	3	3
manually	18	17	35
non	2	0	2
Total	20	20	40

Source: electronic Patient Monitoring System

Both institutions do get reminders from their manual systems as confirmed by the table above.

Figure 2: Appointment by Institution

Appoint Compile	Mpilo	Parirenyatwa	Total
daily	20	0	20
dk	0	3	3
non	0	2	2
weekly	0	15	15
Total	20	20	40

The above table shows that Mpilo goes through their appointments daily and that way they are able to know early enough that there are some patients who did not attend a day’s clinic. Even though Mpilo staff have put in place a manual system for scheduling and checking a day’s appointments, they do not have resources and means at the moment of contacting the clients either by phone, email or home visits.

Source: electronic Patient Monitoring System

Table 24: Reminder Frequency by Institution

Reminder Frequency	Mpilo	Pariranyatwa	Total
daily	18	0	18
dk	0	3	3
na	2	0	2
randomly	0	2	2
weekly	0	15	15
Total	20	20	40

Source: electronic Patient Monitoring System

The majority of Mpilo Hospital employees (90%) do extract their reminders daily while those from Parirenyatwa (75%) prefer to do it weekly. A fair share of the minority at both institutions do not know about or have no use of reminders. The same applies to the way booking appointments are made through the paper-based system.

4.3.2.4 Patient Follow-up

Table 25: Follow-up frequency

Follow Up	Freq.	Percent	Cum.
dk	3	7.50	7.50
no	15	37.50	12.50
yes	22	100.00	
Total	40	100.00	

Source: electronic Patient Monitoring System

From the data above we gather that only 22 respondents out of 40 said they do actual follow-up of clients while 15 said they do not any follow-up. Patient follow-up is a very important practice in the HIV care practice. It shows the level of care that a facility gives to its clients. Further training might be required for 18 members of staff who comprise of the 15 that do not do patient follow-ups and the other 3 who do not know at all what patient follow-up is all about.

Table 26: Follow-up by Institution

Follow Up	Mpilo	Parirenyatwa	Total
dk	0	3	3
no	0	15	15
yes	20	2	22
Total	20	20	40

Source: electronic Patient Monitoring System

Out of the 22 respondents who said they did some follow-up, 20 are from Mpilo while only 2 are from Parirenyatwa. It can be concluded that at Parirenyatwa there is no follow-up procedure happening hence it is up to the patients to turn up at the facility when necessity strikes them. It also interesting to note that 3 participants do not know anything about follow-up of missing patients.

4.3.2.5 *Handling of Returning Patients*

The following tables are all derived from the questionnaires completed by KIs.

Table 27: Frequency of handling returning patients

How do you handle clients who show up from their missing status?

	Freq.	Percent	Cum.
We offer adherence counselling to the patient, review the patient and rebook them on their original cohort	2	5.00	5.00
I don't know	8	20.00	25.00
We send for counselling and re-book after 1 month	2	5.00	30.00
We rebook for another day	11	27.50	57.50
We rebook for another day determined by the patient's pill count	3	7.50	65.00
We review the patient if missed for less than one month	8	20.00	85.00
We treat the patient like any other	6	15.00	100.00
Total	40	100.00	

Source: Key Informant Interviews

Table 28: Handle Returning Patients by Institution

How do you handle clients who show up from

their missing status?	Mpilo Parirenyatwa		Total
We offer adherence counselling to the patient, review the patient and rebook them on their original cohort	2	0	2
I don't know	4	4	8
We send for counselling and re-book after 1 month	0	2	2
We rebook for another day	0	11	11
We rebook for another day determined by the patient's pill count	0	3	3
We review the patient if missed for less than one month	8	0	8
We treat the patient like any other	6	0	6
Total	20	20	40

Source: Key Informant Interviews

Table 29: Reasons for handling returning patients

whyHandle Cum.		Freq.	Percent
-----+-----			
This is according to our treatmentART guidelines		7	17.50
To avoid clashes and loss of order		5	12.50
To avoid lost to follow up patients		2	5.00
To avoid lost to follow up patients and in order to keep the order of the original cohort		2	5.00
Because most clients give poor reasons for missing, only consider review if reason is compelling or if patient has a serious OI		2	5.00
I don't know		8	20.00
To foster discipline of patients		3	7.50
Because in most cases they present with an OI		5	12.50
We have no resources		2	5.00
Patient must adhere and it is our duty to teach them how.		4	10.00
-----+-----			
Total		40	100.00

Source: Key Informant Interviews

Table 30: Reasons for handling returning patients by institution

whyHandle	Mpilo Pariranyatwa		
Total			
This is according to our treatment ART guidelines	7	0	7
To avoid clashes and loss of order	0	5	5
To avoid lost to follow up patients	2	0	2
To avoid lost to follow up patients and in order to keep the order of the original cohort	2	0	2
Because most clients give poor reasons for missing, only consider review if reason is compelling or if patient has a serious OI	0	2	2
I don't know	4	4	8
To foster discipline of patients	0	3	3
Because in most cases they present with an OI	5	0	5
We have no resources	0	2	2
Patient must adhere and it is our duty to teach them how.	0	4	4
Total	20	20	40

Source: Key Informant Interviews

From the above tables (table 22-25), which captured free-text on the questions asked about how the respondents in each of the two facilities handles patients who return from a missed appointment status, it can be seen that two themes are coming out. All respondents from Mpilo responded in words or language that tells us that they counsel the patient for visit adherence in an effort to get buy in from the patient and then they review the patient before they re-book the patient to their original cohort. The original cohort in this sense refers to a group of patients that are booked to come on a certain day of the week from Monday to Friday.

Responses from Parirenyatwa pointed to the fact that they are more worried about patients keeping their order of bookings more than they are worried about the patients themselves. The dominant theme for Parirenyatwa is that they send the patient for counselling more for

the patient's information than benefit and then they simply rebook the patient on another date which has no relationship to either the patient's condition or consideration of the reasons why they had gone missing so that they can help the patient better. Their counselling seems to be just the ordinary and usual activity which is also divorced from patient care.

