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UNIVERSITY OF THE WITWATERSRAND

SCHOOL OF PUBLIC HEALTH

ANALYSIS OF ACCEPTABILITY OF HIV, TB, AND MATERNAL HEALTH SERVICES:

A CASE STUDY OF A JOHANNESBURG SUB-DISTRICT, SOUTH AFRICA.

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DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF REQUIREMENTS FOR

A MASTER OF PUBLIC HEALTH (MPH) IN HEALTH SYSTEM AND POLICY (HSP).

Supervised by:

Prof John Eyles

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31 August 2016

DECLARATION

I, BUCYIBARUTA Joy Blaise, declare that this research report is entirely my own work. It is being submitted for the Master's Degree in Public Health (MPH)-Health System and Policy (HSP) at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other university.

……

25TH NOVEMBER, 2016 Place: Johannesburg

ABSTRACT

Background: Access to HIV/AIDS, tuberculosis (TB) and maternal health (MH) services in developing countries, including South Africa, remains inadequate and inequitable as cited by some authors including Harris et al. (2011) as well as Silal et al. (2012). The concept of access to health services has evolved significantly over the past years to recognise three dimensions: availability, affordability and acceptability, as put forward by McIntyre et al. (2009). Nevertheless, most published studies on access to HIV, TB and maternal health services have focussed on availability and affordability, leaving acceptability neglected and poorly conceptualized.

Objectives: This study aimed at developing an acceptability index to identify and explore factors influencing acceptability of health services using the experiences of patients attending public HIV, TB and Maternal Health care in a sub-district of Johannesburg between 2008 and 2010.

Design: Mixed methods were used to analyse secondary data collected as part of the Researching Equity in Access to Health Care (REACH) study. The analysis was guided by a conceptual framework of acceptability comprising three elements - provider, service and community – as suggested by Lucy Gilson (2007). STATA was used for descriptive and inferential analysis of quantitative data. Unit weighted composite scores were used to develop acceptability indices. The p value <0.05 was considered statistically significant. The in-depth interview transcripts were analysed thematically using 'acceptability themes' obtained deductively and inductively. The quantitative and qualitative findings were triangulated during discussion of the results.

Results: This study analysed 987 patients' exit interviews, clinical records, self-reporting and 15 in-depth interviews. The results showed that only 23.4% of patients seeking HIV services experienced high overall acceptability. In contrast, overall acceptability was high for most users of the TB (97.3%) and MH (90.1%) tracers. Provider acceptability was consistently high across all the tracers at 97.6% (HIV) 96.6% (TB) and 96.4% (MH). Service acceptability was high only for TB (70.1%). Community acceptability was high for both TB (83.6%) and MH (96.8%) tracers. Patients aged over 40 years were 1.7 times more likely to have HIV-service high acceptability than those aged 40 years and below (p=0.026). The community acceptability decreased by 0.6 unit (p= 0. 003), while the MH-overall acceptability decrease by 0.1 units (p=0.045) when age increased by 1 unit. Male patients were 1.9 times more likely to have HIV-service high acceptability (p=0.023), but 2.5 times less likely to have high community acceptability than female patients (p = 0.029). The individuals from a middle socio-economic class were 26.4 times more likely to have HIV-provider high acceptability (p=0.024), and 7.4 times more likely to have MH-provider high acceptability (p= 0.034) than their poorer counterparts. Staying with three or more adults in the household was associated with high community acceptability for both HIV and MH tracers.

Limitations: Lack of control over the questionnaire design, data collection process (secondary data analysis), missing values such as some patients did not have records like CD4 count, VL, ART-support group (for ART service), smear culture results, missing clinical visits, missing taking TB tablets (for TB service), HIV status, Type of delivery, booking status (for MH service) and out-dated data in view of rapid changing policies around HIV, TB and MH services were important barriers.

Conclusion: Analysis of different elements of acceptability is necessary to gain better understanding of, and feed evidence into policy for, improving health service acceptability. Various demographic, socio-economic and clinical factors may affect different elements of acceptability. This study noted high overall acceptability of TB and MH services as opposed to low acceptability of ART. This low acceptability of ART could be explained partly by HIV stigma at the time of REACH data collection -though since then the stigma has significantly decreased Further studies integrating all elements of acceptability and recognising the multiple aspects of each element are needed to provide strong evidence to guide health policies and interventions to improve the acceptability of health services.

DEDICATION

To God Almighty for His amazing grace.

&

To Clementine (my wife), Cedric and Emmanuel (my sons) for being there during hard time.

ACKNOWLEDGEMENTS

I am very grateful to God who enabled me to achieve this important milestone in my life. His grace and mercy have accompanied me throughout my studies including this research.

Although this report is my personal product, I would like to thank every individual and institution that directly or indirectly contributed to the success of this thesis.

I am especially indebted to Prof John Eyles, Dr Bronwyn Harris and Ms Kafayat Oboirien who accepted to supervise this work. I highly much appreciate the timely comments, suggestions and corrections they provided to complete this research on time. They have been indeed more than just supervisors but true teachers and mentors. It was indeed an honour and privilege for me to be supervised by them.

Special thanks to Dr Duane Blaauw and Dr Gaetan Kabera for sharing their statistical skills and to Ms Gafieda Pylman as well as Mr Ben Ngyende for proof-reading this report. Their valuable time contributed enormously to the success of this thesis.

I would like to express also my sincere gratitude to the Centre of Health Policy (CHP) together with South Africa, National Research Foundation (NRF) for giving me a bursary which allowed me to complete my studies and conduct this research without much financial constraints. My special thanks go to Prof Jane Goudge and all staff of CHP for being accommodative and understanding during the course of my studies. Prof Nicola Christofides and all staff of MPH program are as well acknowledged for their valuable input during early stages of this research process.

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LIST OF ABBREVIATIONS

AFB: Acid-Fast Bacillus

ANC: Antenatal care.

aOR: Adjusted Odds Ratio

ART: Antiretroviral therapy

CEOC: Comprehensive Essential Obstetric Care

CHP: Centre for Health Policy

CI: Confidence Interval

DVD: Digital Video Disc

HHH: Head of the household

HIV/AIDS: Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome

HIV: Human Immunodeficiency Virus

MCA: Multiple Correspondence Analyses

MH: Maternal Health

NDOH: National Department of Health

OR: Odds Ratio

p: P-value

PCA: Principal Component Analysis

PHC: Primary healthcare

PPS: Probability Proportional to Size

REACH: Researching Equity in Access to Health Care

SES: Socioeconomic status

TB: Tuberculosis

UNAIDS: United Nations Programme on HIV/AIDS

UNICEF: United Nations Children's Emergency Fund

WHO: World Health Organization

WITS: University of the Witwatersrand

LIST OF DEFINITIONS

- **Maternal mortality rate (MMR):** is defined as the annual number of female deaths per 100,000 women of reproductive age i.e between 15 to 49 years -from WHO, Maternal Mortality: Fact sheet N^0 348 (2014).
- **Nulliparous woman:** is defined as a woman who has not given birth previously (regardless of outcome), while a primiparous woman, a woman who has given birth once and multiparous woman, the one who has given birth more than once -from Creinin and colleagues (2009).
- **Smear-negative pulmonary TB:** is defined as at least two sputum specimens at the start of treatment are negative for Acid-Fast Bacillus (AFB) in countries with a functional external quality assurance system, where the workload is very high and human resources are limited from WHO: TB diagnostics and laboratory strengthening (2007), and the decision to initiate Tb therapy is based on clinical-including HIV positive status- or radiological criteria-from WHO: Treatment of Tuberculosis Guideline (2010).
- **Smear-positive pulmonary TB:** is defined as the presence of at least one AFB in at least one sputum sample in countries with a well-functioning external quality assurance system - from WHO: TB diagnostics and laboratory strengthening (2007).
- **Triangulation**: is the process of enhancing the accuracy of study findings by corroborating evidence from different sources, including, as in this study, by mixing qualitative and quantitative methods as put forward by Creswell (2014).

Tracer: In Health policy and system reserach, "tracer"is referred as a selected health programme to be analysed to get insight about health policy and system dynamics -from Allience for Health Policy and System Research (2007).

CHAPTER.I. INTRODUCTION

1.1. BACKGROUND

To date, deaths from the human immunodeficiency virus and acquired immune deficiency syndrome (HIV/AIDS), tuberculosis (TB) and maternity-related complications remain a major concern globally (1-3). Most HIV/AIDS, TB and maternal deaths occur in Sub-Saharan Africa (1-5). Despite considerable financing and innovative strategies to improve access to these services, much more still needs to be done. A number of studies show that many people are still facing inadequate access to health services in developing countries (6-11). Those counties, including South Africa have been criticized to have inequitable Health care services (11-14)Those inequities are related to gender, education level, socio-economic status and race among others (11-13). This situation negatively affects access to health care, with women, black people, those with less or no-education and those who live in informal urban settlements, as well as those who live in rural areas being the most affected (12-14).

Since the 1970s, the concept of access to health services has received a lot of attention in health policy debates (6). Access to health services can be defined as the provision of adequate and non-discriminatory health care to patients regardless their different background (15, 16). It requires equitable health policies and systems with adequate interactions with health provider to improve the patients' health status (15, 16). Nevertheless, the definition of "access to health care" remains complex (17).

To unfold the complexity around "access to health care definition", some authors suggest breaking "access" into a number of dimensions (18-20). For example five dimensions (acceptability, accessibility, accommodation, availability and affordability) were suggested by Penchansky and Thomas in 1981 (19). More recently, three dimensions (affordability, availability and acceptability) were proposed by McIntyre et al. in 2009 (20). This study draws, among other literature, on McIntyre et al.'s conceptual framework on access to health services (Figure1). The latter considers access to health services as a triangular-dimensional concept; with the dimensions of availability (physical access), affordability (financial access) and the acceptability (cultural access)(20). The same conceptual framework was used in the Researching Equity in Access to Health Care (REACH) study (20). The present study (MPH) is a secondary analysis of REACH data project.

The figure 1 depicts the conceptual framework on access developed by McIntyre et al

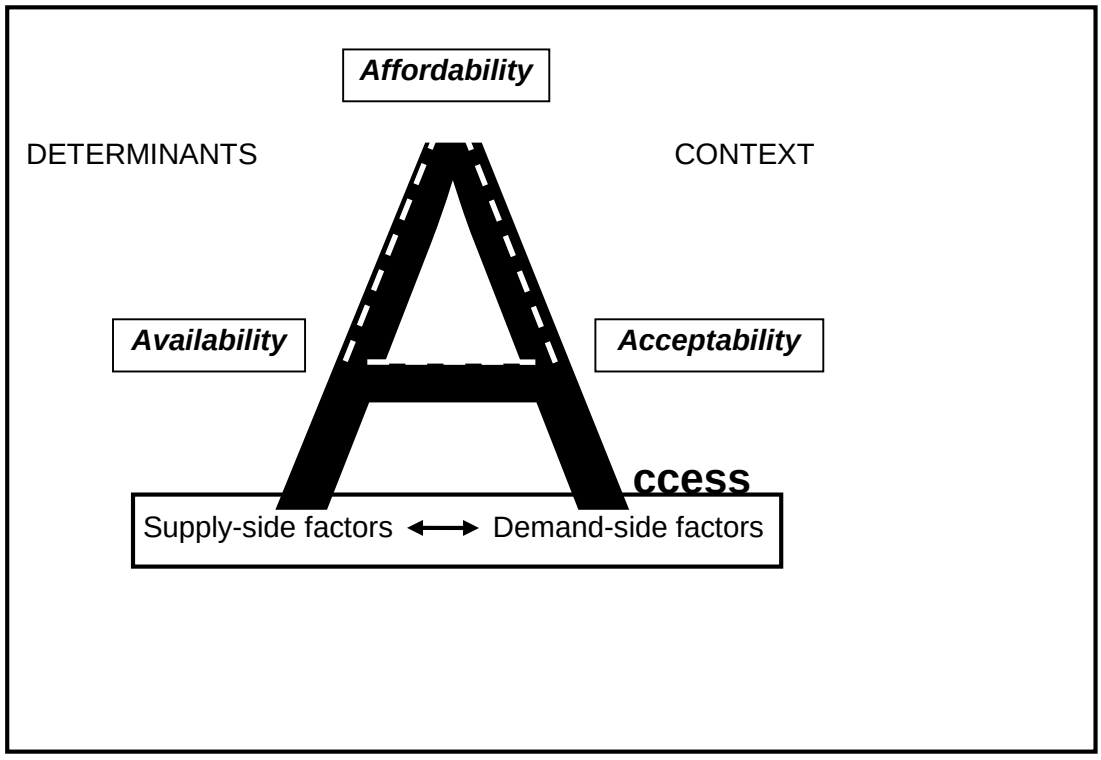


Figure 1-The conceptual framework on access developed by McIntyre et al (20)

1.2. LITERATURE REVIEW

This section seeks to present the global burden of HIV, TB and maternal deaths including the South African context. It also aims at defining key concepts around acceptability of health services. Finally, it finally pursues at identifying a gap in existing literature on acceptability of health services.

At a global level, HIV, TB and maternal deaths still represent a major challenge to public health (1-5). As of December 2015, an estimate of 36.7 million of people were living with HIV worldwide (21). In 2015, approximately 10.4 million people were estimated to have contracted TB (4). From them, around 1.8 million died from the disease including 0.4 million (22%) of deaths related to HIV/AIDS (4). In 2014, about 830 women died on a daily basis from preventable causes related to pregnancy and childbirth (5). Growing evidence recognises both HIV and TB as the main non-pregnancy related causes of maternal deaths (3-5, 21-24). About 50% of all HIV-related TB deaths that occurred globally in 2013, were among pregnant women (23). It is estimated that the maternal mortality rate is up to 10 times higher in HIV positive women than those who are HIV negative (23). According to WHO, TB increases the risk of maternal death by 300% in pregnant women living with HIV/AIDS (23). Furthermore, studies emphasise gender inequities as a key driver of HIV/AIDS, with women bearing the brunt of the epidemic (7, 25). South Africa is one of the countries affected, currently having the largest HIV treatment programme in the world (9). In 2014, WHO reported that about 450,000 people contracted active TB in South Africa , and 61% of them had both HIV and TB (10). It has also been reported that the maternal mortality

rate (MMR) had declined from 189.5 per 100 000 births in 2009 to 132.9 per 100 000 births in 2012/13 (11, 26). This decline in MMR gives a sense of optimism (27). However, non-pregnant related infections were common causes of maternal mortality, accounting for 40% of all maternal deaths. TB is the single most common opportunistic infection causing maternal death among HIV positive women in South Africa(27). Despite the decline in MMR, it is still too high to meet international commitment to bring down the MMR to 38 per 100 000 births at the end of 2016 (28). In addition, the MMR it has been described as unacceptably high in South Africa (29).

Some authors have argued that the high burden of chronic diseases, such as HIV and TB as well as maternal deaths, in South Africa might be explained by unacceptable health service delivery (12, 13). Indeed, it has been shown that unproductive, negative interactions between health providers and patients in South African public facilities represent a main source of mistrust (14, 30, 31). In some cases, disrespectful interactions with providers have resulted in patients doubting their treatment efficacy and consequently switching to traditional healers (12, 13, 31). Furthermore, one study based on the REACH data from two urban and two rural sub-districts, South African women (especially from rural areas) found maternal services unacceptable due to negative interactions with health providers (13). Moreover, the same study found that women with a history of stillbirths had experienced at least once inappropriate health provider attitude (Ref). These attitudes include being shouted at, inattentiveness and insensitivity, or being turned away in the early phase of labour which compromised their quality of care (13).

Acceptability is an important dimension of access to health services and it is sometimes referred to as ‘cultural’ access (30, 32, 33). At an individual level, acceptability refers to

relationships between the health care providers (supply-side) and individual patients as well as their families and/or friends (demand-side) (19, 20). Acceptability is expressed through the patient's interactions, attitudes and expectations towards the health provider and vice-versa (34).

The complex relationship between the health provider and the patient is influenced by a number of factors such as beliefs and perceptions (19, 20), as well as population characteristics such as age, sex and socio-economic class (14, 35). Mutual respect seems to be the cornerstone of an acceptable patient-health provider relationship (12, 14).

For clarity, Gilson proposes three elements of acceptability: patient-provider interaction, patient-health service organisation interaction and patient-community interaction (36).

As the three dimensions of access are considered together (20), the three elements of acceptability are interconnected (36). Each element of acceptability is characterised by specific aspects as illustrated in the following definitions:

- Patient – health provider interaction: This element of acceptability represents the relationship between the patient and health provider (14, 20, 34). It is understood through the expectations and beliefs from one toward another.
- Patient – health service interaction: This element of acceptability brings in the experiences lived by the patient when seeking health services and patient's perceptions about health service organization and delivery. It is related mainly to the length of queues, the facility cleanliness, the opening hours, for example (19, 36).
- Patient-community interaction: This element of acceptability recognises that the patient is not isolated. The patient lives in a family and in a community with the

relatives and friends who might positively or negatively influence the patient's acceptability of health care (37, 38). Furthermore, this element aims at addressing the issue of family, friends and community role which is often not emphasised enough in understanding the patients' acceptability of health services (39, 40).

Inequities in health care have been defined as "differences in health that are unnecessary, avoidable, unfair and unjust" (8). With regard to acceptability of health care, inequities may be seen as differential acceptability of the health provider, health services and the community (41). However, despite a lot of literature on acceptability of health services (14, 16, 30, 32, 33), there is no much data available integrating collectively those three elements of acceptability.