Reasons that are given for the way they treat re-booking of patients at Parirenyatwa suggest that patient comes last and procedure first. It is not only a matter of forcing the patient to adhere, the patient must feel it a part of his/her responsibility through proper engagement and personalised counselling. Mpilo respondents' perception of a rebooked visit seems to be that they acknowledge that the lost patient has come back and they holistically take the patient through counselling sessions meant for the patient to gain a deeper understanding and reasons for visit adherence. Lost to follow-up patients pose a serious threat to the community for reasons mentioned earlier like drug resistance and the likelihood of brooding a new strain of the deadly virus, which will be very expensive to manage. Mpilo respondents seem to have received this knowledge and are cautious of how they treat returning clients.

4.3.2.6 Other Heuristics assessment areas

Table 31: Age influences ART adherence

age	Freq.	Percent	Cum.
Agree	40	100.00	100.00
Total	40	100.00	

Source: Key Informant Interviews

All the 40 respondents agree that the age of a person affects their adherence hence the need to use different methods for rebooking different age groups.

Table 32: Community Adherence support Groups (CASG)

Community Adherence Support Groups	Freq.	Percent	Cum.
Agree	40	100.00	100.00
Total	40	100.00	

All the 40 respondents agreed that Community Adherence Support Groups will go a long way towards eliminating missing patient status in the OI/ART system.

Table 33: Mobile ART Clinics

Mobile ART Clinics	Freq.	Percent	Cum.
Agree	40	100.00	100.00
Total	40	100.00	

Source: Key Informant Interviews

Still looking at community facing ART interventions, all the 40 respondents suggested that Mobile ART Clinics will help reduce the number of rebookings since the clinic will be occasionally run from the community

Table 34: Clinicians Available

Clinicians Available	Freq.	Percent	Cum.
Agree	40	100.00	100.00
Total	40	100.00	

Source: Key Informant Interviews

The variable number of clinicians available in the OI/ART clinic is a big factor to consider when it comes to rebookings because all the interviewed clinicians are sensitive to it as depicted above.

Table 35: Consultation Rooms

Consultation Rooms	Freq.	Percent	Cum.
Agree	40	100.00	100.00
Total	40	100.00	

Source: Key Informant Interviews

Private consultation rooms are a requirement through the Patient Charter for patients to feel free and comfortable when receiving medical care especially for HIV/AIDS.

Table 36: Size of waiting Area

Waiting Area	Freq.	Percent	Cum.
Disagree	8	20.00	20.00
Agree	32	80.00	100.00
Total	40	100.00	

Source: Key Informant Interviews

80 % (32) respondents agree to the question that was posed to them about the size of the waiting area. A smaller proportion of clinicians (8%) think the size of the waiting area does not really influence the running of the clinic. The size of the waiting area represents the capacity for clients waiting for service but it also is a source of frustration for both patients and clinicians. Patients because the bigger the waiting area the longer the queue and also the possibility of losing privacy hence and will eventually lead to stigmatisation especially for new patients. This was explained to the researcher by one of the patients who was observed in the waiting area at Parirenyatwa. Clinicians sometimes get discouraged when they see a full waiting area while they know that their numbers cannot cope with the volume of patients presenting themselves.

Table 37: Clinic run on specific days

Clinic Days	Freq.	Percent	Cum.
Disagree	32	80.00	80.00
Agree	8	20.00	100.00
Total	40	100.00	

Source: Key Informant Interviews

During the interview for the heuristics questionnaire, respondents were asked whether the ART clinic should run for specific days in a week to allow other clerical and administrative duties like patient follow-up, booking and data entry to happen. Surprisingly against the researcher’s preconceptions, 80% (32) of the respondents prefer to run the clinic every day of the week except on weekends. Only 20% (8) were agreeable citing the reasons that the country Zimbabwe is on its way out of an HIV high burden country to a situation whereby few cases of new infections and deaths related to HIV will be reported hence there is need for improving the quality of care and increase reporting and surveillance of the disease.

Medicine Supply	Freq.	Percent	Cum.
Agree	40	100.00	100.00
Total	40	100.00	

Source: Key Informant Interviews

All the clinicians interviewed agreed that the supply of medicines will affect rebooked patients with preference given to those patients that are adhering to their visits.

Table 38: Client Location

Location	Freq.	Percent	Cum.
Disagree	8	20.00	20.00
Agree	32	80.00	100.00
Total	40	100.00	

Source: Key Informant Interviews

As shown above, 32 (80%) out of the 40 interviewed personnel think that the further away a client lives from the health facility the more difficult it becomes for them to own their rebooked visits. The remaining 20% does not agree that distance is a prohibiting factor for clients to visit their clinics.

Table 39: Policy and Procedure

Policy	Freq.	Percent	Cum.
Agree	40	100.00	100.00
Total	40	100.00	

Source: Key Informant Interviews

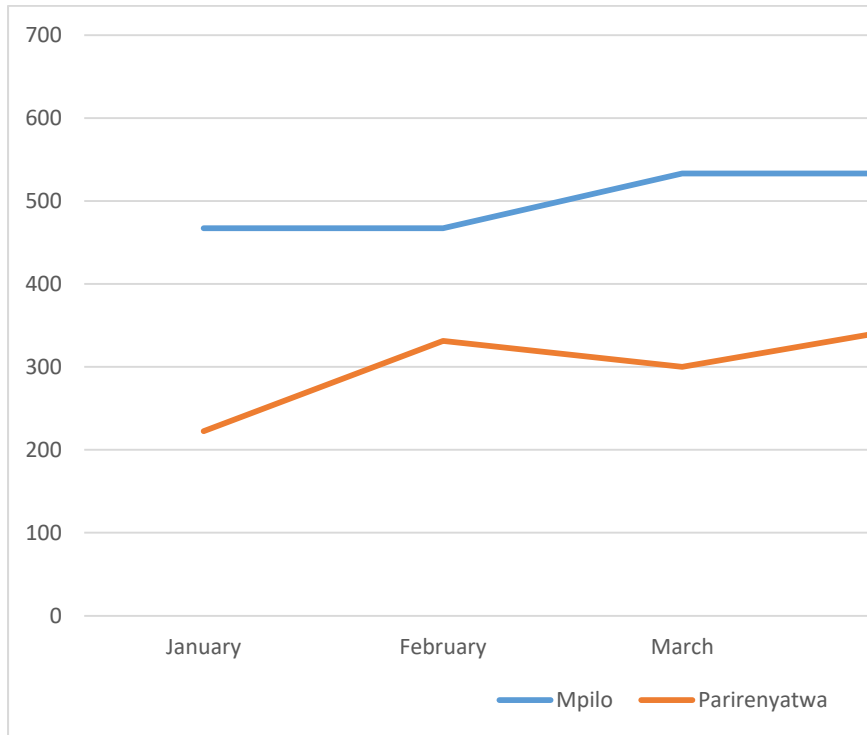
All the respondents as depicted above rely on policies and standard operating procedures in carrying out their day to day duties at the health facilities.