1.3. PROBLEM STATEMENT

A growing interest in evaluation of access to health services has been noted over the last decades (16, 30, 32, 33). However, the acceptability dimension remains poorly conceptualized (42-45), with relatively little integration of elements of acceptability. Therefore, this research addresses the following questions:

1. What is the acceptability level of HIV, TB and maternal health services considering collectively patient-provider, system and community interactions among patients from a sub-district of Johannesburg in South Africa?'
2. What are the factors influencing acceptability among those patients and the possible reasons behind that influence?'

1.4. JUSTIFICATION FOR THE STUDY

There has been growing attention given to acceptability in recent years (13, 14, 44). But as Gilson (2007) reminds us, acceptability remains very difficult to research – it is elusive because it is about values and attitudes and expectations -(36). Some authors have argued that the acceptability dimension remains poorly conceptualised (14, 42, 43), especially with integration of three elements of acceptability as highlighted in the problem statement. Therefore, it is very important to analyse acceptability of HIV, TB and maternal health services in the context of South Africa by looking collectively at patient-provider, health service and community interactions. REACH data presented an opportunity to look at acceptability across different data sources to explore the complexity of acceptability.

The current study seeks to contribute to the existing knowledge by developing an acceptability framework (Figure 2). This acceptability framework may be of use for future studies in this domain. The study also aims at developing the provider, service, community and overall acceptability indices. . Finally, it aims at determining and exploring the factors influencing acceptability level among the population attending HIV, TB and maternal health services in a sub-district of Johannesburg in South Africa.

The following figure is an adapted conceptual acceptability framework developed from available literature on acceptability (18-20, 36).

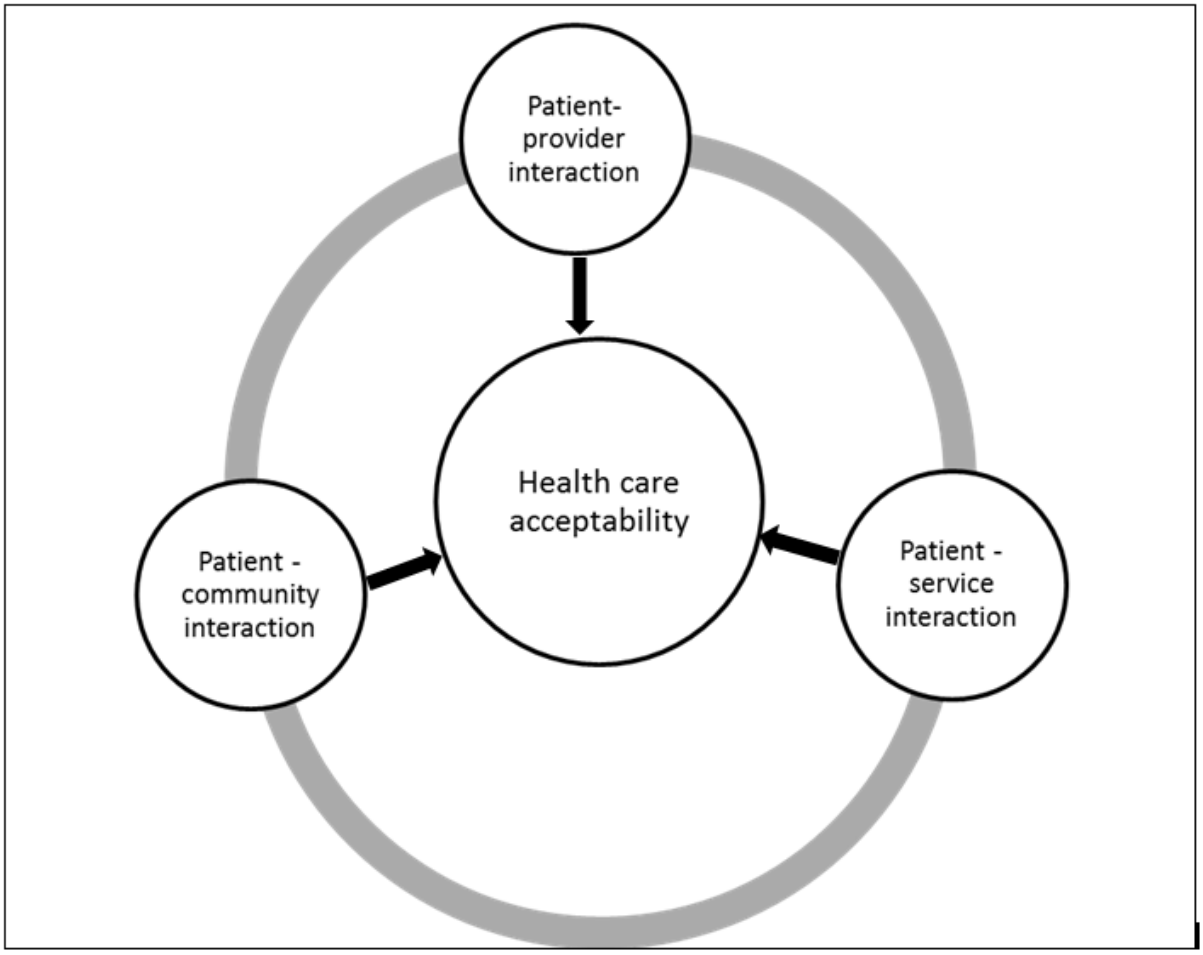


Figure 2-Adapted conceptual Acceptability Framework used in this master's research

The developed conceptual framework on acceptability has the strengths of putting the patients in the centre. It therefore highlights the acceptability of health services from the patients' perspective. It also emphasises the importance of interrelations among different elements of acceptability.

1.5. AIM AND OBJECTIVES

1.5.1. Aim

This study aimed to develop provider, service, community and overall acceptability indices. It also seeks to identify and explore factors influencing acceptability of HIV, TB and Maternal Health Services among patients seeking services in a sub-district of the City of Johannesburg from 2008 to 2010.

1.5.2. Specific objectives

1. To describe the socio-economic and demographic characteristics of patients attending HIV, TB and Maternal Health Services in a sub-district of the City of Johannesburg;
2. To develop provider, service, community and overall acceptability indices for patients attending HIV, TB and Maternal Health Services in a sub-district of the City of Johannesburg;
3. To identify the factors influencing the levels of acceptability in access to HIV, TB and Maternal Health Services for Johannesburg sub-district patients using the acceptability indexes from objective 2;
4. To explore factors influencing acceptability of HIV, TB and Maternal Health Services among a sub-district of the City of Johannesburg population from patients' narratives.

CHAPTER. II. METHODS

This study used secondary data collected as part of the REACH study. I (the primary investigator) was responsible for the overall analysis of the data that helped to answer the outlined study objectives.

Before discussing the methods used in this current MPH research study, a brief review on the goal and methods of REACH study is given below not only to provide the context of the current masters' study, but also to specify my role and clearly show what has been done in the REACH study and separate them from what this study aimed for.

2.1. REACH STUDY: GOAL AND METHODS

2.2.1. REACH goal and aims

The REACH study aimed at 'enhancing the management, planning and delivery of public sector health care services in the South African population. One of its specific objectives consisted to explore the dimensions of access [availability, affordability and acceptability] to public sector health care services [using three tracer interventions: HIV/TB and Maternal Health Services]. It also aimed to evaluate inequalities in access to services (46). To achieve these aims, the REACH study was designed as a cross-sectional study with qualitative (in-depth patient interviews) and quantitative (patient exit-interviews, medical reviews as well as patient self-reporting records) methods. Triangulation was used to integrate the findings from both methods (46).

2.2.2. REACH study period and sites

The REACH study was conducted over a period of five years (from May 2007-April 2012), in four sub-districts namely Hlabisa (KwaZulu Natal), Bushbuckridge (Mpumalanga), City of Johannesburg (Gauteng) and City of Cape Town (Western Cape) in South Africa (46).

2.2.3. REACH study population and sampling

The REACH study population consisted of HIV/TB and Maternal Health Services users in those four sub-districts. For the quantitative patient exit interviews, a two-step sampling strategy was used to provide a representative sample.

The first step of sampling consisted of randomly selecting health facilities in each sub-district. For HIV, all accredited HIV facilities were included. However, the probabilities proportional to size (PPS) methods were selected in each sub-district and the PPS methods were also applied. This method was used based on the total number of users in each facility at the time of the research, were used to select specific facilities where multiple facilities existed. For TB, a minimum of five facilities For MH, all facilities providing comprehensive essential obstetric care (CEOC) services in the sub-district were included in the sample. These facilities consisted of one in Hlabisa, two each in Bushbuckridge and Mitchells Plain and three in Soweto.

The second step consisted of calculating a representative sample of users who were randomly selected at each health facility for exit-interviews until the sample size was reached as determined in the power calculation (46-48).

With regard to the qualitative in-depth interview, a purposive sampling strategy was used with the aim of getting a balanced distribution in age, gender and users/non-users (46, 47).

The quality of both quantitative and qualitative data collection was assured in the REACH study by developing the questionnaire for exit interviews and guides for in-depth interview. The later were designed in English, then translated them into local languages and finally translating back into English to check the consistency (47). These data collection tools were pretested to check their feasibility. All researchers and research assistants received intensive training to ensure a shared-understanding of the tools and ethical conduct in the data collection process. Data quality checks were also built into the exit interviews with random telephonic 'check backs' carried out with some interviewees by field supervisors. Additionally, for the qualitative data, a follow up round of interviews was carried out to clarify and explore issues in greater depth with 40% of the participants (46).

2.2. CURRENT MASTER'S STUDY DESIGN AND METHODS

2.2.1. Study design

This master's study is a secondary data analysis using the mixed methods (QUAN + qual), meaning that quantitative data were given priority while qualitative data (patient in-depth interviews) were used to both confirm/refute and enable a deeper understanding of the quantitative findings (49). Both quantitative and qualitative data were analysed simultaneously for this MPH research. The quantitative and qualitative findings were integrated in discussion of the results chapter to gain deeper insights from qualitative narratives that cannot be obtained from quantitative methods (49).

2.2.2. Study site

This master's study focused on a sub-district of Johannesburg where both quantitative and qualitative data were collected at sixteen health facilities. For confidentiality purposes (as guided by REACH study Ethics), the names of those facilities remain anonymous. However, it is worth mentioning that facility A was a tertiary hospital while both facilities B and C were primary health centres.

2.2.3. Study population

The population of this study consisted of a sub-set of the REACH study population and was comprised of patients attending HIV, TB and Maternal Health Services from a sub-district in the City of Johannesburg. The quantitative surveys (exit interviews) took place from July to December 2008 while qualitative interviews were conducted between 2009 and 2010.

2.2.4. Inclusion criteria

All participants from a sub-district of Johannesburg in REACH study were considered.

2.2.5. Exclusion criteria

The participants with incomplete records from REACH data base were excluded.

2.2.6. Measurement/Scope

REACH questionnaires consisted of six sections which covering the following areas:

- Socio-economic and demographic background questions;
- Utilisation of health services (HV, TB or Maternal Health Services);
- Indirect costs of health service utilisation;
- Affordability, availability and acceptability of information;

- Dwelling characteristics,Household income and expenditure

For the purpose of this study, the focus was on demographic, socio-economic and clinical background of the study population. The questions on acceptability oh health services were also considered.

Furthermore the clinical records and patients self-reporting of their clinical conditions were analysed for clinical measures including CD4 count, viral load, ART buddy or support group, frequency of collecting ARVs and missing taking ARVs for HIV tracer; pre-treatment smear results, DOTS checked, frequency of TB medication collection, forgetting collecting/drinking TB medication and missing visit for TB tracer; and maternal parity, HIV status and Type of delivery for MH tracer.

With regard to in-depth interviews, the interview guide covered the following areas: participant's basic demographics background and their stories about illness (HIV/TB) or pregnancy to explore of the acceptability of health services expected and received.

2.2.7. Data processing and analysis plan

2.2.7.1. Data Management

Quantitative variables of interest for acceptability of HIV, TB and MH Services were extracted from the available STATA.14 database to generate a specific dataset for this current MPH study. The data cleaning consisted of checking for missing and extreme values. In-depth interviews, presented as transcripts, were still in raw or original form. After reviewing the verbatim transcripts for misspelling, some grammatical adjustments were made in the interests of readability (and without affecting the content of the transcript). The same pseudonyms of the interviews from original data were used in this analysis.

2.2.7.2. Data analysis plan

a) Quantitative data

The quantitative data (exit interviews as well as medical and self-reporting records) were already in STATA format. However, some recoding and generation of the new variables, such as age category, asset and acceptability indices, were made using the same statistical software to allow descriptive and inferential analysis.

From the exit interviews, the questions were categorized according to three main acceptability constructs or elements, as guided by Gilson (2007), namely patient-provider, patient-health service organization and patient-community interactions. Then, acceptability aspects were deductively produced and given the variable name to allow analysis.

Tables 1 and 2 present the acceptability variables generated from the exit interviews respectively for HIV/TB and MH tracer.

The acceptability variables (Tables 1 & 2) were recoded in order to pool and categorise them on a two levels scale "0" and "1" (Appendices B & C). In this scale, "0" represented "No", "Disagree", "Never" or "Inappropriate" responses, while "1" represented "Yes", "Agree", "Always" or "Appropriate" responses.. A composite score method was ultimately used to develop the acceptability indices presented in this research. A composite score, in statistics or research design can be understood as a method that aggregates and ranks observations (variables) on an ordinal scale (50). In this study, a unit weight method was used for composite scores, where all variables were equally weighted. This method is well-described in medical literature as an adequate method for developing a composite index (50, 51).

Table 1: Identified variables to develop acceptability index for TB/ART Health Services

ACCEPTABILITY		
Questions	**Sub-construct/Aspect**	**Construct/Element**
In general, when you need to seek healthcare, what do you prefer: a) To see a nurse in a nearby clinic or b) To travel further to see a doctor	provider preference	**Patient-provider interaction**
In this clinic are you able to talk to the doctors or nurses in private?	privacy	
The doctors and nurses (health workers) discussed the treatment fully with me	treatment discussion	
It is a problem that the health workers DO NOT speak my language	language barrier	
I find it easy to tell the health workers when I have missed taking my tablets	telling the truth	
The health workers are to busy to listen	provider busy	
Patient information is kept confidential in this clinic	confidence	
Some staff DO NOT treat patients with sufficient respect	respect for others	
The health workers I see respect me	respect for me	
The queues to see a doctor or nurse are too long at this facility	long queue	**Patient-health services interaction**
The facilities (including waiting area and toilets) are dirty	dirty facility	
How satisfied were you with the service today?	service satisfaction	
Since you first started coming to this facility, have you ever left without being helped?	leaving without treatment	
Have you ever not used TB-service when you needed them?	service not used when needed	
How do you think the service in this clinic could be improved? Shorter queues	short queues	
How do you think the service in this clinic could be improved? More health workers	More providers	
How do you think the service in this clinic could be improved? Cleaner facilities	cleaner facility	
How do you think the service in this clinic could be improved? Better patient facilities (toilets, waiting room area etc.)	better facility	
Have you told anyone besides the health care workers that you have TB?	disclosure	**Patient-community interaction**
To what extent do you agree with the following statement: "I have all the support from my partner that I need to cope with my illness"?	partner support	
"I have all the support that I need from my family"	family support	
"I have all the support that I need from my friends"	friend support	
Do you feel that people in the community judge you negatively for attending this facility for your TB treatment?	judgement/stigma	

Table 2: Identified variables to develop acceptability index for Maternal Health

ACCEPTABILITY		
Questions	**Sub-construct/Aspect**	**Construct/Element**
The doctors and nurses (*health workers)* explained what to expect when giving birth.	treatment discussion	**Patient-provider interaction**
It is a problem that the health workers DO NOT speak my language	language barrier	
Was your privacy respected?	privacy respected	
The *health workers* understood the difficulty of being in labour and assisted me where possible.	empathy for difficult labour	
Were you offered fluids?	offering fluids	
I DID NOT receive sufficient pain relief during my labour	giving insufficient pain-killers	
In this clinic are you able to talk to the doctors or nurses in private?	privacy	
The health workers are busy to listen	provider busy	
Were you shouted at during labour?	being shouted at	
Were you ever hit, slapped or pinched during labour?	being hit	
Some staff DO NOT treat patients with sufficient respect	respect for others	
The health workers I see respect me	respect for me	
The facilities (including waiting area and toilets) are dirty	dirty facility	**Patient-health services interaction**
How satisfied were you with the service today?	service satisfaction	
Were you allowed to have a companion during your labour?	allowed companion	
If no or don't know Would you have liked one?	liked companion	
Did you get referred for follow up care for you and the baby?	follow up referral	
For birth registration, did you get all the necessary documents?	birth registration certificate issued	
Were you told about the child-care grant & where to go for the child care grant if you qualify?	child care grant information	
To what extent do you agree with the following statements about your pregnancy: "I had all the support that I needed during my pregnancy from the father of the child"	Father support	**Patient-community interaction**
"I have all the support that I need from my family"	family support	
"I have all the support that I need from my friends"	friend support	

With regard to acceptability of HIV and TB services, 23 variables were identified, including 9 for patient-provider interaction (provider acceptability), 9 for patient-service interaction (service acceptability) and 5 for patient-community interaction (community acceptability) (Table 1).

Using unit weight composite scores method, the three different elements of acceptability indices were calculated as follows:

$$\text{Provider acceptability index} = \frac{aP1+aP2+aP3\ldots+aPn}{n}$$

Where:

- 'aP' means aspect of provider acceptability such as provider preference, privacy, treatment discussion, etc.
- n: number of aspects of provider acceptability, in this case 9

$$\text{Service acceptability index} = \frac{aS1+aS2+aS3\ldots+aSn}{n}$$

Where:

- 'aS' means aspect of service acceptability such as long queue, dirty facility, service satisfaction, etc.
- n: number of aspect of provider acceptability, in this case 9.

$$\text{Community acceptability index} = \frac{aC1+aC2+aC3\ldots+aCn}{n}$$

Where:

- 'aC' means aspect of community acceptability such as disclosure, partner support, family support, etc.
- n: number of aspect of provider acceptability, in this case 5.

Then, the overall acceptability index for each tracer was calculated as follow:

$$\text{Tracer-Overall acceptability index} = \frac{TAvar\ 1+TAvar\ 2+TAvar\ 3\ldots+var\ N}{N}$$

Where:

- Tracer means HIV, TB or MH
- TAvar means tracer specific acceptability variables
- N: total number of acceptability variables, 23 for the HIV/TB and 22 for MH tracers

Referring to the Maternal Health service acceptability, 22 variables were identified; including 12 for patient-provider interaction (provider acceptability), 7 for patient-service interaction (service acceptability) and 3 for patient-community interaction (community acceptability) (Table 2). The same method described for calculating the HIV and TB acceptability indices was applied to calculate the acceptability index for the MH tracer.

The acceptability index was categorized into two classes. The obtained index was ranging from 0 to 1. In order to present better the acceptability index, the obtained scales were multiplied by 100 to bring them to 100%.as illustrated below:

- Low acceptability index ranging from 0 to 66.66%
- High acceptability index ranging from 66.67 to 100%.

A cut off of 66.66% was chosen based on the types of questions including those answered ambivalently (i.e. where 'both yes and no', 'both agree and disagree', 'sometimes' or 'indifferent' were given to the same questions) in REACH questionnaire. This cut off was also guided by acknowledging the patients' fear to give a negative opinion about health provider or health services (45, 52).

To keep consistency, an asset index was calculated using the same method (unit weighted composite scores) with the variables on dwelling characteristics, household income, expenditure and household asset. Eighteen variables were identified to calculate the asset

index and those variables included; type of the house, type of the wall of the house, type of the roof of the house, number of the rooms of the house, type of water supply, type of the toilet, type of cooking power, presence of land phone, presence of cell phone, presence of radio, presence of television set, presence of DVD player, presence of laptop, presence of internet, presence of stove, presence fridge, presence of bicycle and presence of vehicle. The asset index was calculated as follow:

$$\text{Asset index} = \frac{\text{var 1}+\text{var 2}+\text{var 3}\ldots+\text{var n}}{n}$$

Where:

- var means the variables on dwelling characteristics, household income, expenditure and household asset as explained above
- n: number of those variables and in this case 18.

The asset index was categorized into three classes ranging from 0 to 1, and then multiplied by 100 to get a percentage as follow:

- Low asset index ranging from 0 to 33.33%
- Middle asset index ranging from 33.34 to 66.66%
- High asset index ranging from 66.67 to 100%.

Interpretation of inferential analysis

The bivariate outcome logistic regression model was computed to determine significant associations between high acceptability index and various predictors for each tracer at 95% of confidence interval (CI). Initially, the simple or unadjusted logistic regression models were run to assess possible associations and then multiple or adjusted logistic regressions were executed to ascertain the significant associations between high acceptability index and

various predictors for the different three tracers. Acceptability indices of different elements (provider, services and community) of acceptability as well as overall acceptability were considered.

A statistically significant association was considered for a p value <0.05 and 95% CI not including 1. (53). In addition, a judgment from health policy point of view was made to consider a significant association between high acceptability index and factors with OR ≥ 2 and /or OR ≤ 0.5 (two times more or less likely to have higher acceptability) regardless of p value and 95% CI (54).

b) Qualitative data

Researcher reflexivity

With regards to in-depth interviews (qualitative data), as the researcher for this MPH research project, I was not involved in conducting the interviews. However, I am a medical doctor involved in day-to day patient-heath provider interactions including counselling strategies, ways of breaking bad news, etc. Given that my study focused on acceptability of health services, I fully recognised that my experience, background and expectations would have affected, at least to some degree, the way I interpreted the narratives from the in-depth interviews (55). Further, with the guidance of supervisors (each with their own perspectives and identity reference points) who were involved in the REACH study, and building on research reflections, I developed a coding system to take into consideration the situational dynamics in which those in-depth interviews took place

Qualitative analysis

After engagement with supervisors as 'co-readers' and coders of the transcripts, a thematic coding system was developed and in-depth interview transcripts (Microsoft Word) were imported into MAXQDA.12 for thematic content analysis. The narratives were reviewed and analysed deductively using 'acceptability themes' which were drawn from the conceptual framework (Figure 2). The 'acceptability themes' used in qualitative analysis were corresponding to 'acceptability constructs' used in quantitative analysis. The acceptability themes included 'perceived patient-health provider interaction', 'perceived patient-health care organization interaction' and 'perceived patient-community support'. Simultaneously, inductive analysis was done to allow for new themes to emerge from the transcripts.

To allow a deeper understanding of the results from this mixed study analysis, a process called triangulation, which is a method that facilitates the verification of data through cross validation from more than two sources, was used to integrate the findings from both quantitative and qualitative methods in the discussion chapter (56).

2.2.8. Ethical considerations

This study was embedded in the REACH project and it upheld the ethical norms and standards established as part of the REACH project (ethical clearance Number: R14/49 Schneider –Appendix H). The protocol of this research project was submitted to the satisfaction of an assessors' group from WITS School of Public Health. The confidentiality and anonymity of participants, as well as anonymity of sub-districts and facilities was maintained by using pseudonyms and /or codes for both quantitative and qualitative data. An endorsement letter to use REACH data was given by a Principal Investigator on the

project (Appendix I) and then Ethical clearance was sought and granted from the University of Witwatersrand Ethics Committee (No: M150921 -Appendix J).

2.2.9. Limitations

2.2.9.1. Limitations due to available data

Although secondary data analysis is increasingly popular in health system and policy research for its low cost and relative rapidity in generating new insights from previous studies (57), the challenges faced were:

- Lack of control over data quality. However, trust was placed on the quality control measures for data collection in REACH study.
- Some questions on acceptability from REACH data were answered ambivalently (i.e. where 'both yes and no', 'both agree and disagree', 'sometimes' or 'indifferent' were given to the same questions) and this made analysis a challenging task.
- Outdated data. The REACH study was conducted between 2008 and 2010. Furthermore, both HIV/TB and Maternal Health services have recognised a rapid changing policy environment in South African context. Thus the findings might not reflect the current reality. Nevertheless, the research assumed that some important recommendations could be drawn from this study to guide future health policy and health system research.
- Selection bias from the data used for secondary analysis:
    1. Only patients in the system. i.e. attending health facilities were included in REACH study.
    2. The current study did not consider the health providers and community opinion to ascertain the patient-provider and community interactions.

The data available did not provide substantial insight on functioning of health system.

2.2.9.2. Limitation of association significance from a health policy perspective:

In statistics, a wide CI reflects little knowledge about the effect so that further information is often required (57). However some important decisions can be drawn from a health policy perspective (57, 58) In this case, a significant association from a health policy perspective was considered for OR >2 or <0.5 even though the CI was sometimes wide and may be due to small sample size (57). To ascertain the significant association from a health policy perspective, further studies are needed.

2.2.10. Dissemination

The results of this study will be submitted to the library of WITS University for public use. Similarly, a policy brief will be developed at CHP for health policy and system consultation. The findings of this study will also be presented at conferences and seminars (at national and if possible at international levels) and will be written up for peer-reviewed publication.

CHAPTER. III. RESULTS

This chapter presents the main results on acceptability of three tracers: HIV, TB and Maternal Health services in a sub-district of the City of Johannesburg. For each tracer, demographic, socio-economic, and clinical characteristics of the study population were firstly described, followed by the development of indices of different elements of acceptability across three tracers. Then, inferential analyses were presented for each tracer. Finally, in-depth interviews focussing on patients' experience in relation to health services acceptability were explored. The triangulation of results from both quantitative and qualitative methods was done to allow a deeper understanding of the findings.

A sample size of 987 patient exit-interviews from 16 different facilities and 15 patient in-depth interviews (not facility driven) were included in this study as shown in Table 3.

Table 3: Total sample size of the study population

Tracer	*Exit interviews (patients)*		*In-depth interview (patients)*
	Facilities	**Number**	
HIV	3	331	-
TB	10	297	-
HIV/TB	_	-	8
Maternal Health	3	359	7
TOTAL	16	987	15

3.1. HIV TRACER

3.1.1. Demographic characteristics of HIV tracer

A total population of 331 people seeking HIV treatment services were interviewed from three different health facilities; A: n= 132(39.88%), B: n= 108 (32.63%) and C: n= 91 (27.49%).

Almost all patients, 318 out of 331 (96.07%) were born in South Africa and from them two-thirds (66.67%) were born in Gauteng Province. This population was relatively young with nearly two thirds aged between 20 and 40 years. The minimum age was 20 years and maximum age was 66 years with a mean of 37.7 years (8.8 Std. Dev.).

Forty five per cent of those interviewed were the heads of their households (HHH) themselves and the remaining 55% were staying with their HHH. The age of the HHH was recorded for 162 respondents. The mean age of the heads of the household was 53.1 years (13.9 Std. Dev.) with minimum and maximum age of 25 and 93 years respectively.

Sixty two respondents did not know the education level of their HHH. From 180 remaining, 25 respondents (13.9%) reported that the HHH did not go to school, while those with primary, secondary and tertiary education level were respectively 12.9%, 30.1% and 2.8%.

On average, the respondents were living with 2 children aged less than 18 years and 3 adults aged more than 18 years. Other demographic characteristics are presented in the table 4.

Table 4: Demographic characteristics of HIV Tracer

VARIABLES	N= 331	
	n	%
Age category (in years)		
≤40	219	66.2
≥41	112	33.8
Gender		
Female	267	80.7
Male	64	19.3
Marital status		
Never married (single)	218	65.9
Married (including those who live with their partners, divorced, separated and widows/widowers)	113	34.1
Education level		
No schooling	15	4.5
Primary	51	15.4
Secondary	258	77.9
Tertiary	7	2.2

3.1.2. Socio-economic status (SES) of HIV tracer

An asset index was calculated for 330 respondents whose records on dwelling characteristics, household income and expenditure were complete. This population was generally poor with nearly 90% falling in the lowest and middle SES categories The following figure represents the socio-economic status of HIV tracer.

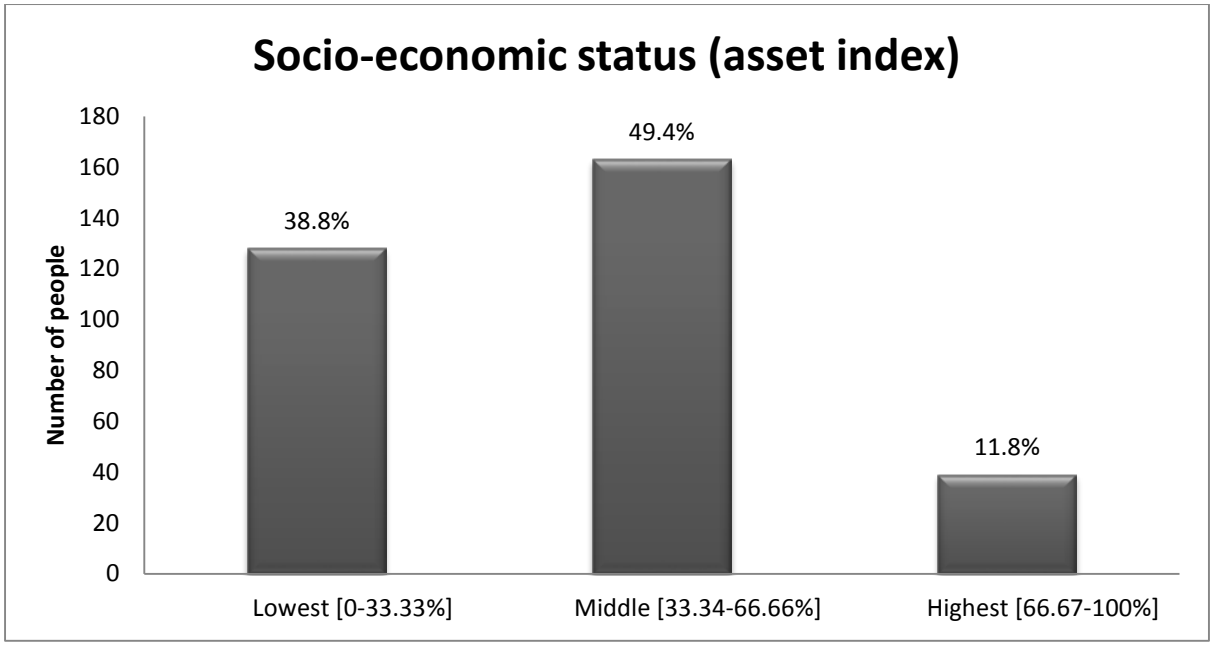


Figure 3-Socio-economic status of HIV tracer

3.1.3. Clinical characteristics of HIV tracer

From clinical records, CD4 count before initiation of ART was recorded for 298 patients. Half of those patients, (50.67 %), were severely immunocompromised with CD4 < 100 cells/µL. There were no records about pre-treatment viral load. However, based on the most recent results recorded, the proportion of severely immunocompromised patients decreased to about 20% and viral load was undetectable nearly in two-thirds of cases. The rest of clinical characteristics are shown in the table 5.

Table 5: Clinical characteristics of HIV Tracer

VARIABLES	N= 331	
	n	%
ART-buddy		
No	179	51.1
Yes	161	48.6
ART-support group		
No	179	51.4
Yes	59	17.8
Unknown (no records)	93	28.1
Frequency of collecting ARVs		
One monthly or less	204	61.6
More than monthly	127	38.8
Ever missed taking ARVs		
No	257	77.6
Yes	74	22.4
Home visit		
No	297	89.7
Yes	33	10.0
Unknown (no records)	1	0.3

3.1.4. Acceptability Index of HIV tracer

Of 331 HIV positive patients, 298 had complete records of HIV-provider acceptability variables, and the provider acceptability index was calculated for them. The complete records of HIV-service acceptability variables were available for 318 patients for whom the HIV-service acceptability index was calculated. Then, only 180 patients had complete records of HIV-community acceptability variables and the HIV-community acceptability

index was calculated for those patients. Finally, 158 patients had all HIV acceptability variables and subsequently the HIV-0verall acceptability index was calculated for them.

Table 6 presents the acceptability index for each element of acceptability as well as the overall acceptability index for HIV tracer.

Table 6: Acceptability index for HIV tracer

HIV care acceptability index	*HIV care acceptability elements*							
	HIV-provider		***HIV-service***		***HIV-community***		***HIV-overall***	
	n	%	n	%	n	%	n	%
Low acceptability [0-66.66%]	7	2.4	225	70.7	176	97.8	121	76.6
High acceptability[66.67-100%]	291	97.6	93	29.3	4	2.2	37	23.4
TOTAL	**298**	**100.0**	**318**	**100.0**	**180**	**100.0**	**158**	**100.0**

3.1.5. Factors associated with HIV tracer acceptability.

3.1.5.1. Factors associated with HIV-provider acceptability

a. Simple logistic regression models results

Execution of simple logistic regression models showed a number of HIV tracer population characteristics predicting high HIV-provider acceptability with statistically significant associations. These characteristics are listed below:

- Socio-economic status compared to respondents low SES, those from middle SES were 15.2 times more likely to have high HIV-provider acceptability (p = 0.020). There was no statistical significant association found between SES and HIV-provider acceptability index.

- Education: the patients with tertiary education level were 11.7 times more likely to have high HIV-provider acceptability than those without education (p = 0.008).

The following factors were found to be associated with high HIV-provider acceptability from a health policy perspective:

- ART buddy: the patients who had ART buddies were 5.5 times more likely to have high HIV-provider acceptability than those without them (p = 0.117).
- ART collection frequency: the patients who were collecting the ART more than monthly were 4 times more likely to have high HIV-provider acceptability than their counterparts who were collecting ART monthly or less (p = 0.199).
- Age-group: the patients aged between 41 and 60 years were 3.1 times more likely to have high HIV-provider acceptability than those age 40 years and below (p = 0.295).
- ART support group: the patients who ever had ART support group were 2.5 times less likely to have high HIV-provider acceptability than those who never had (p=0.280).

b. Multiple logistic regression models results

The multiple logistic regression models were performed for 290 patients who had complete records. The results showing statistically significant association are presented below:

- Socio-economic status: the patients from the middle SES were 26.4 times more likely to have high HIV-provider acceptability than those from SES (p = 0.024).
- Education: the patients with secondary education level were 18 times more likely to have high HIV-provider acceptability than those without education (p = 0.038).

3.1.5.2. Factors associated with HIV-service acceptability.

a. Simple logistic regression models results

After running simple logistic regression models, one factor showed a negative statistically significant association, while two factors showed a positive statistically significant association with high HIV-service acceptability.

The patients who missed ART doses were 2 times less likely to have high HIV-service acceptability than those who did not (p = 0.049).

The results also showed that male patients were 1.9 more likely to have high HIV-service acceptability than females (p=0.023). Furthermore, it was noted that as age (continuous variable) increased by one unit, the HIV-service acceptability increased as well by one unit (p = 0.026). In addition patients aged 41 years and above (age group) were 1.7 times more likely to have HIV-service high acceptability than those aged 40 years and below (p=0.026).