4.4 CD4 Count Measure Among Re-booked Visits (Impact of care)

This section uses CD4 Count (see section 4.1.1) as way to measure the impact and quality of care given to patients at the two different hospitals.

Overall CD4 Count Improvement in rebooked patients

Figure 3: Median CD4 count by facility

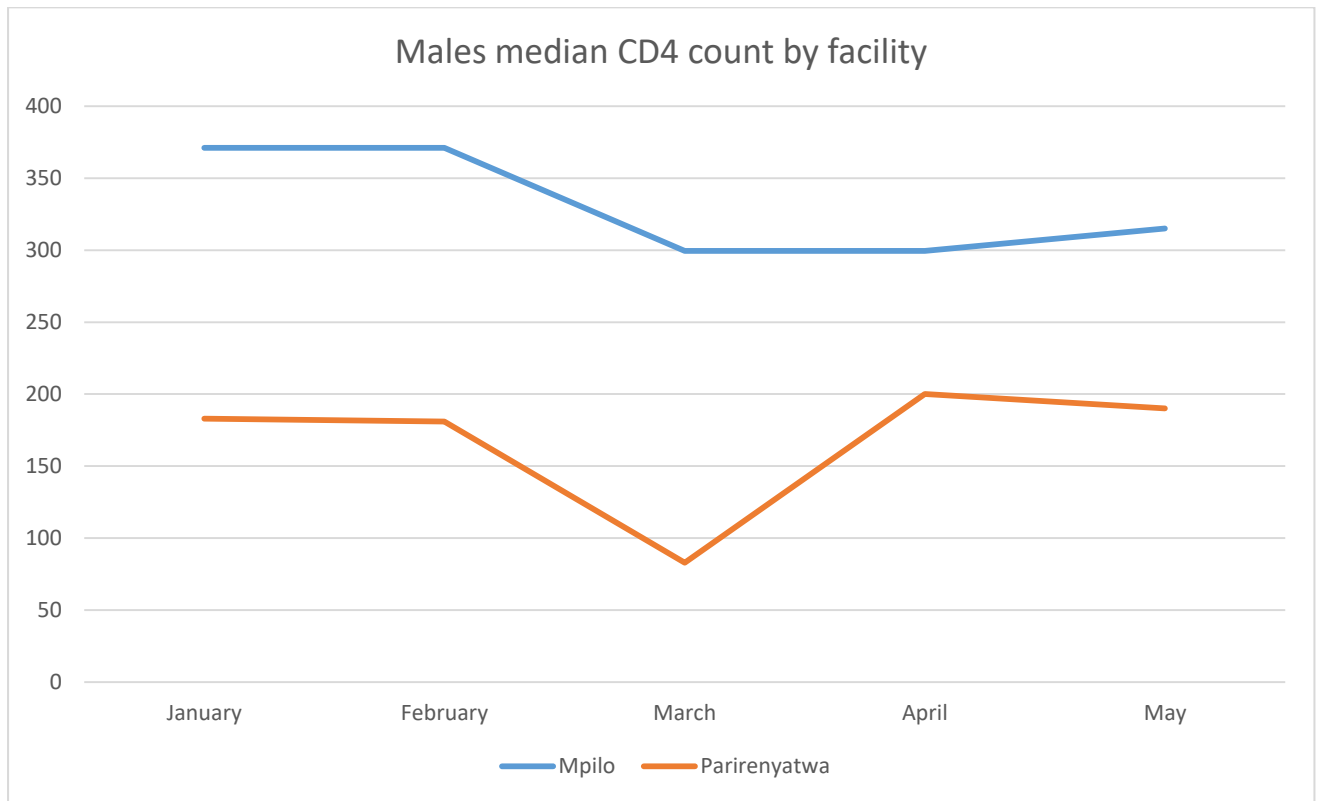


Source: electronic Patient Monitoring System

Figure 2 above shows that Mpilo Hospital has a higher CD4 count among the rebooked patients than Parirenyatwa. Mpilo hospital uses a good system for rebooking defaulting patients and as their overall outcomes are better than Parirenyatwa.

CD4 Count by Gender

Figure 4: Gender by Facility CD4 Count - Males



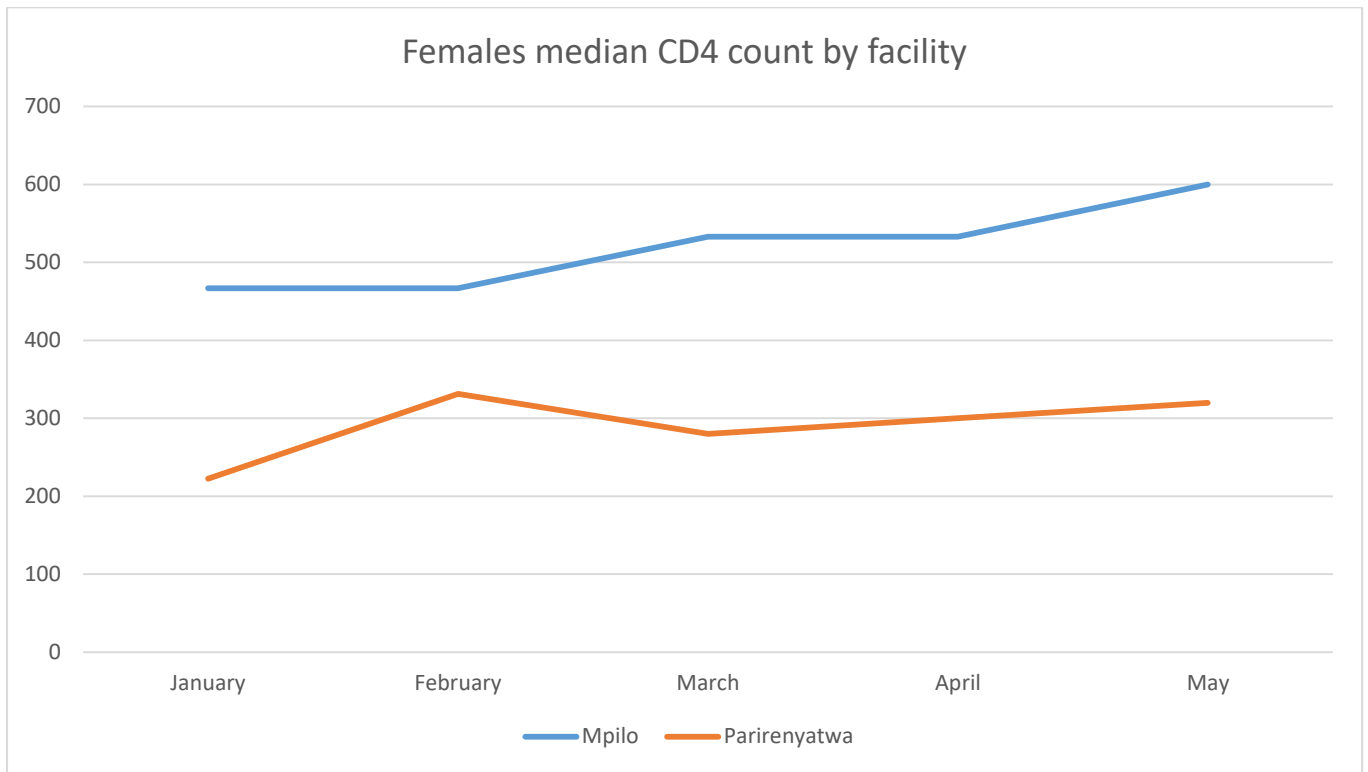
Source: electronic Patient Monitoring System

The above figure shows that rebooked males at Parirenyatwa have poorer CD4 median count as compared to Mpilo males. It can be argued that because of the new guidelines for pregnant mothers, which stipulate that every HIV positive pregnant mother has a right to be put on life-long treatment soon after testing positive, CD4 count for this group would tend to increase gradually and continuously. Pregnant mothers are strictly monitored until the baby stops breast feeding but treatment will continue.

Contrasting this with the normal ART initiation policy which normally takes on average up to three (3) for a person to be put of ARV treatment. Some patients may even spend years before start of therapy because of certain conditions which have to be met first. This situation therefore presents itself with a lot of opportunities for women to be on treatment well ahead of men who never fall pregnant at any point in life! This study has also found out that 16%

(75/377) of all the patients who were rebooked at Mpilo were pregnant. This explains why CD4 count for Mpilo if the above explanation is anything to go by.

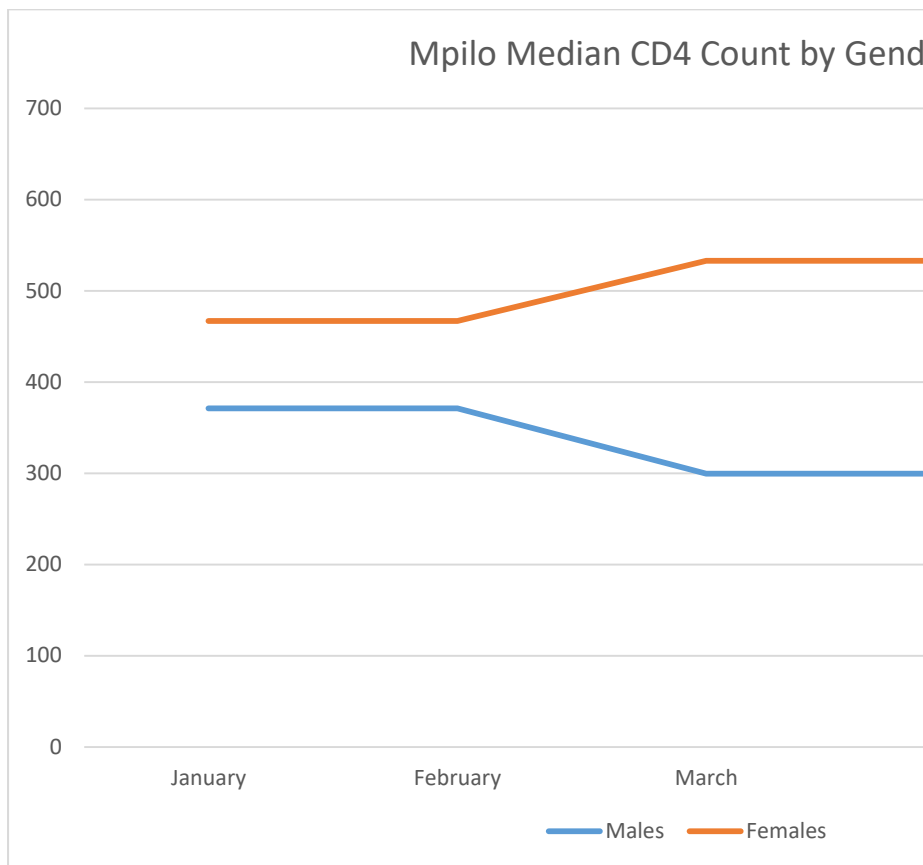
Figure 5: Gender by Facility CD4 Count - Females



Source: electronic Patient Monitoring System

Females at Mpilo Central Hospital show a better improvement to their CD4 Count than their counterparts at Parirenyatwa. Conclusion: This is an indicator of poor quality patient management at Parirenyatwa and this further confirms the null hypothesis that Parirenyatwa Hospital's way of managing rebookings is not the best.