The following factors were found to be associated with high HIV-service acceptability from a health policy perspective:

- Education level of head of household: the patients whose HHH had tertiary education level were 2.6 times more likely to have high HIV-service acceptability compared to those whose HHH no schooling (p=0.085).
- Number of adults staying in the household: the patients who were staying with at least three adults (>18 years) were 2 times more likely to have high HIV-service acceptability than those who were staying with two or less adults (p= 0.077).

b. Multiple logistic regression models results

There was no factor found to be statistically significant associated with HIV-service acceptability in multiple logistic regression models.

3.1.5.3. Factors associated with HIV-community acceptability.

a. Simple logistic regression models results

After performing simple logistic regression models, it was noted that the relationship to HHH and ART-support group were two factors statistically significantly associated with high HIV-community acceptability.

Table 7: Factors associated with HIV-community acceptability from a health policy perspective

Characteristics	OR	Z	P	95% CI	Obs.
Staying with children (compared to < 2 children)					
Staying with ≥ 2 children in the house	2	+1.66	0.098	0.912 – 3.016	183
Staying with adults (compared to <3 adults)					
Staying with ≥ 3 adults in the house	2	+1.83	0.067	0.963 – 3.182	183
Heads of households education (compared to no schooling)					
heads of households with secondary education	2	+0.77	0.438	0.346 – 11.544*	109
heads of households with tertiary education	2	+0.92	0.357	0.457 – 8.746	183
Education level (compared to no schooling)					
Primary level	0.2	-1.60	0.111	0.015 – 1.534	
Secondary level	0.3	-1.02	0.308	0.037 – 2.834	183
tertiary level	0.3	-0.84	0.398	0.018 – 4.746	

*: wide CI probably due to the small sample size

The patients who were staying with the HHH were 2.1 times more likely to have high HIV-community acceptability than those who were themselves the HHH (p = 0.032). Furthermore, the patients who belonged to ART-support groups were 2.4 more likely to

have high HIV-community acceptability compared to those who did not belong to any support group (p = 0.033). Table 7 presents the factors associated with high HIV-community acceptability from a health policy perspective are shown in the.

b. Multiple logistic regression models results

Multiple logistic regression models failed to show any factor statistically associated with HIV-community acceptability.

Factors associated with HIV-overall acceptability.

a. Simple logistic regression models results

The results from simple logistic regression models did not show any factor statistically significant associated with HIV-overall acceptability.

The factors that were found to be associated with HIV-overall acceptability from a health policy perspective are shown in listed below:

- Heads of households education level: the patients whose HHH had primary, secondary and tertiary were 2.8, 3.1 and 4.8 times respectively more like to have high HIV-community acceptability than those whose the HHH had no schooling.
- ART support group: the patients who ever had ART-support group were 2.2 times more likely to have high HIV-overall acceptability than those who never had ART-support group (p=0.235)

b. Multiple logistic regression models results

Multiple logistic regression models failed to show any factor statistically associated with HIV-overall acceptability.

3.2. TB TRACER

3.2.1. Demographic characteristics of TB tracer

A total population of 297 people were interviewed from ten TB clinics. This population was well distributed ranging from 28 to 31 patients by clinic.

The gender was well-balanced with male patients representing 51.52% (n=153) and females representing 48.48% (n=144). The minimum age was 18 year and maximum age was 68 years with a mean age of 37.7 years (10.4 Std.Dev.).

Almost all patients (95.29%) were born in South Africa and the three quarter (74. 56%) of them was born in Gauteng. Nearly half of the patients (49. 49%) were staying with their HHH, while 50.51% were the HHH themselves The age of the heads of households was recorded in 126 cases and varied from 27 to 89 years with a mean of 54.2 (14.8 Std.Dev) years. The records of the HHH gender were available for 165 individuals from which 114 (69.1%) of the HHH were females and the remainder 51 (30.9%) were males.

Education level of the HHH was recorded for 139 patients and 58.27% of them had at least secondary education level. Out of 296 patients, 151 (51.01%) were staying with more than two children, while the remaining 145 (48.99%) were staying with one child or none. The majority (60.61%) were staying with three or more adults (>18years) in their households. Other demographic characteristics are represented in the table 8.

Table 8: Demographic characteristics of TB tracer

VARIABLES	N= 297	
	n	(%)
Age category (in years)		
≤ 40	197	66.33
>40	100	33.67
Unknown	10	3.37
Marital status		
Never married (single)	199	67.0
Married (including those who live with their partners, divorced, separated and widows/widowers)	98	33.0
Education level		
No schooling	7	2.4
Primary	59	19.9
Secondary	225	75.8
Tertiary	5	1.7
Unknown	1	0.3
Employment		
Unemployed	223	75.1
Employed (including part and full-time)	74	24.9

3.2.2. Socio-economic status of TB tracer:

The records on dwelling characteristics, household income and expenditure were available for 297 patients for whom asset index was calculated. About 92% were falling in the middle and highest SES categories.

Figure 4 represents the socio-economic status of TB tracer.

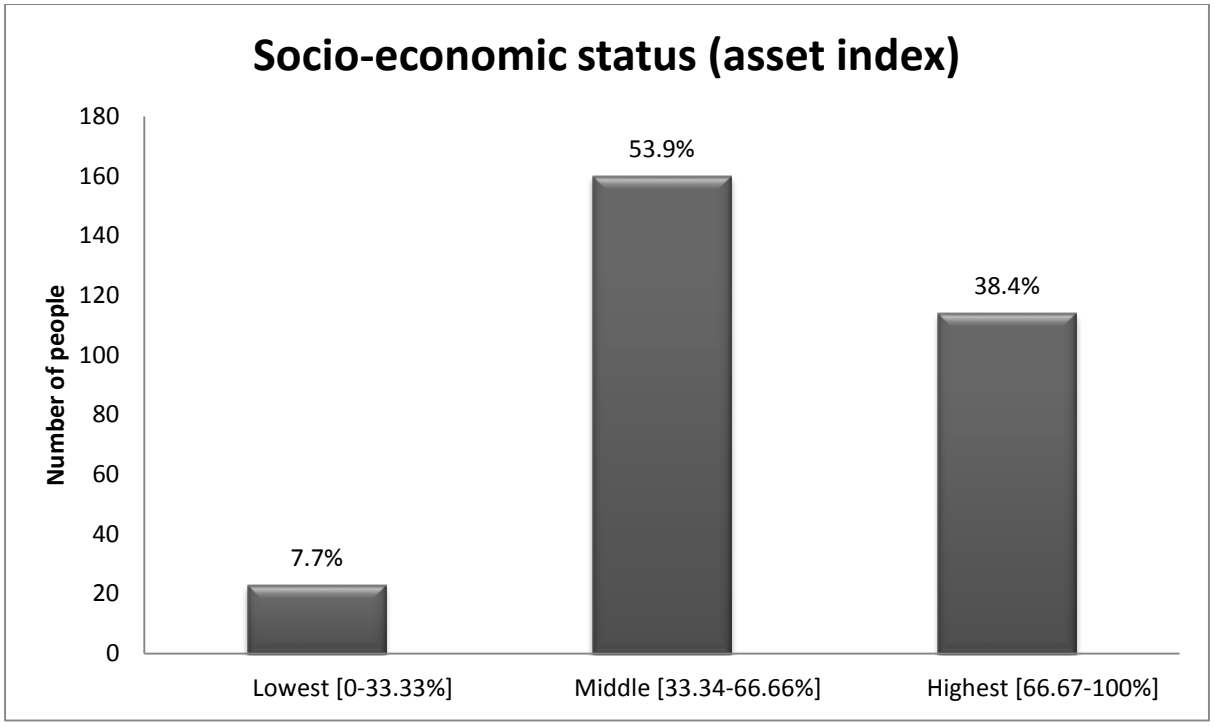


Figure 4-Socio-economic status of TB tracer

3.2.3. Clinical characteristics of TB tracer

From the record reviews, the pre-treatment smear results were recorded for 245 out of 297 patients (82.5%). The subsequent results of smear cultures on treatment were poorly recorded. The results of the first smear cultures were available for 72 patients, while the second and third smear culture results were recorded only for 28 and two patients respectively.

About 7.14% of the patients missed their daily Directly Observed Treatment Short-course (DOTS) visit. However, nearly 40 % of the patients did not have anyone check that they took their TB treatment daily.

Table 9: Clinical characteristics of TB Tracer

VARIABLES	N= 297	
	n	%
Missed (ever) TB dose		
No	262	88.2
Yes	35	11.8
Missed visits: intensive phase		
No	227	76.4
Yes	64	21.6
Unknown	6	2.0
Missed visits: continuation phase		
No	240	80.8
Yes	33	11.1
Unknown	24	8.1
Treatment supervisor		
Non	117	59.6
Yes	119	40.1
Unknown	1	0.3

Nineteen patients had forgotten to collect TB medications and the main reasons were: just forgetting, lack of time and / or of transport money, feeling ill or not better to go to clinic, traveling and other family responsibility. Table 9 summarises other clinical characteristics.

3.2.4. Acceptability index of TB tracer

The TB-provider acceptability index was calculated for 266 patients who had complete records of all provider variables. The records of all service variables were available for 294 patients for whom the service acceptability index was calculated. Only 154 patients had complete records of community variables and the TB-community acceptability index was

calculated for them. Finally, 158 patients with complete records of all TB acceptability variables were calculated the TB-overall acceptability index. Table 10 presents the acceptability index for each element of acceptability as well as the overall acceptability index for the TB tracer.

Table 10: Acceptability index for TB tracer

TB care acceptability index	*TB care acceptability elements*							
	TB-provider		***TB-service***		***TB-community***		***TB-overall***	
	n	%	n	%	n	%	n	%
Low acceptability[0-66.66%]	9	3.4	88	29.9	26	16.4	3	2.1
High acceptability[66.67-100%	257	96.6	206	70.1	133	83.6	140	97.3
TOTAL	**266**	**100.0**	**294**	**100.0**	**159**	**100.0**	**143**	**100.0**

3.2.5. Factors associated with TB tracer acceptability

3.2.5.1. Factors associated with TB-provider acceptability

a. Simple logistic regression models results

The results from simple logistic regression models did not show any factor statistically significant associated with high TB-provider acceptability. However, some factors were found to be associated with TB-provider high acceptability from a health policy perspective and are shown in the table 11.

b. Multiple logistic regression models results

Multiple logistic regression models failed to show any factor statistically associated with TB-provider acceptability.

Table 11: Factors associated with TB-provider acceptability from a health policy perspective

Characteristics	OR	Z	P	95% CI	Obs.
Pre-treatment smear result (compared to negative)					
Positive pre-treatment smear	3.2	+1.37	0.172	0.604 – 16.872*	196
DOTS (compared to not checked)					
Checked DOTS	2.9	+1.52	0.127	0.731 – 12.226*	266
First smear result on treatment (compared to negative)					
Positive smear culture on treatment	2.3	+0.57	0.571	0.143 – 38.112*	64

*: wide CI probably due to the small simple size

3.2.5.2. Factors associated with TB-service acceptability

a. Simple logistic regression models results

Simple logistic regression results revealed two factors statistically associated with high TB-service acceptability. Those factors were education level of the HHH and daily checked DOTS

Table 12: Factors associated with TB-service acceptability from a health policy perspective

Characteristics	OR	Z	P	95% CI	Obs.
Missed TB treatment collection (compared to non)					
Yes	3.4	+1.61	0.107	0.766 – 15.175*	289
Age group of heads of households (compared to ≤40 years					
Heads of households aged >40 years	0.5	-1.19	0.234	0.180 – 1.521	124
Education group (compared to no schooling)					
Primary education level	0.4	-0.72	0.473	0.499 – 4.016	288
Secondary education level	0.4	-0.93	0.351	0.428 – 3.063	
Socio-economic class (compared to low)					
Middle socio-economic class	0.4	-1.78	0.075	0.117 – 1.110	294

*: wide CI probably due to the small sample size

The patients whose HHH had secondary or tertiary education were 3.4 times more likely to have high TB-service acceptability than those whose the heads of the households did not go to school With regards to daily checked DOTS, the patients whose DOTS was daily checked were 4.3 times less likely to have high TB-service acceptability than those whose DOTS was not checked (p = 0.000). Table 12 presents other factors associated with TB-service acceptability

b. Multiple logistic regression models results

The results from the multiple logistic regression models were computed for 119 patients whose records were complete. Daily checked DOTS was the only factor associated with high TB-service acceptability. The patients whose DOTS was daily checked were 3.8 less likely to have high TB-service acceptability than those whose DOTS was not checked (p = 0.012).

3.2.5.3. Factors associated with TB-community acceptability

a. Simple logistic regression models results

The number of children staying in the household, gender and age, were statistically significantly associated with high TB-community acceptability in simple logistic regression models. The patients who stayed with two or more children in the household were 7.7 times more likely to have high TB-community acceptability than those who stayed with one child or none (p = 0.000). Furthermore, male patients were 3 times less likely to have TB-community high acceptability than females (p = 0.027). It was also discovered that as age (continuous variable) increased by 1 unit, the TB-community acceptability decreased by 0.6 units (p = 0.003). In addition, patients aged more than 40 years were 2.5 times less likely to have high TB-community acceptability than those aged 40 years and below (OR = 0.4 & p =

0.068), this was considered as a weak statistically significant association, but an important association from health policy perspective.

The factors presented in the table 13 were considered to be associated with TB-community acceptability from a health policy perspective.

Table 13: Factors associated with TB-community acceptability from a health policy perspective

Characteristics	OR	Z	P	95% CI	Obs.
Heads of household education (compared to no schooling)					
Heads of households with secondary education level	8.3	+1.81	0.070	0.838 – 82.858*	73
Missing TB treatment dose(compared to not missed)					
Missed taking TB tablets	0.4	-1.72	0.086	0.135 – 1.140	159
Socio-economic class (compared to low)					
Middle socio-economic class	0.3	-1.05	0.294	0.394 – 2.665	159

*: Wide CI probably due to the small sample size

b. Multiple logistic regression models results

The multiple logistic regression models were performed for 71 patients with complete records. The results showed two factors statistically significant associated with TB-community high acceptability for TB tracer.

Those factors include staying with two or more children in the household and gender. The patients who were staying with two or more children were 21.5 times more likely to have high TB-community acceptability than those who were staying with one child or none (p = 0.007). Male patients were 2.5 times less likely to have high TB-community acceptability than females (p = 0.029).

3.2.5.4. Factors associated with TB-overall acceptability.

a. Simple logistic regression models results

The simple logistic regression models failed to show any factor statistically significant associated with TB-overall acceptability among the TB tracer population. However some factors shown in the table 14 were found to be associated with TB-overall acceptability from a health policy perspective.

Table 14: Factors associated with TB-overall acceptability from a health policy perspective

Characteristics	OR	Z	P	95% CI	Obs.
Socio-economic class (compared to low)					
Middle socio-economic class	6.1	+1.22	0.212	0.356 – 103.939	143
High asset index	4.6	+1.05	0.294	0.267 – 78.548	
DOTS (compared to not checked)					
Checked DOTS	3.7	+1.06	0.289	0.271 – 41.998	143
Missing TB treatment dose (compared to not missed)					
Missed TB treatment dose	0.3	-0.93	0.354	0.271 – 3.635	143
Age group (compared to ≤ 40 years)					
≥41 years	0.2	-1.22	0.224	0.196 – 2.511	143

b. Multiple logistic regression models results

Multiple logistic regression models failed to show any factor statistically associated with TB-overall acceptability.

3.2.6. Patients' perceptions about acceptability of HIV/TB Health Services

Eight patients aged from 23 to 51 years, took part in in-depth interviews to explore their acceptability of HIV and/ or TB health services. The patients' experiences about acceptability of HIV and TB health services are presented below:

3.2.6.1 *Perceived patient-provider interaction*

Only two out of eight patients confirmed of meeting particular health workers (HWs) who were kind and nice to them. For example U2-B-TB-PA6 said:

> *…my first day coming back here to the clinic for my first treatment many people were very excited to see me, people that I worked with and from Love Life all of them were giving me support and all of the nurses here they were welcoming and having to come here for my treatment that was exciting for me.*

However, the remaining six patients perceived nurses as rude and having negative attitudes. Some of the patients explained that they had even defaulted from their treatment as a consequence.

> *…I was not ok with that then after two or three days I came back here and told her how I feel about what she did. And she only shouted back asking me why am I there at that time to collect the pills and that's when I decided to give up the pills. (U2-V-ART-TB-PA1)*

> *I stopped taking my treatment because the nurse that I was supposed to get treatment from was not polite to me. She talked to me in an impolite manner in front of her staff. (U2-V-ART-TB-PA3)*

Despite perceived poor behaviour of some nurses toward the patients, the latter usually recognised the importance of treatment. Methodologically, in the REACH study, it was very difficult to find patients who had defaulted without returning to care and therefore, reasons for this group's continued absence from services were not explored. However, the two patients who had ultimately returned to treatment, expressed feelings about being worried and anxious about not taking treatment.

> *I cope well but the only thing that is troubling me for now is this thing of not taking my treatment any more. It does worry me a lot. (U2-V-ART-TB-PA3)*

> *…the only thing that I can say is good for me is that I am getting treatment now. (U2-V-ART-PA5)*

Other reasons for stopping treatment (even if temporarily) included the side effects of the medication (U2-BV-TB-ART-PA8), impression of feeling better (U2-V-ART-TB-PA1), job commitments, especially working night-shift (U2-V-ART-TB-PA1) and health system issues (U2-V-ART-PA5) that are detailed in the following paragraphs.