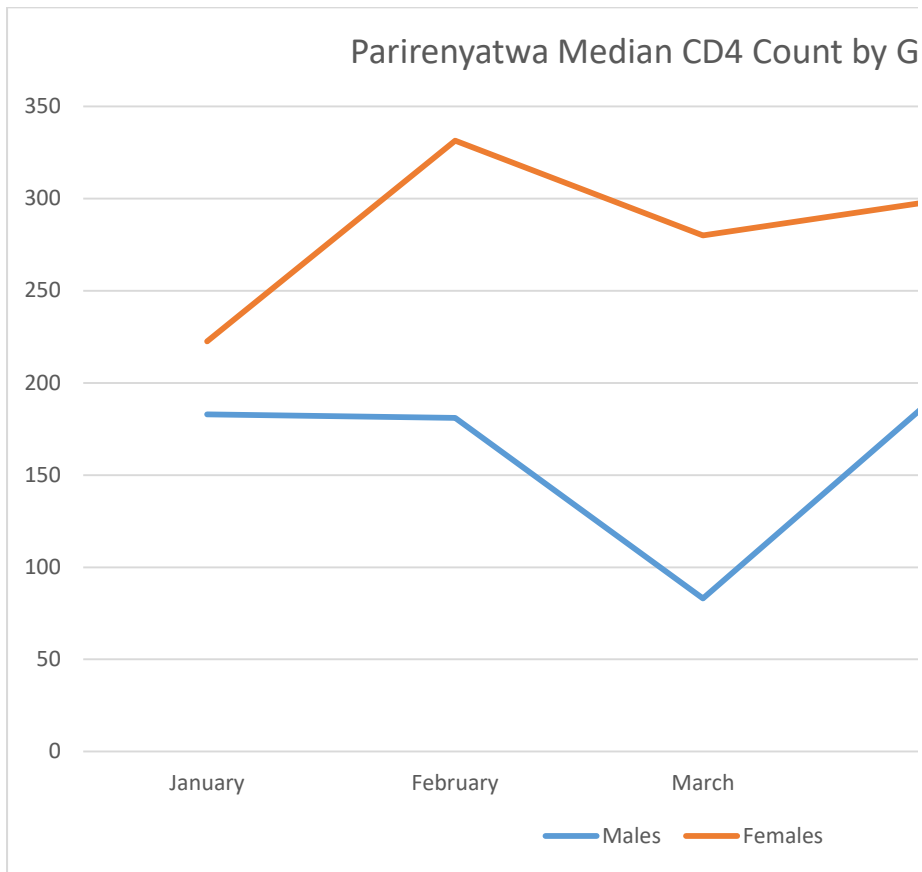
Figure 6: Mpilo CD4 Count by Gender



Source: electronic Patient Monitoring System

Figures 5 and 6 here depict the gender dynamics within the two hospitals themselves. This is an indication that confirms how the issue of gender affects day to day work inside the facilities. Contrary to the spontaneous responses from the KI questionnaires that showed a response from 40% of all the respondents saying they do not agree that they are gender biased in their work on the rebooked visits this graph on the measure of recovery confirms that gender is at play and at both facilities as we see always females are getting better by the day.

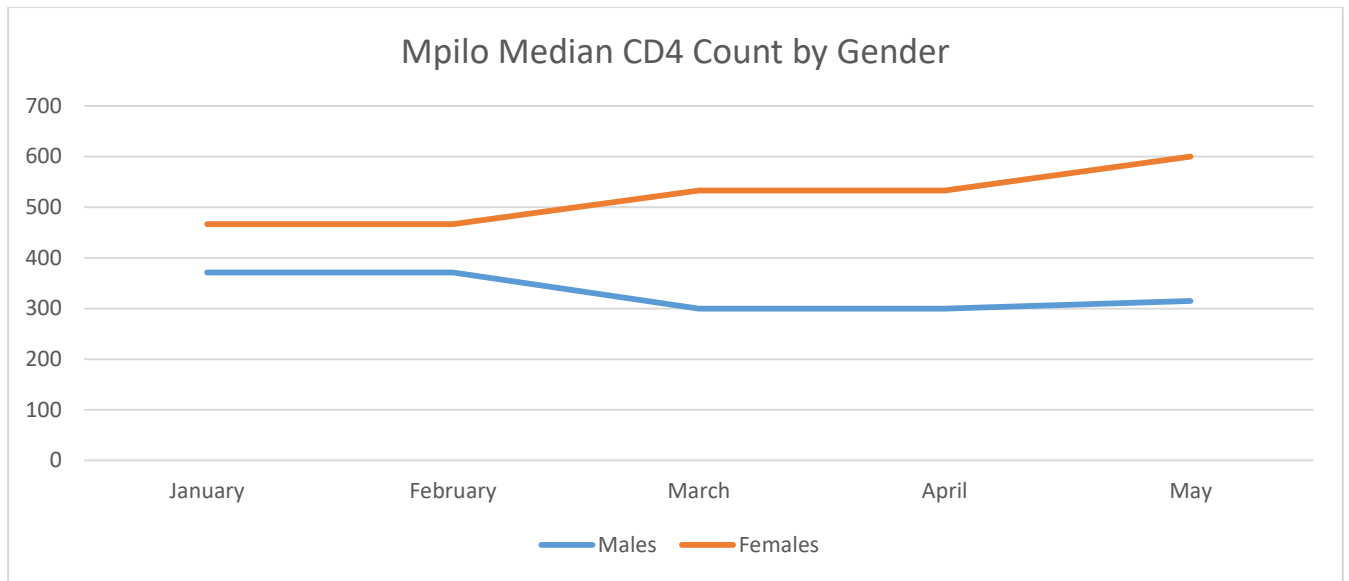
Figure 7: Parirenyatwa CD4 Count by Gender



Source: electronic Patient Monitoring System

Figure 7 and 8 above and below depict a general trend where females are displaying a better health seeking behaviour ahead of their male counterparts. Parirenyatwa shows a huge difference between the two graphs and this could possibly be caused by the effect of a sizeable 6% pregnant women who are in Mpilo. As posited earlier pregnant women tend to receive better and immediate care under the targeted PMTCT programme run by the MoHCC.