3.2.6.2. Perceived patient-service interaction

With regard to patients' perceptions about HIV/TB health service organisation, there were some issues to be considered.

First of all, space and infrastructure did not always enable a good environment for counselling. There were constraints forcing the counsellors to tell patients their HIV status in hearing distance of others, a discussion which should be confidential. This reflects insufficient infrastructure as one patient said:

…the clinic is always full. There are children's clinic here and there is family planning clinic and there are those people who are here to get their treatment too so they were mixed. When high blood people [i.e. with hypertension] were still coming they used to sit on that side and there would not be any space here because there were many people... (U2-B-TB-ART-PA7).

Second, the health services were generally perceived as not-well organized. However, most of the patients knew exactly where to start, to go next and so forth.

We start where we submit the file, they our files when we are still seating, after getting our files from the admin we go to weight and then we go to the doctor. After seeing the doctor I go to collect medication then if I want to see the social worker and … (U2-D-ART-PA4).

However, the queues were generally seen as being long. While waiting in line provided some opportunity for patients to talk about their disease, there was a feeling that multiple and inappropriate queues might reflect a general lack of patient centredness.

The conversation that we are talking about is HIV nothing else and the way that the sisters are not treating people in the right way. The question of not treating people in the right way was due to the way people were seating. We sit in the wrong queues… (U2-D-ART-PA4).

The patients' challenges to navigate across different levels of the health system and inadequate referral system were perceived to affect the acceptability of health service organization.

…is this thing of telling me that I do not qualify [for treatment here], I am not supposed to be attending here, I am supposed to be attending at another clinic. That is the thing that I did not like (U2-D-ART-PA4).

3.2.6.3. Perceived patient- community interaction

Only two patients said to have family and/or friend support, and the rest did not.

> *My mother, the woman who gave birth to me, she used to beat me up and do all these wrong things to me. (U2-BV-TB-ART-PA8)*

> *I do not have friends, I have just change from having friends because I saw that having lot of friends is causing headache and corruption, we end up not understanding one another and it turns to have a lot of conflicts, somewhere along the line as I was growing I told myself that I don't want friends anymore I'm a grown lady now, I have to raise my kids and focus on my life and forget about friends because friends issues are having, gossips (U2-A-ART-TB-PA2)*

Although from these narratives, the majority of the patients had disclosed their HIV status to a family member or friends (U2-V-ART-TB-PA3 and U2-D-ART-PA4), the stigma and judgmental attitude from the community toward HIV positive patients were clearly highlighted

> *Criticism was the only reason why I was afraid for people to see me and telling me that I have AIDS... what mostly concerned me was my career, my friends and family, my girlfriend almost everyone that was in my life because I thought they would reject me or keep me away from them because I was sick. (U2-B-ART-TB-PA6)*

3.3. MATERNAL HEALTH TRACER

3.3.1. Demographic characteristics of MH tracer

Table 15: Demographic characteristics of Maternal Health Tracer

VARIABLES	N = 359	
	n	%
Age category (in years)		
≤ 20	40	11.1
21 – 30	231	64.4
31 – 40	88	24.5
Marital status		
Never married (single)	247	68.8
Married (including those who live with their partners, divorced, separated and widows/widowers)	112	31.2
Education level		
No schooling	4	1.1
Primary	16	4.5
Secondary	322	89.7
Tertiary	17	4.7

In the sub district of Johannesburg, a total of 359 mothers were interviewed from three different health facilities; Facility A: n = 273 (76.04%), Facility B: n = 41 (11.42%) and Facility C: n = 45 (12.53%).

The majority of them, 327 mothers (91.09%) were born in South Africa, and of whom, 206 (62.99%) were born in Gauteng while the remaining 121 (37.01%) were born in other

provinces. The mothers' age was between 18 and 40 years with a mean age mean of 26, 8 years (5.5 Std. Dev.).

Of the 359 mothers, 43 (11.98%) were themselves the HHH., The HHH were aged between 23 and 94 years with a mean age of 44.8 years (14.1 Std. Dev.). The education level of the HHH was recorded for 249 mothers, and 18.8% did not have education at all. The HHH with primary, secondary and tertiary education were 39 (15.7%), 155 (62.2%) and 8 (3.2%) respectively. On average those mothers were living with at least two children aged less than 18 years old (1.7 Std.Dev.). An average of three adults (1.5 Std.Dev.) per household was found. Table 15 presente other demographic characteristics.

3.3.2. Socio-economic status (asset index) of MH tracer

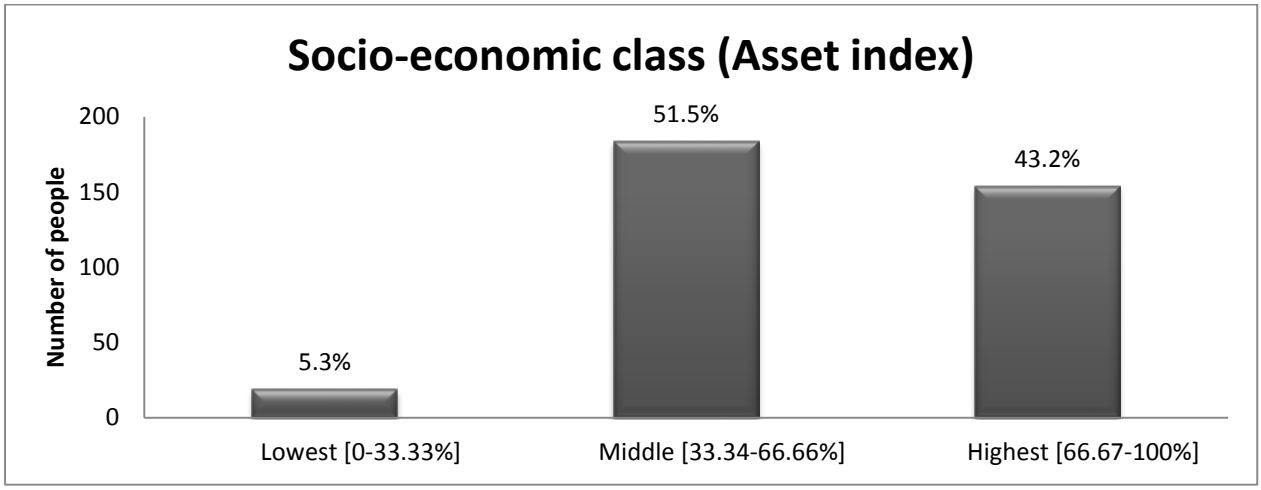


Figure 5-Socio-economic status of MH tracer

Of the 359 mothers, 357 had complete records on dwelling characteristics, household income and expenditure. The majority (95%) were falling in middle or highest SES. Figure 5 presents the socio-economic status of MH tracer.

3.3.3. Clinical characteristics of MH tracer

Almost all mothers, 346 (96.38%) attended ante-natal care (ANC). However, most of them (83.52%) presented for the first time to ANC late; i.e. in the second or thr third trimester of pregancy as per WHO/NDOH guidelines (59, 60). Table 16 presents other clinical characteristics.

3.3.4. Acceptability index of maternal health tracer

The complete records of MH-provider acceptability variables were available for 331 mothers for whom the MH-provider acceptability index was calculated. The MH-service acceptability index was calculated for 319 mothers who had complete records of MH-service variables. The records of MH-community acceptability variables were available for 312 mothers for whom the MH-community acceptability index was calculated. The MH-overall acceptability index was calculated for 262 mothers who had complete records of all acceptability variables. Table 17 presents the acceptability index for each element of acceptability as well as the overall acceptability index for MH tracer.

Table 16: Clinical characteristic of MH tracer

VARIABLES	N=359	
	n	%
Parity		
Nulliparous	137	38.2
Primiparous	117	32.6
Multiparous	105	29.2
HIV status		
Negative	194	54.0
Positive	66	18.4
Unknown	99	27.6
Told about warning signs		
No	19	5.3
Yes	340	96.4
Delivery well managed perception		
No	36	10.0
Yes	322	89.7
Unknown	1	0.3
Baby died during delivery		
No	306	85.3
Yes	53	14.7

Table 17: Acceptability index for MH Tracer

MH care acceptability index	*MH care acceptability elements*							
	MH-provider		***MH-service***		***MH-community***		***MH-overall***	
	n	%	n	%	n	%	n	%
Low acceptability[0-66.66%]	12	3.6	204	63.9	10	3.2	26	9.9
High acceptability[66.67-100%]	319	96.4	115	36.1	302	96.8	236	90.1
TOTAL	**331**	**100.0**	**319**	**100.0**	**312**	**100.0**	**262**	**100.0**

3.3.5. Factors associated with acceptability index for Maternal Health Tracer

3.3.5.1. Factors associated with MH-provider acceptability

a. Simple logistic regression models results

The results from simple logistic regression models showed that the perception of well-managed delivery and socio-economic class were two factors associated with high MH-provider acceptability of MH tracer. The mothers who thought that their delivery was well-managed were 7.7 more likely to have high MH-provider acceptability than those who did not think that their delivery was well-managed (p = 0.001). It was also discovered that the mothers from the middle SES were 7.5 more likely to have high MH-provider acceptability those from low SES (p = 0.034).

Table 18: Factors associated with MH-provider acceptability from a health policy perspective

Characteristics	OR	Z	P	95% CI	Obs.
Relation to HHH (compared to mothers who are HHH)					
Staying with the partners	2.8	+1.25	0.231	0.549 – 14.687*	330
Staying with family members	2.3	+1.12	0.263	0.542 – 9.455	
Age group (compared to 18-20 years)					
21-30 years	2.7	+1.17	0.241	0.512 – 14.353*	297
Booked (compared to booked mothers)					
Unbooked mothers	0.5	-0.66	0511	0.574 – 4.144	263
Baby died (compared to No)					
Yes	0.5	-0.92	0.356	0.139 - 2.034	331
***Education (compared to no schooling)**					
Tertiary education level	0.5	-0.70	0.484	0.562 - 3.910	330

*: wide CI probably due to the small sample size

There was no statistical significant association between high SES and MH-provider high acceptability. Table 18 presents the factors associated with MH-provider acceptability from a health policy perspective.

b. Multiple logistic regression models results

The multiple logistic regression models performed for 329 mothers with complete records, showed that the perception of well-managed delivery and socio-economic class maintained their statistically significant association as follows:

- Perception of well-managed delivery: the mothers who perceived that their delivery to be well-managed were 7.6 times more likely to have high MH-provider acceptability than those who did not (p=0.002).
- Socio-economic class: the mothers from the middle SES were 7.4 times more likely to have high MH-provider acceptability than those from the low socio-economic class (p=0.043).

3.3.5.2. Factors associated with MH-service acceptability

a. Simple logistic regression models results

Facility of ANC attendance, age group and parity were the factors found to be statistically significantly association with MH-service acceptability.

Mothers attending ANC at facility C were 3.8 more likely to have high MH-service acceptability than those attending at facility A (p = 0.003). The mothers aged between 31 to 40 years old were 3.7 times more likely to have high MH-service acceptability than those aged 20 years old and below (p = 0.009). Similarly, the mothers over 40 of age were 3.4 times more likely to have high MH-service acceptability than the mothers aged 20 years and

bellow (p = 0.024). Multiparous mothers were 2.3 more likely to have high MH-service acceptability than nulliparous mothers (p = 0.005). Factors associated with MH-service acceptability from a health policy perspective are listed below:

- Education level: the mothers with tertiary education were 2.7 times more likely to have high MH-service acceptability than those without schooling (p= 0.053).
- Age group of the head of the household: the mothers whose HHH were aged more than 40 years were 2.1 times more likely to have high MH-service acceptability than those whose household heads were aged 40 years and less (p=0.069)

b. Multiple logistic regression models results

The factors that showed statistically significant association with MH-service acceptability are presented below:

- Health facility of attendance: the mothers who attended at the facility C were 2.8 times more likely to have MH-service high acceptability than those attended at facility A (p=0.028).
- Maternal parity: multiparous mothers were 2.2 times more likely to have MH-service high acceptability than nulliparous ones (p=0.032).

3.3.5.3. Factors associated with MH-community acceptability

a. Simple logistic regression models results

The awareness of the warning signs of pregnancy complications and attending ANC were the two factors found to be statistically significant associated with MH-community acceptability. The mothers who were told about the warning signs of pregnancy complications were 8.2 times more likely to have high MH-community acceptability (p =

0.004). Table 19 presents factors associated with MH-community acceptability a health policy perspective.

Table 19: Factors associated with MH-community acceptability from a health policy perspective

Characteristics	OR	Z	P	95% CI	Obs.
Socio-economic class (compared to low)					
High socio-economic class	4.3	+1.16	0.246	0.367 – 49.895*	311
Transport (compared to walking to clinic by foot)					
Arriving at clinic by ambulance	3.8	+1.52	0.128	0.681 – 21.393*	312
Adults staying in the household (compared to <3)					
≥3 adults (> 18 years)	2.6	+1.38	0.168	0.667 – 10.359*	312
Relation to heads of households (compared to HHH mothers)					
Staying with the partners	2.4	+0.87	0.385	0.329 – 17.819*	311
HIV status (compared to negative status)					
Positive HIV status	2.3	0.78	0.433	0.281 – 19.389*	228
Age group (compared to ≤20 years)					
Mothers aged ≥ 31 years	0.4	-0.82	0.411	0.045 – 3.553	312
Children staying in the household (compared to <2)					
≥2 children (< 18 years)	0.3	-1.08	0.282	o.397 – 2.559	312

*: wide CI probably due to the small simple size

b. Multiple logistic regression models results

The analysis of multiple logistic regression models failed to demonstrate any factor statistically significant association with MH-community acceptability.

3.3.5.4. Factors associated with MH-overall acceptability

a. Simple logistic regression models results

It was noted that when age was increased by 1 unit, the MH-overall acceptability for MH decreased by 0.1 (OR=0.9 and p = 0.045). The mothers who were not financially helped were 3.3 times less likely to have high MH-overall acceptability than those who were financially helped (OR=0.3 and p = 0.048).

Table 20: Factors associated with MH-overall high acceptability from a health policy perspective

Characteristics	OR	Z	P	95% CI	Obs.
Relation to HHH (compared to mothers who are HHH)					
Staying with the partners	2.9	+1.69	0.090	0.843 – 10.531	262
transport (compared to walking to clinic by foot)					
Going to clinic with private car	2.5	+1.78	0.076	0.908 – 7.141	262
Arriving at clinic by ambulance	2.6	+1.95	0.051	0.994 – 6.843	
Delivery well-managed (compared to No)					
Yes	2.0	+1.29	0.197	0.696 – 5.799	262
HIV status (compared to negative status)					
Positive HIV status	2.0	+1.09	0.277	0.567 – 7.288	193
Financially helped by the partner (compared to No)					
Yes	2.0	+1.06	0.290	0.564 – 6.792	262
Financially helped by the boyfriend (compared to No)					
Yes	2.0	+1.56	0.119	0.846 – 4.359	262
Baby died (compared to No)					
Yes	0.5	-1.57	0.117	0.185 – 1.207	262
Parity (compared to nulliparous)					
Primiparous	0.5	-1.41	0.160	0.186 – 1.319	262
Age group (compared to ≤20 years)					
Mothers aged ≥ 31 years	0.3	-1.51	0.132	0.064 – 1.433	262

From a health policy perspective, the factors found to be associated with MH-overall acceptability are shown in table20.

b. Multiple logistic regression models results

There was no factor found to be statistically significant associated with MH-overall acceptability.

3.3.6. Perception of pregnant mothers about acceptability of MH-service

Seven mothers, aged from 20 to 32 years, were interviewed in-depth about their experiences on acceptability of MH services. These mothers' perceptions are presented in the following paragraphs.

3.3.6.1. Perceived mother-provider interaction

Patient-health provider interactions were generally perceived as an important barrier for acceptability of MH services.

Indeed, three out of seven mothers expressed their fear to go to the clinic because of the rumors heard about negative health providers' attitude toward the patients. For example, U2-A-CEOC-PA10 thought that most of the nurses were very rude and insensitive towards the patients. In this regard, another woman said:

> *I should go to the clinic you see, but then I thought that they were going to shout at me and accuse me of not booking in time and maybe not even attend me, so I told myself that I will see what I do if it takes for me to give birth by myself then so be it because it doesn't seem like I have a choice. (U2-A-CEOC-PA9).*

Of the remaining four mothers, two went to the clinic and were inadequately treated or witnessed other patients being treated with lack of respect by health providers. , as illustrated in the following quotes:

> *And even the way they were treating us it was not a proper way of treating other people. We don't deny that we are there to get help but that is not the way they should offer us their help… they don't respect us at all, it's like we are there to bother them, you can't wait to be out of the clinic sometimes because of the way they treat people (U2-A-CEOC-PA13).*
>
> *… one thing that bored me is that there was this lady who did not understand English meaning these medical terms they use, I don't remember what they asked her but you know they made her a joke out of her. All the nurses were laughing at her… this lady didn't know anything that is why she was asking. I was very hurt by that, how they laughed at her that was very embarrassing* (U2-A-CEOC-PA10).

The theme of feeling powerless, in the face of health providers' negative attitudes and perceived inadequate care, came out 18 times in th emothers'narratives. For example, U2-A-CEOC-PA13 said that the pregnant mothers are 'used to nurses' rudeness and other bad care and must acquiesce because they cannot do anything about it. U2-A-CEOC-PA12 thought those pregnant mothers could not take [legal] action, because during delivery they will have to go to those nurses and implore for help.

Despite negative experiences generally for most of the mothers, two confirmed meeting friendly, non-judgmental, supportive, kind and sympathetic nurses (U2-A-CEOC-PA9 and U2-A-CEOC-PA13).

Interestingly, one mother who was scared to go to the clinic based on what other people were saying about their bad experiences with the clinic staff, changed her perception about nurses after getting very good care:

> *You know now I feel like I should have gone to the clinic and not listen to people because now I passed my own judgement to those people and only to find that they were not as bad as I thought or as I was told they were.* (U2-A-CEOC-PA9).

3.3.6.2. Perceived mother-service interaction

Five out of seven mothers perceived that the health service was inadequately organized. In some instances there was drug stock out and three mothers said that they did not get pain relief because they were out of stock. Furthermore one mother had to buy the pregnancy test kit from private pharmacy because there were no pregnancy tests kits at the clinic.

The ambulance services were not appreciated by all mothers. In some cases ambulances came very after a long wait or simply not at all, especially during night or into certain areas such as hostels which were perceived to be dangerous.

> *…but the ambulance did not come till the next day … you can die while waiting for an ambulance to come get you* (U2-A-CEOC-PA12).

However, two mothers recognized that security issues could have a negative effect on ambulance services especially at night (U2-A-CEOC-PA12).

The health workers strike in public hospitals and clinics over the period of 2010 (61), , was perceived as adversely affecting health service delivery at the time of REACH study. The strike was perceived as the reason for the use of fewer ambulances than usual and a backlog of patients with health workers overworking because others were in strike as illustrated in this quote:

There was a shortage of beds, that room that I was in the beds were full and it was a busy night and it at the time when the doctors were on strike….there were no more doctors and I think if there were two midwife's there would have been a difference [be]cause there was only one midwife who was in charge for about ten people and two nurses helping there you… they are over worked (U2-A-CEOC-PA10).

3.3.6.3. Perceived mother-community interaction

There were mixed feelings about family or partners' support during pregnancy. Four women confirmed to get strong support from the father of their children and their families. In this regard, one mother said:

*I have a boyfriend who was very supportive….. with my boyfriend support I started getting over that anxiety and worry about the implications of [HIV] positive and pregnant…. At home, it [pregnancy] did not affect my family life as much, instead It brought them together…. when everyone realized that I was pregnant all of sudden my younger brother who could not [do anything for me] without complaining…, but when I was pregnant I asked for a glass of water he would jump! ... I had a very strong support system, without my close family and my boyfriend I don't honestly think that I would have survived (*U2-A-CEOC-PA10).

The remaining three mothers reported of not getting support or being in conflict with their families or partners.

Another important issue that came from the mothers' narratives was that pregnancy is not separate from daily life (U2-A-CEOC-PA13). Often a woman is expected to look after the house and do all the chores such as cleaning, laundry and cooking, even though she is pregnant. This situation can be very stressing as U2-A-CEOC-PA13 said:

CHAPTER. IV. DISCUSSION

The goal of this study was to investigate the level of health service acceptability for patients and to explore the factors as well as inequities associated with acceptability among patients seeking HIV, TB and Maternal Health services in a sub-district of Johannesburg between 2008 and 2010.

The study enrolled a total of 987 participants for quantitative exit-interviews and clinical record reviews (331-HIV, 297-TB and 359-Maternal Health). In addition, fifteen participants took part in-depth qualitative interviews, including eight for HIV and/or TB and seven for Maternal Health services. Qualitative analysis allowed a deeper examination and understanding of the quantitative findings. For each tracer, overall acceptability was analysed alongside the specific elements of acceptability.

4.1. Overall acceptability of health care: Integrating findings across the tracers.

The results showed that the overall acceptability was generally low among the HIV tracer compared to the high overall acceptability noted among TB and MH tracers.

With respect to HIV tracer, the results showed overall low acceptability. These results were in keeping with the findings from a study conducted in KwaZulu-Natal as part of the broader REACH project that reported the low acceptability of care among HIV positive patients (48). This low acceptability among HIV tracer population is explained partly by the chronic treatment as well as the stigma at the time of REACH data collection. Stigma is a well-known major barrier to acceptability of HIV care (62, 63). However, it is worth mentioning that acceptability of HIV health services in Africa, including South Africa, has increased since the time of the study (64). This might have implications for overall acceptability of ART services:

HIV services became more widely available (before ART services were mainly centralised) , more trained staff and decreasing -but still significant- HIV related stigma since the time of REACH study(9).

High overall acceptability for TB is partly explained by the fact that TB treatment is contained, relatively 'short-term' and curative. Furthermore, stigma seemed less of an issue for those affected by TB – a finding born out in Roger's (2012) study on stigma among co-infected HIV and TB patients in South Africa:

> *'…I don't think about I'm going to tell my mum I'm taking this [antiretrovirals] now. Because TB, people don't worry about TB, because TB they know that you have to get tablets, it's finished. But HIV, you must know that, I think you know, once you get HIV, people start to run away from you. That's what makes us scared to tell that much.'*(65).

With reference to MH-overall acceptability, despite a few stillbirths, most of the mothers experienced high acceptability. This wasnot unexpected given that a successful delivery is often perceived as a positive outcome by patients and communities as decribed by Kang (2014) (66).

4.2. Provider acceptability

With regard to provider acceptability, the results showed consistently high provider acceptability across the three tracers. This is in contrast with literature that reported unacceptable patient-provider interactions (48, 67, 68). This variance may be due to the fact that some studies attribute poor provider acceptability to only one aspect of provider acceptability such as provider disrespect toward the patient (48) or provider dislike or inattention toward the patients (67). However, in this study, an attempt was made to

consider a range of aspects of provider acceptability (in composite: 9 aspects for ART/TB provider acceptability, and 12 aspects for MH provider acceptability) (Table 1 and 2).

4.3. Service acceptability

In terms of service acceptability, as opposed to high service acceptability noted among TB tracer population, the results showed low acceptability for HIV and MH-service

Considering HIV-service, the low acceptability may be explained by long queues and somewhat well-organised HIV services. This led some patients to leave the clinic without getting treatment as expressed in some of patients' experiences.

It is worth noting that in South African context, TB services were much more decentralised and available than HIV services at the time of the REACH study. Thus, as a matter of 'convenience', service acceptability are expected to be higher for TB than HIV. Similarly, another study on REACH data, found high satisfaction for TB services than ART services, with 65% of HIV patients reporting the long queues to see the health worker compared to only 40% of TB patients ($p < 0.001$) (48). Although the MH services were as available as TB services , the low MH-service acceptability is partially explained by the poor quality of ambulance services as one mother said: '…but the ambulance did not come till the next day … you can die while waiting for an ambulance to come [to] get you'(U2-A-CEOC-PA12). The long distance to the facility is a well-recognised barrier to maternal health in Africa where the transport during childbirth –even in a well-resourced urban area- remains a challenge (69-71). Shortages of beds, staff and equipment for maternal health services are also well-documented problems in developing countries (72), including South Africa (69, 73). In this regard, one of the mothers said: 'There was a shortage of beds, that room that I was in, the

beds were full and it was a busy night ...there was only one midwife who was in charge for about ten people' (U2-A-CEOC-PA10) .

4.4. Community acceptability

The results showed high community acceptability among TB and Maternal Health users. However, only 2.2% of individuals had high community acceptability among HIV tracer population. The low HIV- Community acceptability may be explained by the impact of the stigma on community acceptance and lack of support toward HIV positive patients , at the time of REACH study (62). Nevertheless, it was found that the Health policies promoting ART-buddy, ART-support group and home visit were found to increase high community acceptability. At the same time, ART-support groups and home visits were found to improve HIV-overall acceptability. These results confirmed the importance of community networks and support in HIV care acceptability as reported by other studies (74, 75).

4.5. Factors associated with high level acceptability of care across the tracers

The following section discusses the study findings in light of identified factors associated with high level of acceptability of care among the study population. These factors include demographic, socio-economic and clinical characteristics.

4.5.1. Demographic factors

4.5.1.1. Age

This study found that the age was an important factor associated with high acceptability of health services across all three tracers. Compared to patients aged 40 years and below, the patients over 40 years were 3.1 times more likely to have high HIV-provider acceptability

from health policy perspective. They were also 1.7 times more likely to have HIV-service high acceptability (p = 0.026) than the former. These results are consistent with a systematic review which revealed that the older age category is associated with high acceptance of starting ART in sub-Sahara Africa (76).

In contrast to the HIV acceptability findings, TB- overall acceptability was affected negatively by age from a health policy perspective. The patients over 40 years were 5 times less likely to have high TB-overall acceptability than those aged 40 years and below. Furthermore, the results revealed that as age (continuous variable) increased by 1 unit, the TB-community acceptability decreased by 0.6 units (p = 0.003). These results are inconsistent with Onyeonora et al.' s (2015) findings reporting that younger patients (age < 40 years) have less overall satisfaction of TB health services than older patients (77).

Regarding the MH tracer population, it was noted that the mothers aged between 21 to 30 years were 2.7 times more likely to have high MH-provider acceptability than the mothers aged between 18 to 20 years from health policy perspective. Similarly, the mothers over 40 years were 3.4 times more likely to have high MH-service acceptability than the mothers aged between 18 to 20 years (p= 0.024). These findings are supported by other studies, including Emelumadu et al. (2014) who found that older mothers were more likely to use maternal health service in South East Nigeria (78). In South Africa, Fatti et al. (2014) reported that adolescent mothers were more likely to present to the health service for the first time during labour (79). In other words, they did not attend the ANC. The same study revealed also that young women had reduced rate of antenatal ART uptake -reflecting poor uptake of maternal health services-(79). The poor acceptability for MH-provider and MH-service among teen or young mothers (<20 years) could be due to the fact that this category

is 2 to 3 times stigmatized at the health facilities in relation to unwanted pregnancies (80). It was observed that, as the age (continuous variable) increased by 1 unit the MH-overall acceptability decreased by 0.1 units (p = 0.045). This is partly explained by the fact that as the maternal age increases as reported by DeVoe et al. (2009) (81). These results corroborate with other studies who reported the patient age influence on patient-provider and health services interactions (82-84).

4.5.1.2. Gender

Concerning the HIV tracer population, it was found that male patients were 1.9 times more likely to have HIV-service high acceptability than females (p = 0.023). However, Muggling et al. (2012) reported that male patients were rather less satisfied with HIV services in comparison to females. The same study indicates that the patient 'loss' to ART program is higher in men than in women (76). Moreover, Zachariah et al. (2011) also found considerable attrition in ART preparation phase among male patients in Malawi and Kenya (85). The difference between the current study and aforementioned ones could account for the gender power inequality. Indeed, a study conducted in South Africa shows that the female patients feel powerless to express their opinion about HIV services (86). Furthermore, Magnus et al. (2013) reported that womenare more likely to have high HIV stigma score ($p<0.01$) compared to men (67). This situation could hamper HIV-service acceptability for female patients.

Gender was also associated with acceptability within TB tracer. The results from the current study showed that male patients were 2.5 times less likely to have high TB-community acceptability than females (p=0.029). These results are in agreement with the findings from

another REACH-based study conducted in KwaZulu Natal sub district where male TB patients are less satisfied than females in relation to TB health services (48).

4.5.1.3. Marital status

The current study did not find any statistically significant association between marital status and acceptability of HIV and TB health services. Nevertheless, it was noted, from health policy perspective, that the single mothers were 3.4 times less likely to have high -overall acceptability compared to married. These results could illustrate the inadequate support from partners as explored in mothers' qualitative narratives. The lack of partner support may lead to low MH-community acceptability as pointed out by Hodgkinson et al. (2014 (78).

4.5.1.4. Education level

The results of the current study revealed an association between health care acceptability and education level. Individuals with secondary education level were 18 times more likely to have high HIV-provider acceptability ($p = 0.03$) than those with no schooling. These results are consistent with the reported improved good patient-provider interface among educated HIV positive patients by Silal et al. (2012) (87).

However, this situation changes in relation to HIV-community acceptability. In fact, compared to individuals with no schooling, those with primary, secondary and tertiary education levels were 6.7, 3.1 and 3.3 times respectively less likely to have high HIV-community acceptability. These results could be explained by the high HIV related stigma among educated population (88).

Concerning TB tracer, the results revealed that individuals with primary and secondary education level were 2.2 and 2.8 times respectively less likely to have high TB-service acceptability than those with no schooling. These results are in agreement with Chimbindi et al. (2014) who reported high quality of communication TB among educated TB patients (48).

With regard to MH tracer, it was noted that mothers with tertiary education were 2.7 more likely to have high MH-services acceptability than their counterparts with no schooling. These findings are in agreement with other studies (78, 81).

4.5.1.5. Socio-economic class

Considering HIV Tracer population, the results showed that the individuals from middle socio-economic class were 26.4 more likely to have high HIV-provider acceptability than those from low socio-economic class ($p = 0.024$ and 95% CI: 1.546 – 450.308). The wide confidence interval might be due to the small sample size (57). However, a meta-analysis study conducted in sub-Sahara Africa showed higher rate of loss to ART program among the patients from lower socio-economic class (76).

Regarding TB tracer, the results did not show any statistically significant association between asset index and acceptability of TB health care. However, compared to patients from low socio-economic class, it was noted that those from middle socio-economic class were 2.5 times less likely to have high TB-service acceptability. They were also 3.3 times less likely to have high TB-community acceptability than the former.

Regarding MH tracer, the mothers from middle socio-economic class were 7.5 times more likely to have high MH-provider acceptability than their counterpartsfrom low socio-economic class ($p= 0.034$). These results were consistent with the broader findings of the

REACH project includingSilal et al. (2012) (89). Nevertheless, Silal et al. (2012) reported that the mothers who delivered at primary health care facility were 3.7 times more likely to perceive poor health provider interactions than those who delivered at tertiary hospital ($p < 0.01$). This contrast the current study results showing that women delivering at primary health care were 3.8 times more likely to have higher MH-service acceptability than those delivering at tertiary hospital ($p = 0.003$). The low MH-service acceptability at tertiary hospital could be explained by the complexity of deliveries, often under emergency circumstances for high risk pregnancies and various maternal causes of prematurity requiring caesarean section often performed at tertiary hospital (90). Furthermore, it was noted that the financial help from the partner or boyfriend was associated positively with MH-overall high acceptability from health policy perspective. These findings were consistent with the results from other studies (91, 92).

4.5.2. Household's considerations

4.5.2.1. Relation to the head of the household (HHH)

The mothers who were living with the HHH had 2.9 times higher overall acceptability than those who were the HHH themselvesThe former were also 2.8 times and 2.4 times more likely to have high MH-provider acceptability and high MH-community acceptability than the later respectively. These results are consistent with Ganle et al. (2015) who reported that the family members, mainly husbands and mothers-in-law, strongly influence decision-making about access to and use of maternal healthcare services(93). However, the qualitative narratives pointed out the negative familial influence to MH-service acceptability.

4.5.2.2. Education of the head of household

The patients whose HHH had a tertiary education were 2.6 times more likely to have high HIV-service acceptability (p=0.085) and two times more likely to have high HIV-community acceptability (p=0.357) than those whose HHH had no schooling. These results highlight the importance of HHH education in understanding HIV/AIDS and its treatment implications including emotional and financial support. HHH are very important in supporting home-based HIV care which is increasingly recognised in developing countries including South Arica (94, 95). Regarding TB tracer, the patients whose HHH had a tertiary education were 3.4 times more likely to have high TB-service acceptability than those whose HHH did not go to school (p = 0.041). The patients whose HHH had secondary education level were 8.3 times more likely to have high TB-community acceptability than the patients whose HHH did not go to school (p=0.070). These results are in agreement with studies conducted in Latin America (96, 97), in Uganda (98) and in India (99) emphasising the role of HHH education to improve acceptance of TB services.

4.5.2.3. Number of children or adults in the household:

A household of more than two children was negatively associated with high MH-community acceptability from a health policy perspective. Furthermore, women complained of continuing to do all the household chores, including to look after small children, even when they are pregnant. This situation suggests that a household with more children could negatively affect MH-services acceptability. These results are consistent with Srivastava et al.' study (2014) which reported that more than two children in the household were associated with less use of maternal health services (99).

In contrast to MH tracer, a household of two or children was associated with high HIV-community acceptability compared to a household of less than two children. Similarly, a household of three or more adults was associated with high HIV-community acceptability compared to a household of less than three adults. These results are keeping with the findings from Li et al. study (2006) reporting that the family members represent the primary support for people living with HIV/AIDS (100). However, it is noteworthy to report that, from our study qualitative narratives, there was mixed feeling about family member support. This highlights that it's not only the number of family members but the ways in which they support patients in decision-making to accept and access health services.

4.5.3. Clinical factors specific to a particular tracer

A. HIV tracer

The policy practices promoting ART collection less frequently (i.e. more than monthly) were associated with high HIV-provider acceptability than those advancing ART collection more frequently (monthly or less). These findings concurred with results from other studies (48, 101-103). Therefore, these results confirm health policy supporting ART provision for a enough time (between 1 to 3 months) between clinical visits for stable patients as also suggested by Mwami et al. (2013)(104).