Figure 8: Mpilo Median CD4 Count by Gender



Source: electronic Patient Monitoring System

4.5 Discussion

4.5.1 To identify the gaps and barriers in the quality of service in terms of the review dates for patient appointments.

From the above results, gaps that hinder the improvement of care for rebooked visits do exist in the following areas:

- a) Unavailability of electronic system for booking patients, create reminders and for following up patients who are in default in terms of clinic visits for HIV treatment and care. Missed appointments must be compiled and reported daily for escalation.
- b) Poor patient follow-up especially at Parirenyatwa where they are not currently doing any follow-ups to find out why patients are not coming for their visits. Mpilo hospital is doing these follow ups but they do not have resources to do it more effectively like using phone and home visits to trace missed visits for rebooking.

Barriers involved are mainly to do with the male health-seeking behaviour as documented in this study is far below that of women, hence there is a need to target men more for rebooking but not at the expense of women in case the gender bias tilts the other way. It can be argued through the gender mainstreaming theory that since women are an integral part of the human society, their potential has been underestimated but if we look at the results from the two institutions under this study, Mpilo is the better of the two. Therefore a conclusion in this study gender wise is that in the OI/ART clinics of Mpilo and Parirenyatwa, women can do better at rebooking and taking care of clients than men.

The CD4 improvement measurement carried in this research which was using the median due to the nature and presentation of the data showed that there is a remarkable CD4 improvement in all areas for females in all facilities but it also proved that Mpilo Hospital has a better median reading for both males and females as compared to Parirenyatwa.

There were a number of guidelines found in the two facilities including ART Guideline, Adult and Adolescent Counselling Guide, HIV/AIDS Policy of 1999, Patient Charter and overall Standard Operating Procedure (SOP) for Treatment and Care of Patients at each of these facilities. All the Key Informants (KIs) who were interviewed acknowledged the

existence of the above with the SOP being mentioned in all the responses. All clinicians in this study agree that adherence counselling is very important in the OI/ART clinic.

4.5.2 To measure or compare the effectiveness of the re-booking mechanisms employed by both facilities.

Questions answered by this objective are: where do we find more re-bookings and why?
Which of the two methods results in better patients (using either CD4 count or viral load)?
How bookings and re-bookings are made to align with supply of medicines.

From the information gathered in the KII, it can be seen that 100% (60% agree while 40% strongly agree) of the respondents are convinced that they have to align their re-bookings with medicine stock in order to avoid turning patients away or giving them only a few days' medicine. Again from the same interviews, it was gathered that both facilities have some kind of a booking system although it is based on paper tools, which cannot allow automatic reminders and as such the majority of the Clinicians do not find it important to compile a list of missed appointments on a daily basis at Parirenyatwa (100%). Although all the respondents at both facilities are 100% convinced that visits adherence is quite important, there is no effective way to re-book and follow-up the patients as shown by the graph for *Key Informant Interviews Results 1*

CD4 count measure, which was used to assess the effectiveness of the rebooking methods between the two facilities has confirmed that to a large extent and in all areas, Mpilo hospital's method is superior as it yields better CD 4 results for its rebooked visitors.

4.5.3 To measure the sustainability of these two methods. Costs (transport, wasted booking slots which are never re-claimed/re-booked

Parirenyatwa among the two facilities has a bigger number of missed visits and this could mean that the facility is not able to cope up with the missed visits. This leads to a conclusion that the current situation of re-booking of visits does not allow for easier tracking of missed visits due to its paper-based nature. It can also be concluded that Parirenyatwa's way of treating defaulters is contributing to the attrition of patients away as they look for other alternatives as shown in the number of missed visits. Parirenyatwa KII respondents (100%) stated that they do not review patients who come late because they want to foster some kind of discipline among the patients and also that they want to avoid an influx of patients at the Clinic. Mpilo on the other hand shows that the way they review and re-instate a patient's visit

day of the week is both efficient and effective. The results above show that Mpilo Hospital is coping up with all their unplanned patient visits while systematically and efficiently they training the patients to adhere to their assigned day of the week cohort.

Both methods in terms of costs involved are considerably sustainable as most of their Key Informants responded that privacy rooms and or the size of the waiting area are necessary but cannot stop them from seeing patients. The availability of private consultation rooms according to the Clinicians is an important factor in boosting clients' confidence and trust with the clinic. This factor is not necessarily a show stopper but a nice to have as indicated by the observations by the researcher during interviews. In the same vein, the study shows that 70% of respondents do not think the size of the waiting area is a deterrent factor both to the clients and to them as Clinicians.

Training on the other hand is required especially for Parirenyatwa staff so that they learn better ways of managing their patients from other facilities and implementers who share the same profile of patients with them. An example in this case is Mpilo Hospital. In one of the questionnaires, a Medical Doctor at Parirenyatwa responded that he did not receive any special training to be able to manage patients who are on the ART program, rather he relies on monthly process reviews and feedback meetings that are carried out at the hospital.

At these meetings, said the Medical Doctor, they get to learn about new trends in their program and from consultant Medical Personnel who are invited each time they have these meetings to give out lectures and share results of surveys and studies done elsewhere. At both facilities, this study found out that a Clinician only requires basic training in order to be able to work in the OI section of the Hospital. This is indicated above (see section 4.3.2.2) by the fact that not all of the officers in this area went through specialised training in order to be able to run the clinic. Further investigation will be needed though, in order to ascertain that lack of training is not the main reason why patient outcomes (CD4) are below Mpilo Hospital.

During the interviews with KII, one senior personnel at Mpilo indicated that she is the one in charge of training and she has a Trainer of Trainer (TOT) status so she can train anyone at any time and at very little cost in terms of time. By and large, it can be safely concluded that with minor improvements in the simulation and modelling of booking of clients and the introduction of electronic systems, this system of re-booking of patients is sustainable for both facilities.