Moreover, it was found that the patients who missed taking ART doses were two times less likely to have high HIV-service acceptability than those who did not (p= 0.049). These results are in agreement with findings from literature reporting that missing ART doses is an independent factor associated with poor acceptability of HIV services (105, 106)

B. TB tracer

Patients with pre-treatment smear positive were 3.2 times more likely to have high TB-provider acceptability than patients with smear negative results. This may be explained by uncertainty felt by patients with negative smear (107). Daily checking (DOTS) at clinic showed a statistically negative association with high TB-service acceptability. The observed patients were 3.8 times less likely to have high TB-service acceptability than their unobserved counterparts. DOTS requires extra-time which may negatively affect TB service acceptability. The current study results are consistent with other studies including those of the broader REACH project, such as Birch et al. (2016) who reported higher rate of missing TB treatment dose among the patients attending daily clinics for DOTS. (108). While DOTS is a well-recognised policy to prevent TB treatment resistance, these results call to exercise caution in DOTS implementation policy.

Missing a TB treatment dose was associated with poor high TB-overall acceptability. However, the results showed that missing TB clinic visits or TB treatment collection were associated with high TB-service acceptability from health policy perspective. These results were unexpected and further studies are needed to get a clear understanding.

C. MH tracer

HIV status was positively associated with high MH-overall acceptability from health policy perspective. HIV positive mothers were 2 times more likely to have high MH-overall acceptability than their HIV negative counterparts. These results are in agreement with Ganle et al.' (2015) who reported that women with HIV positive status are more likely to attend MH services than HIV negative mothers (91). Furthermore, another study done

based on REACH data has reported that HIV positive women were more likely to better interact with health providers than their HIV negative counterparts ($p<0.001$) (89).

Multiparous mothers were 2.3 more likely to have high MH-service acceptability than nulliparous mothers ($p= 0.005$). These findings are consistent with Dutamo et al.(2015) who reported that the maternal parity was significantly associated with ANC usage (109).

The results of the current study revealed that the women who were told about warning sign were 8.2 times more likely to have high MH-community acceptability than their counterparts who were not told about warning signs ($p= 0.004$). These results are keeping with Dutamo et al.' s findings (2015) about increased use of MH-service due to awareness of danger signs during pregnancy (109). The current study also revealed that the mothers whose infants died during delivery were less likely to have the high MH-overall acceptability than those who had alive infants. These results are consistent with the finding from other studies (78, 81, 89).

CHAPTER. V. CONCLUSION & RECOMMENDATIONS

5.1. CONCLUSION

The field of acceptability of health services is emerging but there are gaps including relatively little integration of elements of acceptability. Most previous studies had focussed on particular elements of acceptability. The current study attempted to analyse collectively the three elements of acceptability namely: patient-provider, patient-service organisation and patient-community interactions. Acceptability conceptual framework was developed to guide the analysis.

The present study sought to achieve the following research objectives: (i) To describe the socio-economic and demographic characteristics of patients attending HIV, TB and Maternal Health Services in a sub-district of the City of Johannesburg; (ii) To develop provider, service, community and overall acceptability indices for patients attending HIV, TB and Maternal Health Services in a sub-district of the City of Johannesburg; (iii) To identify the factors influencing the levels of determine and compare the levels of acceptability in access to HIV, TB and Maternal Health Services for Johannesburg sub-district patients using the acceptability indexes from objective 2; and (iv) To explore factors influencing inequities in acceptability of HIV, TB and Maternal Health Services among a sub-district of the City of Johannesburg population from patients' narratives.

In relation to the first objective, the results showed that the vast majority of the patients were South Africans. Most of respondents were generally young, educated, single and

falling into the middle class of SES across the three tracers. Females were more affected by HIV, but the gender was well-balanced for TB tracer.

With regard to the second objective, results of the current study revealed that over all, acceptability of health services was low for HIV tracer compared to high acceptability noted for TB and MH tracers. With regard to provider acceptability, it was noted that the acceptability was consistently high across the three tracers. For service acceptability, a low acceptability was observed for HIV and MH services as opposed to TB tracer. Concerning community acceptability, the results showed high acceptability for TB and MH tracer while a low acceptability was observed for HIV tracer.

Concerning the third objective, the findings of the present study indicated that age, gender, education of the heads of the households, the size of the households as well as the SES were key demographic and socio-economic factors influencing acceptability of health services across all the three tracers. With regards to specific clinical characteristics influencing health service acceptability, HIV acceptability was found to be influenced by ART-support group, ART buddy frequency of ART collection and missing ART doses. TB acceptability was found to be affected by daily checking DOTS, missing TB treatment dose and missing TB treatment collection. MH acceptability was found to be affected by maternal parity, being told about warning signs during the pregnancy, perception about well-managed delivery, the death of the baby and financial help.

In relation to the fourth objective, results of this study indicated that from the patients' narratives, the influence of age on acceptability of MH services could be understood through the cultural believes where for instance teen mothers are more likely to be stigmatised at clinic and home for unwanted pregnancy. The gender influence on

acceptability of HIV services is partly explained by gender power inequalities where females feel powerless to express their opinion on both sexuality and HIV/AIDS. The effect of the level of education of the head of the household on acceptability of HIV/TB services could be explained by the fact that the educated heads of household are more likely to understand the importance of the disease treatment (HV/TB as well as the required emotional and financial support. The influence of the size of the household on MH services acceptability could be explained by the cultural practices where a woman is expected to carry out all the household activities including looking after the small children even in times of pregnancy. The effect of SES on MH acceptability can be attributed to the financial requirements during pregnancy in general or in times of obstetrical emergencies.

From health system and policy perspective, there is a need to find methods and ways of including voices from those who are not accessing care. Furthermore, understanding of the provider characteristics [age, gender, training level, etc.] influence on acceptability is important to address some of health system and policy issue around service acceptability. The role of functioning of health system [infrastructure, staff, equipment and working hours, etc.] requires attention to improve acceptability of health services. The impact of the community [culture, norms, believes, etc.] is equally important for health service acceptability and should not be forgotten or neglected.

The findings were largely in agreement with many studies of individual elements of acceptability including in South Africa and those of the broader REACH project. However, particular differences were observed between the current study and some studies on acceptability of health services. Those differences are assumed to be due to the fact that the later looked at a particular element of acceptability, while the current study integrated all

three elements in analysis of acceptability through the use of composite acceptability indices. Going forward, this may assist policy makers and practitioners to address unacceptable practices and find ways to avoid inequities in acceptability of health care.

5.2. RECOMMENDATIONS

The following recommendations were made based on the specific conclusions drawn from the study:

1. Researchers

More studies integrating the three elements of acceptability and various aspects for each element are needed. This could allow to draw strong evidence and to ascertain the factors associated with the acceptability of health care services.

2. Health providers

Being at the front-line of health service delivery, the health providers are encouraged to improve patient-provider relationship by inspiring trust, confidence and empathy to the patients. Some issues of health system, such as long queues, long waiting time at the clinics for example, affect negatively HIV/TB and Maternal Health services. The health provider are encouraged to dealt with those issues by fully implementing the Patients 'Right Charter and taking into consideration the patients' age, gender, education level and socio-economic class. In addition, when providing health care services, a careful plan of schedules is recommended to avoid many clinical activities at the same time or the same day. It is also important to think about staff allocation to meet the clients' needs.

3. Health policy makers

The health policy makers play important role in health system and policy. They are among the main actors in designing a number of health policies designed with the intent to improve health service delivery. Those health policies include Comprehensive Primary Healthcare Service (2001), District Hospital Service Package (2002), National Core Standards for Health establishments (2010) and National Health Insurance essential Health package (2012). The present study recommends the efforts to consider "acceptability lens" in designing, implementing and monitoring health policies across all levels of health system.

4. Community leaders

The community leaders are respected and influence a healthy life in their communities. The current study recommends a more active involvement of the community leaders in strengthening the health facility committees. As the bridge between the health facilities and the community, the community leaders are encouraged to actively fight against stigmatising attitudes toward HIV and TB patients, but also toward teen mothers with unwanted pregnancies. The community leaders are recommended to encourage their community to offer support and help among their community members to accept and use available health services.

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APPENDICES

Appendix A: Exit interview questionnaire for ART/TB Services

SECTION 1: SOCIOECONOMIC AND DEMOGRAPHIC BACKGROUND QUESTIONS ABOUT THE RESPONDENT, HIS/HER HOUSEHOLD AND HOUSEHOLD HEAD

READ OUT:

I am going to start by asking you a few questions about you and your household. When I talk about your household, I am including all the people who live in your house and who share the same food with you.

When I talk about your household head, this is the person who usually makes the important decisions in the household.

1.1 Sex	Male	1
	Female	2

1.2 Note the race of the respondent. If you are not certain, ask: How would you describe yourself racially?	African/Black	1
	Coloured	2
	Asian/Indian	3
	White	4
	Other (specify)	

1.3 What was your age at your last birthday? Fill in one block only	_____ Year born	_____ Years

1.4 Who is the head of your household? By this, I mean, who is the person who usually makes the important decisions in the household. Indicate relationship e.g. father, mother not name.	_____ Relationship	**If respon-dent HHH, go to 1.9**

1.5 Code sex of HHH. If not clear ask: What	Male	1
	Female	2

is the sex of your HHH?		
1.6 Code position in HH of respondent. If unclear, ask: What is your position in the household, in relation to the household head such as **…**read out a few relevant options. Tick one block only	Head/acting head	1
	Husband/wife/partner	2
	Son/daughter/stepchild/adopted child	3
	Brother/sister/step brother/step sister	4
	Father/mother/step father/step mother	5
	Grandparent/great grandparent	6
	Grandchild/great grandchild	7
	Other relative (e.g. in laws or aunt/uncle)	8
	Non-related persons (tenant, boarder, lodger)	9
	Don't know	99
	Other (specify)	

1.7 What was the age of your HHH i.e. husband / father / mother etc. at his/her last birthday? fill in one block only	_____ Year born	_____ Years

1.8 Does your HHH i.e. husband / father / mother etc. stay with you for at least 2 weeks each month?	Yes	1
	No	0

1.9 What is your current marital status? Tick one block only	Married	1
	Living with partner	2
	Widow/widower	3
	Divorced or separated	4
	Never married (single)	5
	Other (specify)	

1.10 What is YOUR highest	**Type of education**	**You**	**Your HHH**

level of education? Tick one block only If the person is NOT the HHH ask What is the highest level of education of your HHH i.e. husband / father / mother etc.	No schooling	0	0
	Highest grade passed in school (1-12)		
	Completed diploma/certificate	13	13
	Completed degree	14	14
	Other (specify)	**You**	**Your HHH**

1.11 Are you currently employed working or earning money? If the person is NOT the HHH ask Is your HHH i.e. husband / father / mother etc. currently employed?	**Type of employment**	**You**	**Your HHH**	**If no or don't know go to 1.13**
	Yes, full-time	1	1	
	Yes, part-time	2	2	
	No	3	3	
	Don't know	99	99	

1.12 If respondent employed ask: Are you self-employed or do you work for someone else? If HHH employed, ask Is your HHH i.e. husband / father / mother etc. self-employed or does HE/SHE work for someone else?	**Type of employment**	**You**	**Your HHH**	**Go to 1.14**
	Self-employed	1	1	
	Employee	2	2	
	Don't know	99	99	

1.13 If respondent not employed ask: What are the reasons that you are not employed?	**Reason**	**Yes**	**No**
	Studying	1	0
	Looking for work	1	0
	Retired or pensioner	1	0
	Sick or injured	1	0

Tick all that apply "Yes" and others "No"	Pregnant or caring for own children	1	0
	Caring for other children	1	0
	Caring for sick/injured	1	0
	Retrenched	1	0
	Nothing	1	0
	Don't know	99	
	Other (specify)		

1.14 Including yourself, how many adults (18 years or older) live in your household? When I talk about your household, I am including all the people who live in your house and who share the same food with you.	
1.15 How many children younger than 18 years live in your household?	

1.16 Does anyone in your household receive a government grant OR income from the government such as…….read out each option and tick yes or no. IF YES ask: How many of each type of grant is received (i.e. how many people receive each?)	**Type of grant**	**Yes**	**No**	**If yes, number received**
	Unemployment insurance (UIF)	1	0	
	Worker's compensation	1	0	
	State old age pension	1	0	
	Disability grant	1	0	
	Child support grant	1	0	
	Care dependency grant	1	0	
	Foster care grant	1	0	
	Grant in aid	1	0	
	Social relief	1	0	
	Other	1	0	
	Don't know		99	

If no DG go to 1.19

1.17	Yes	1

If no go to 1.19

If someone in the household receives a disability grant, ask Is it you that receives the disability grant?	No	0 ←
1.18 If YES ask: What is the reason that you receive this disability grant?		
1.19 If NO ask: Have you applied for a disability grant?	Yes	1
	No	0
1.20 Where were you born? READ OUT I know this is a sensitive question to ask at this stage, but we are asking because we want to see if health services treat South Africans differently to those who are not from South Africa.	South Africa	1
	Other (specify) ←	If other go to 1.22
1.21 If respondent born in South Africa, ask: Which province were you born in? Use current province borders	Western Cape	1
	Eastern Cape	2
	Northern Cape	3
	Free State	4
	KwaZulu-Natal	5
	North West	6
	Gauteng	7
	Mpumalanga	8
	Limpopo	9
	Don't Know	99
1.22 If respondent not born in South Africa, ask: Do you have a South African ID document?	Yes	1
	No	0 ← If no go to 1.23
1.23	Yes	1

Are you covered by a Medical Aid or any scheme that helps you pay for health-care services or medicines?	No	0

SECTION 2: ACCEPTABILITY

2.1 Have you told anyone besides the health care workers that you have HIV/TB?	Yes	1
	No	0 ← If no go to 2.3
2.2 If YES Who have you told about your TB? Indicate relationship e.g. sister, not name.		
2.3 To what extent do you agree with the following statement: "I have all the support from my partner that I need to cope with my illness"?	Agree	1
	Disagree	2
	Don't know	99
	Not applicable	98
2.4 "I have all the support that I need from my family"	Agree	1
	Disagree	2
	Don't know	99
	Not applicable	98
2.5 "I have all the support that I need from my friends"	Agree	1
	Disagree	2
	Don't know	99
	Not applicable	98
2.6 Do you feel that people in the community judge you Decreasely for attending this facility for your HIV/TB treatment?	Yes	1
	No	0
	Don't know	99
2.7 In general, when you need to seek healthcare, what do you prefer:	Nurse	1
	Doctor	2
	Indifferent	3

c) To see a nurse in a nearby clinic or d) To travel further to see a doctor	Don't know	99
5.8 In this clinic are you able to talk to the doctors or nurses in private?	Always	1
	Sometimes	2
	Never	3

READ OUT: Can you tell me whether you agree or disagree with these statements when thinking about your general experience in this clinic?

2.9 The queues to see a doctor or nurse are too long at this facility	Agree	1
	Disagree	0
	Both agree and disagree	2
	Don't know / not sure	99
2.10 The doctors and nurses (*health workers)* discussed the treatment fully with me	Agree	1
	Disagree	0
	Both agree and disagree	2
	Don't know / not sure	99
2.11 It is a problem that the *health workers* DO NOT speak my language.	Agree	1
	Disagree	0
	Both agree and disagree	2
	Don't know / not sure	99
2.12 I find it easy to tell the *health workers* when I have missed taking my tablets	Agree	1
	Disagree	0
	Both agree and disagree	2
	Don't know / not sure	99
	Not applicable	98
2.13 The *health workers* are too busy to listen to my problems	Agree	1
	Disagree	0

	Both agree and disagree	2
	Don't know / not sure	99
2.14 Patient information is kept confidential in this clinic	Agree	1
	Disagree	0
	Both agree and disagree	2
	Don't know / not sure	99
2.15 Some staff DO NOT treat patients with sufficient respect	Agree	1
	Disagree	0
	Both agree and disagree	2
	Don't know / not sure	99
2.16 The health workers I see respect me	Agree	1
	Disagree	0
	Both agree and disagree	2
	Don't know / not sure	99
2.17 The facilities (including waiting area and toilets) are dirty	Agree	1
	Disagree	0
	Both agree and disagree	2
	Don't know / not sure	99
2.18 How satisfied were you with the service today?	Very satisfied/ Satisfied	1
	Neither satisfied nor dissatisfied	2
	Dissatisfied/ Very dissatisfied	3
	Don't know	99
2.19 Since you first started coming to this facility, have you ever left without being helped?	Yes	1
	No	0 ← **If no go to 2.21**
2.20 IF YES		

Can you explain what happened?			
2.21 Have you ever <u>not used</u> HIV/TB services when you needed them?	Yes	1	
	No	0	If no go to 2.23
2.22 If YES Why did you not use HIV/TB services? Include all factors – personal and facility-related			

2.23 How do you think the service in this clinic could be improved? Tick all that apply "Yes" and all others "No"	**Improvement**	**Yes**	**No**
	Shorter queues	1	0
	More health workers	1	0
	Cleaner facilities	1	0
	Better patient facilities (toilets, waiting room area etc)	1	0
	Don't know	99	
	Other (specify)		

SECTION 3: DWELLING CHARACTERISTICS, HOUSEHOLD INCOME, EXPENDITURE AND HOUSEHOLD ASSETS

READ OUT: Finally, we want to ask you some questions about the characteristics of the house where you live and type of facilities available within your household