4.5.4 To establish if gender affects the success or failure of either re-booking methods for the two health facilities.

This study also set out to find out about gender mainstreaming in the medical field through asking a direct question from the respondents about their perception of gender at work. This question was further queried against the data that was abstracted for analysis. Looking at the figures of patients who were randomly taken for this study, more than 60% are women and only about 40% are males. With particular reference to Zimbabwe because of its national PMTCT programme, as from 2013 onwards, pregnant women could access ART regardless of their CD4 count levels, whereas males and non-pregnant women only became eligible at CD4 count of ≤ 200 cells/ mm^3 initially then ≤ 350 cells/ mm^3 (Zimbabwe demographic Health Survey (ZDHS), 2010/11) and now ≤ 500 cells/ mm^3 (Guidelines for Antiretroviral Therapy for the Prevention and Treatment of HIV in Zimbabwe, 2013). In this study sample, a significant proportion (6.2%) of females was pregnant when they initiated therapy. However, in other studies the PMTCT programme was not responsible for higher proportions of females initiating therapy (Pirkle et al., 2011).

This also supports the idea that women indeed do have a better health seeking behaviour than men (Johnson, 2012) when considering rebookings done at Mpilo and Parirenyatwa in the first half of 2014. The gender question was the only variable in the KII that showed significant variation of all the questions asked in a heuristic questionnaire and is shown above. 20% of the respondents were undecided on the gender perception while the remaining 80% was split in half between those who agreed and those who disagreed. From this data we can neither say men are more likely to miss their visits than women nor can we say women miss their

appointments more than men. But in another way we can also say that the questionnaire was biased because 68% (27) of the respondents were female and most of them were from one institution (Mpilo).

Basing also on the major policy shifts towards giving access to medical care to women and other vulnerable groups of society by our government (Ministry of Health and Child Care National PMTCT Policy for Option B+ (2013), ZIMASSET (2013), Zimbabwe Millennium Development Goals, Constitution of Zimbabwe, International Declaration of Human Rights to mention a few), more access to care is given to women at both hospitals. Mpilo however has pregnant women accounting for 16% of their rebooked visits while Parirenyatwa has barely 2% pregnant women on their rebooked visits. In addition data presented in this study is largely skewed towards women in terms of their superior health-seeking behaviour. It can also be argued that since these facilities do not charge fees for the prescriptions and medicines given, they become a target for the vulnerable and feminine gender. Masculinity in its nature shuns away from easily gotten positions in society hence the same fact that this service runs for free might actually chase away most men. Gender therefore to a limited but evident extent do affect rebooking patterns at the two health care facilities.

5 Chapter 5: Recommendations and Conclusion

5.1 Conclusion

5.1.1 Validate the appropriateness of the two methods of re-booking missed appointments

Parirenyatwa OI/ART clinic's rebooking procedure as stipulated by: 1) their best practices as a centre of ART excellence and 2) by a Standard Operating Procedure (SOP) states that a clinician will not review a patient who comes on a wrong date rather they give the patient a standard two (2) weeks' previously prescribed medicine supply and book the patient on another available date in the near future.

Mpilo OI/ART clinic's rebooking procedure as stipulated mainly by: 1) their best practices as a centre of ART excellence, 2) by a Standard Operating Procedure (SOP) states and 3) the Zimbabwe Patient Charter and other policies in the Ministry of Health and Child Care states that when a patient comes on a wrong date the clinician available counsels the patient for adherence, reviews the patient and book them on their originally slotted day of the week cohort so as to balance their weekly workload.

The two methods are primarily different in the sense that at Mpilo, they go through counselling sessions with the patient in order to make the patient understand and appreciate the need to adhere to appointed visits while the clinician takes time to understand the psycho-social environment surrounding the patient and which caused the defaulting to take place. At Parirenyatwa the patient confirms their previous prescription with a clinician and straight away walks to the pharmacy to collect the prescribed two-week supply of medicine. In the meantime a rebooking is placed according to availability of slots in the near future for a patient to be seen (reviewed) and counselled for adherence.

By doing it this way at Mpilo, the purpose is to benefit the patient and not the care giver as a primary objective. Other clinics and centres of OI/ART excellence like the Newlands Clinic¹⁰ shares the same feeling and they think that most patients who are late on appointments do not adhere even when it comes to pill count, hence the patient has a deep-

¹⁰ Newlands Clinic is one of the flagship private institutions and HIV/AIDS care centre of excellence run by Swiss AIDS Care International (SACI) in Zimbabwe. The facility is situated in the Newlands suburb of Harare, Zimbabwe

seated problem which needs the clinician's urgent attention. Mpilo also has it documented that adherence counselling must happen first then a prescription is issued to the patient. Management at Mpilo also thinks that some patients miss their appointments because they might not be feeling well; extrapolating from the fact that the patient is with a disease anyway.

Parirenyatwa best practices explained their rebooking method as not meant to punish these patients but to try to instil behaviour change and a disciplined health-seeking behaviour. A poor run of results in one of the Drug Resistance Early Warning Indicator (DREWI) surveys in the indicator called "on time pill pickup" informed this idea so that the institution can perform better in the next survey of a similar nature. Experience from senior management has informed them that patients give poor, unsupported and monotonous reasons for not coming to the clinic on time like; "they had travelled for a funeral".

From the results and arguments presented in this study, it can be deduced that McGregor's Theory X suites very well to the way Parirenyatwa is responding to issues to do with rebooking of patients. The position of this thesis from the beginning has been that defaulting clients will always be found and as such public health facilities must manage this occurrence instead of trying to stop from happening. Parirenyatwa is trying to stop patients from missing their visits but they have no control over many factors like where the clients come from, what they eat, their level of income and also their religious beliefs. In short Parirenyatwa is aiming for utopian situation which might never come. The level of control at Parirenyatwa OI/ART clinic resembles a working environment under McGregor's Theory X in my view. This environment implies that workers are not innovators and they simply have to work with strict regulations and laid down procedures. There is neither room nor economy for flexibility in such an environment. Looking primarily at the proxy measure of impact for two facilities; the CD4 count improvement with time; the system at Parirenyatwa falls below that one at Mpilo, all factors being equal. Parirenyatwa also accounts for close to 70% (842) of the rebooked visits out of missed appointments, which tells us that the clinic is not running efficiently if compared to Mpilo which contributed only 30% (377) missed appointments during the same period and from a similar number of bookings (10,000). Therefore Parirenyatwa is recommended to revise this method in order to adapt to both policy and generally accepted practice in the industry.

Meanwhile in concluding, Mpilo Central Hospital has managed to maintain lower rebooking figures mainly due to efficiencies in the way they treat patients who are both in default and those who are adhering well. McGregor's Theory Y can be retroductively used to try and explain and understand the positive outcomes of working in an enabling and empowering environment where innovation and realistic ideas are implemented in the work environment. New models are allowed to come in a typical Theory Y situation. The method at Mpilo can be reproduced at other facilities including at Parirenyatwa because it has proven to make patients better in terms of their CD4 outcomes as well as in terms of reduced patient rebooking pressure and attracting employees to stay in their positions for longer periods which is why this method is also sustainable. It enables clinicians to innovate whilst they engage with the clients. However efficient, the method at Mpilo and also at Parirenyatwa have continued to champion good health for women at the expense of men in terms of gender balance. Both methods need to implement measures to attract men to come and get their services in a safe, secure and enabling environment as is their right per the Zimbabwe Patient Charter.

This study has successfully proven that rebooking methods at both facilities of study are biased towards women (primarily through the PMTCT programme) and has added another subject in the gender mainstreaming realm, which will need solutions soon enough to save men in Zimbabwe from the scourge of HIV/AIDS. Another interesting characteristic which comes out clearly in this study is that women have better health seeking behaviours than men as represented in the non-pregnant population where women are still more than men in the study population. This concurs with findings from studies elsewhere and reports where higher proportions of eligible females are on ART compared to males (Johnson, 2012, WHO/UNAIDS/UNICEF, 2011). In other studies in Africa, being male was also associated with lower chances of initiating or accessing therapy (Ingle et al., 2010a, Msellati et al., 2003).

5.2 Recommend any policy and programmatic improvements based on the findings of the study for future programming on reducing the number of defaulting patients

This study managed to investigate some of the suspicions and unanswered questions presented to the researcher but more still needs to be done along areas of gender mainstreaming, staff motivation, simulation and modelling and Distributed Artificial Intelligence (DAI) in order to find a lasting solution for the problem of missed visits and the way patients are followed up and how they are eventually handled when they finally present at the health facility at Mpilo and Parirenyatwa.

5.2.1 Systems and modelling approach

Adoption of a proper appointment system and flexible management of clinicians scheduling may go a long way towards achieving decreased waiting time and avoid client frustration due to prolonged queuing. According to the queuing theory, a person loses patience and sometimes tamper the longer they wait and queue in order to access a service. Applying this theory to patients queuing for medical attention will likely result in very emotional decisions like a person giving up on a visit and dreading to visit the same facility again, therefore a good system must book and rebook patients in an orderly way and must incorporate reminders so that patients can be reminded of their appointments and they will come just in time to see a doctor and collect their medicines and go back to their economic employs.

The pharmacy supply chain can also adopt the DAI in modelling their logistics around the supply of medicines so that clinical staff won't have to limit the number of clients because of a constraint in the supply of drugs/medicines. Just In Time (JIT) systems can also be modelled based on the previous episode's pharmacy dispensing patterns. An episode can be a daily, weekly, monthly or quarterly cycle of pharmacy dispensing practices.

5.2.2 Patient-centered care

The main recommendation is that the facility management at Parirenyatwa needs to urgently redress issues that have bearings on the rights of the patient as stipulated in the Patient Charter of Zimbabwe. These are the areas where the researcher feels makes their rebooking system ineffective and some of them are: proper training of health services providers (nurses and doctors) in HIV/AIDS case management as well as counselling, begin to embrace technology for use in reminding clinicians of their daily diaries, scheduling of appointments, following up missed visits and managing well those patients that would have at the facility.

These areas, if addressed will result in the institution offering what is called patient-centered care; which is an approach that puts patients first in any health facility. The term simply means that patients' "realities and constraints" are taken into consideration, and healthcare will be adapted to these realities. By and large the flexibility of the healthcare system is a vital factor in nurturing a patient-centered approach to care.

Some of the approaches to consider in order to have patient centred systems are:

- ▶ Changing clinic opening hours to suit the clients. Such models can take the form of; early morning clinics so that patients can drop by on their way to work, and late night clinics for key population groups like commercial sex workers.
- ▶ Revising of their counselling procedure as a way of helping the patient and not as a procedure that must be followed by defaulting patients.
- ▶ Listening to the pertinent problems faced by their clients and working out practical and realistic solutions or workarounds together. This is normally done during clinical consultations and or counselling sessions.
- ▶ Allowing patients to have a three- or six-month medicine supply of their daily ARV drugs instead of the usual one-month or two-week for visitors supply. This reduces the burden of time and money involved in coming to the clinic to picking up the medicines
- ▶ Encourage clients to form peer support groups for adherence, pill pickup and distribution

5.2.3 Gender

Whilst the PMTCT program is very good in the prevention of the transmittal of HIV virus to the unborn or breast-feeding baby, there must be a programme which also targets men in their own masculine domain and their employs. It is out of scope of this study to prescribe which programmes but the researcher feels that with little further work in this area, HIV/AIDS will be eliminated in both men and women at the same rate and time. The recruitment and training policies of the government of Zimbabwe also needs to encourage the enrolment of men in the nursing fraternity so that it tries to balance the gender ratios which are currently tipped in favour of women as indicated by the participation of 20 out of 20 female workers at Mpilo Central Hospital.

Both these centres of excellence must also consider running mobile clinics and encourage the formation of community adherence groups or designated times and places for collecting drugs in their communities. This will result in saving of money for transportation to and from the facilities yet empowering the patients by making them participate actively in the treatment process. Workload for clinicians will be less as community lay persons become involved with minimal training to run these community-based initiatives on their own. Visits to the health facility will only be on need, when a client needs to see a doctor or when he/she has developed a new Opportunistic Infection (OI).

5.2.4 Capacity building

Parirenyatwa and Mpilo Hospitals must keep on improving the way they deal with rebooked visits even though they already hold the status of centres of excellence. In order to do that they need a strong workforce which is well capacitated to offer the services that they say they offer. Because of the need to mass-train a group of clinicians, a local trainer must be identified as a TOT Leader for in-service and on-the-go training.

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