3.1 Where do you live?	_____village or community _____area or township	
3.2 Which best	House or brick structure on a separate stand or yard or on farm	1
	Traditional dwelling/hut/structure made of traditional materials	2

describes the type of house in which you live? Clarify answer Tick one only	Flat or apartment in block of flats	3
	Town/cluster/semi-detached house (simplex, duplex or triplex)	4
	Unit in retirement village	5
	Dwelling/house/flat/room in backyard	6
	Informal dwelling/shack IN the backyard of a formal house	7
	Informal dwelling/shack NOT in backyard e.g. in an informal/squatter settlement or on farm	8
	Room/flatlet not in backyard but on a shared property e.g granny flat	9
	Caravan/tent	10
	Worker's hostel	11
	Other (specify)	

3.3 What is the main material of your house's walls? Clarify answer Tick one only	Bricks & plaster/finished	1
	Bare brick/cement block	2
	Corrugated iron/zinc	3
	Wood	4
	Plastic	5
	Cardboard	6
	Mixture of mud and cement	7
	Wattle and daub	8
	Mud	9
	Other (specify)	

3.4 What is the main material of your house's roof?	Tiles	1
	Corrugated iron/zinc	2
	Thatching	3
	Asbestos	4

Clarify answer Tick one only	Plastic	5
	Cardboard	6
	Other (specify)	
3.5 How many rooms, including kitchens, does your house have? Interviewer, probe and exclude bathrooms, sheds, garages, stables, etc. from the total unless people are living in them		
3.6 What is the main source of **drinking water** for members of your household? Clarify answer Tick one only	Piped (tap) water in dwelling	1
	Piped (tap) water on site or in yard	2
	Borehole on site	3
	Rain water tank on site	4
	Neighbour's tap	5
	Public/communal tap (either free or paid)	6
	Water carrier/tanker	7
	Borehole off site/communal	8
	Flowing water/stream/river	9
	Stagnant water/dam/pool	10
	Well	11
	Spring	12
	Other (specify)	
3.7 What type of toilet does your household use? Clarify answer	Flush toilet (connected to sewage)	1
	Flush toilet (with septic tank)	2
	Chemical toilet	3
	Pit latrine with ventilation pipe	4
	Pit latrine without ventilation pipe	5
	Bucket toilet	6

Tick one only	No facility/bush/field		7
	Other (specify)		
3.8 What is the main source of energy for cooking in your household? Clarify answer Tick one only	Electricity from mains		1
	Electricity from generator		2
	Gas		3
	Paraffin		4
	Wood		5
	Coal		6
	Animal dung		7
	Solar energy		8
	Other (specify)		
3.9 Does your household have any of the following items in good working order? Read out each item and tick all that apply "Yes" and all others "No"		**Yes**	**No**
	Telkom / landline phone	1	0
	Cell phone	1	0
	Radio	1	0
	Television	1	0
	Video recorder/DVD player	1	0
	Electric stove with oven	1	0
	Bicycle	1	0
	Personal computer at home	1	0
	Internet facilities at home	1	0
	Fridge	1	0
	Car/truck/bakkie	1	0
3.10 Does your household own cattle, livestock or chickens?		Yes	1
		No	0 ←
3.11	_____(Number of cattle)		

If no go to 3.16

IF YES How many cattle does the household own?	None	0
	Don't know	99
3.12 IF YES How many goats does the household own?	_____(Number of goats)	
	None	0
	Don't know	99
3.13 IF YES How many chickens does the household own?	_____(Number of chickens)	
	None	0
	Don't know	99
3.14 IF YES How many pigs does the household own?	_____(Number of pigs)	
	None	0
	Don't know	99
3.15 IF YES Does the HH own any other farm animals? IF YES What are they?	(Other, specify)	
How many [other] does the household own?	_____(Number of other)	
	None	0
	Don't know	99

3.16 In general how much does your household usually spend in a month? If the respondent does not give you a precise estimate ask him/her In which of the following ranges, would you say your household EXPENDITURE generally falls? Tick one only	_____Rand	
	R0 – R399	1
	R400 – R799	2
	R800 – R1 199	3
	R1 200 - R1 799	4
	R1 800 - R2 499	5
	R2 500 - R4 999	6
	R5 000 - R9 999	7
	R10 000 or more	8
	Don't know	99
	Refuse	97
3.17 Do you have anything else that you would like to tell us about your experience of seeking or receiving care at this facility?		
3.18 Note the end time of the interview	: am / pm	

Thank the interviewee and indicate that you would now like to ask his/her permission to examine his/her TB record (card).

Appendix B: Recoding of ART/TB acceptability variables into binary responses

SECTION 2: ACCEPTABILITY FOR HIV SERVICES								
QUESTIONS	**REACH STUDY**				**OUR MPH STUDY**			
	Variables	Variable labels	Answer	old code	**Direction**	**New code**	**construct**	
2.1 Have you told anyone besides the health care workers that you have HIV/TB?	told		Yes	1	positive	1	Community	
			No	0		0		If no go to 2.3
2.2 If YES Who have you told about your TB? Indicate relationship e.g. sister, not name.								
2.3 To what extent do you agree with the following statement: "I have all the support from my partner that I need to	support		Agree	1	positive	1		
			Disagree	2		0		
			Don't know	99		none		
			Not applicable	98		none		

cope with my illness”?							
2.4 “I have all the support that I need from my family”	supfam		Agree	1	positive	1	
			Disagree	2		0	
			Don’t know	99		none	
			Not applicable	98		none	
2.5 “I have all the support that I need from my friends”	supfriend		Agree	1	positive	1	
			Disagree	2		0	
			Don’t know	99		none	
			Not applicable	98		none	
2.6 Do you feel that people in the community judge you negatively for attending this facility for your HIV/TB treatment?	judge		Yes	1	Negative	0	
			No	0		1	
			Don’t know	99		none	
2.7 In general, when you need to seek healthcare, what do you prefer: e) To see a nurse in a	doctnur		Nurse	1	element of traveling to see a doctor rather than a nurse	1	
			Doctor	2		0	
			Indifferent	3		0	
			Don’t know	99		none	

nearby clinic or f) To travel further to see a doctor							
5.8 In this clinic are you able to talk to the doctors or nurses in private?	private		Always	1	positive	1	
			Sometimes	2		1	
			Never	3		0	
		READ OUT: Can you tell me whether you agree or disagree with these statements when thinking about your general experience in this clinic?					
2.9 The queues to see a doctor or nurse are too long at this facility	queue		Agree	1	Negative	0	
			Disagree	0		1	
			Both agree and disagree	2		0	
			Don’t know / not sure	99		none	
2.10 The doctors and nurses (*health workers)* discussed the treatment fully with me	discuss		Agree	1	positive	1	
			Disagree	0		0	
			Both agree and disagree	2		0	
			Don’t know / not sure	99		none	
2.11 It is a problem that the *health workers* DO NOT speak my	lang		Agree	1	negative	0	
			Disagree	0		1	

language.			Both agree and disagree	2		0	
			Don’t know / not sure	99		none	
2.12 I find it easy to tell the *health workers* when I have missed taking my tablets	tellmiss		Agree	1	positive	1	
			Disagree	0		0	
			Both agree and disagree	2		0	
			Don’t know / not sure	99		none	
			Not applicable	98		none	
2.13 The *health workers* are too busy to listen to my problems	hwbusy		Agree	1	negative	0	
			Disagree	0		1	
			Both agree and disagree	2		0	
			Don’t know / not sure	99		none	
2.14 Patient information is kept confidential in this clinic	confid		Agree	1	positive	1	
			Disagree	0		0	
			Both agree and disagree	2		0	
			Don’t know / not sure	99		none	
2.15 Some staff DO NOT treat patients with sufficient respect	respect		Agree	1	negative	0	
			Disagree	0		1	
			Both agree and disagree	2		0	

			Don’t know / not sure	99		none	
2.16 The health workers I see respect me	respect2		Agree	1	positive	1	
			Disagree	0		0	
			Both agree and disagree	2		0	
			Don’t know / not sure	99		none	
2.17 The facilities (including waiting area and toilets) are dirty	dirty		Agree	1	Negative	0	
			Disagree	0		1	
			Both agree and disagree	2		0	
			Don’t know / not sure	99		none	
2.18 How satisfied were you with the service today?	satis		Very satisfied/ Satisfied	1	Positive	1	
			Neither satisfied nor dissatisfied	2		0	
			Dissatisfied/ Very dissatisfied	3		0	
			Don’t know	99		none	
2.19 Since you first started coming to this facility, have you ever left without being helped?	everleft		Yes	1	Negative	0	
			No	0		1	**If no go to 2.21**

2.20 IF YES Can you explain what happened?										
2.21 Have you ever <u>not used</u> HIV/TB services when you needed them?	notused		Yes	1		negative	0			If no go to 2.23
			No	0			1			
2.22 If YES Why did you not use HIV/TB services? Include all factors – personal and facility-related										
2.23 How do you think the service in this clinic could be improved? Tick all that apply "Yes" and			**Improvement**	**Yes**	**No**	**Negative**	**yes**	**no**		
			Shorter queues	1	0		0	1		
			More health workers	1	0		0	1		
			Cleaner facilities	1	0		0	1		
			Better patient facilities (toilets, waiting room	1	0		0	1		

all others “No”			area etc)						
			Don’t know	99					
			Other (specify)	97			1		
		N.B: other 7 variables from the data set were add on community construct: helped by partner, parent, boy or girlfriend, other relatives, friend s, employer and nobody. All except the last question have a positive direction.							
	helppart	helped by partner, parent, boy or girlfriend, other relatives, friend s, employer		1	0	positive	1	0	
		helped by nobody		1	0	negative	0	1	

Appendix C: Exit interview questionnaire for Maternal Health Services

SECTION 1: SOCIOECONOMIC AND DEMOGRAPHIC BACKGROUND QUESTIONS ABOUT THE RESPONDENT, HIS/HER HOUSEHOLD AND HOUSEHOLD HEAD

READ OUT:

I am going to start by asking you a few questions about you and your household. When I talk about your household, I am including all the people who live in your house and who share the same food with you.

When I talk about your household head, this is the person who usually makes the important decisions in the household.

1.1 Note the race of the respondent. If you are not certain, ask: How would you describe yourself racially?	African/Black	1
	Coloured	2
	Asian/Indian	3
	White	4
	Other (specify)	

1.2 What was your age at your last birthday? Fill in one block only	_____ Year born	_____ Years

1.3 Who is the head of your household? By this, I mean, who is the person who usually makes the important decisions in the household. Indicate relationship e.g. father, mother not name.	_____ Relationship	**If respon-dent HHH, go to 1.8**

1.4 Code sex of HHH. If not clear ask: What is the sex of your HHH?	Male	1
	Female	2
1.5 Code position in HH of respondent. If unclear, ask:	Head/acting head	1
	Husband/wife/partner	2
	Son/daughter/stepchild/adopted child	3
	Brother/sister/step brother/step sister	4

What is your position in the household, in relation to the household head such as …read out a few relevant options. Tick one block only	Father/mother/step father/step mother	5
	Grandparent/great grandparent	6
	Grandchild/great grandchild	7
	Other relative (e.g. in laws or aunt/uncle)	8
	Non-related persons (tenant, boarder, lodger)	9
	Don't know	99
	Other (specify)	

1.6 What was the age of your HHH i.e. husband / father / mother etc. at his/her last birthday? fill in one block only	_____ Year born	_____ Years

1.7 Does your HHH i.e. husband / father / mother etc. stay with you for at least 2 weeks each month?	Yes	1
	No	0

1.8 What is your current marital status? Tick one block only	Married	1
	Living with partner	2
	Widow/widower	3
	Divorced or separated	4
	Never married (single)	5
	Other (specify)	

1.9 What is YOUR highest level of education? Tick one block only If the person is NOT the HHH ask What is the highest level of education of your HHH i.e. husband	**Type of education**	**You**	**Your HHH**
	No schooling	0	0
	Highest grade passed in school (1-12)		
	Completed diploma/certificate	13	13
	Completed degree	14	14
	Other (specify)	**You**	**Your HHH**

If no or don't know go to

1.14

/ father / mother etc.			

1.10 When you became pregnant, were you employed working or earning money? If the person is NOT the HHH ask Is your HHH i.e. husband / father / mother etc. currently employed?	**Type of employment**	**You**	**Your HHH**
	Yes, full-time	1	1
	Yes, part-time	2	2
	No	3	3
	Don't know	99	99

1.11 If respondent employed ask: Were you self-employed or do you work for someone else? If HHH employed, ask Is your HHH i.e. husband / father / mother etc. self-employed or does HE/SHE work for someone else?	**Type of employment**	**You**	**Your HHH**
	Self-employed	1	1
	Employee	2	2
	Don't know	99	99

1.12 Are you on a maternity leave benefit?		
	Yes	1
	No	0

1.13 Will you be able to return to your same job after your maternity leave?		
	Yes	1
	No	0
	Don't know	99

Go to 1.15

1.14 If respondent was not employed ask: What are the reasons that you are not employed? Tick all that apply "Yes" and others "No"	**Reason**	**Yes**	**No**
	Looking for work	1	0
	Retired or pensioner	1	0
	Sick or injured	1	0
	Pregnant or caring for own children	1	0
	Caring for other children	1	0
	Caring for sick/injured	1	0
	Retrenched	1	0
	Nothing	1	0

	Don't know	99
	Other (specify)	

1.15 Including yourself, how many adults (18 years or older) live in your household? When I talk about your household, I am including all the people who live in your house and who share the same food with you.	
1.16 How many children younger than 18 years live in your household?	

1.17	**Type of grant**	**Yes**	**No**	**If yes, number received**
Does anyone in your household receive a government grant OR income from the government such as…….read out each option and tick yes or no. IF YES ask: How many of each type of grant is received (i.e. how many people receive each?)	Unemployment insurance (UIF)	1	0	
	Worker's compensation	1	0	
	State old age pension	1	0	
	Disability grant	1	0	
	Child support grant	1	0	
	Care dependency grant	1	0	
	Foster care grant	1	0	
	Grant in aid	1	0	
	Social relief	1	0	
	Other	1	0	
	Don't know		99	

1.18 Where were you born? READ OUT I know this is a sensitive question to ask at this stage, but we are asking because we want to see if health services treat South Africans differently to those who are not from South Africa.	South Africa	1
	Other (specify)	

If other go to 1.20

1.19 If respondent born in South Africa, ask Which province were you born in?	Western Cape	1
	Eastern Cape	2
	Northern Cape	3
	Free State	4

Go to 1.21

Use current province borders	KwaZulu-Natal	5
	North West	6
	Gauteng	7
	Mpumalanga	8
	Limpopo	9
	Don't Know	99
1.20 If respondent not born in South Africa, ask: Do you have a South African ID document?	Yes	1
	No	0
1.21 Are you covered by a Medical Aid or any scheme that helps you pay for health-care services or medicines?	Yes	1
	No	0

SECTION 2: ACCEPTABILITY

READ OUT: Can you tell me whether you agree or disagree with these statements when thinking about your general experience in this facility during labour and after birth

2.1 The doctors and nurses (*health workers)* explained what to expect when giving birth.	Agree	1
	Disagree	0
	Both agree and disagree	2
	Don't know / not sure	99
2.2 It is a problem that the *health workers* DO NOT speak my language.	Agree	1
	Disagree	0
	Both agree and disagree	2
	Don't know / not sure	99
2.3 The *health workers* understood the difficulty of being in labour and assisted me where possible.	Agree	1
	Disagree	0
	Both agree and disagree	2
	Don't know / not sure	99
2.4 The *health workers* were too busy to listen to my problems.	Agree	1
	Disagree	0

	Both agree and disagree	2
	Don't know / not sure	99
2.5 Some staff DO NOT treat patients with sufficient respect.	Agree	1
	Disagree	0
	Both agree and disagree	2
	Don't know / not sure	99
2.6 The health workers I saw cared about me.	Agree	1
	Disagree	0
	Both agree and disagree	2
	Don't know / not sure	99
2.7 I DID NOT receive sufficient pain relief during my labour	Agree	1
	Disagree	0
	Both agree and disagree	2
	Don't know / not sure	99
2.8 The facilities (including waiting area and toilets) are dirty	Agree	1
	Disagree	0
	Both agree and disagree	2
	Don't know / not sure	99
READ OUT: For the following questions, you are required to answer YES or NO		**If yes go to 2.11**
2.9 Were you allowed to have a companion during your labour?	Yes	
	No	0
	Don't know	99
2.10 If no or don't know Would you have liked one?	Yes	1
	No	0
	Don't know	99
2.11 Were you shouted at during labour?	Yes	1
	No	0
	Don't know	99

2.12 Were you ever hit, slapped or pinched during labour?	Yes	1
	No	0
	Don't know	99
2.13 Was your privacy respected?	Yes	1
	No	0
	Don't know	99
2.14 Were you offered fluids?	Yes	1
	No	0
	Don't know	99
2.15 Did you get referred for follow up care for you and the baby?	Yes	1
	No	0
	Don't know	99
2.16 For birth registration, did you get all the necessary documents?	Yes	1
	No	0
	Don't know	99
2.17 Were you told about the child-care grant & where to go for the child care grant if you qualify?	Yes	1
	No	0
	Don't know	99
2.18 How satisfied were you with the service you received during delivery?	Very satisfied/ Satisfied	1
	Neither satisfied nor dissatisfied	2
	Dissatisfied/ Very dissatisfied	3
	Don't know	99
2.19 To what extent do you agree with the following statements about your pregnancy: "I had all the support that I needed during my pregnancy from the father of the child"	Agree	1
	Disagree	2
	Don't know	99
	Not applicable	98
2.20 "I had all the support that I needed from my family"	Agree	1
	Disagree	2

	Don't know	99
	Not applicable	98
2.21 "I had all the support that I needed from my friends"	Agree	1
	Disagree	2
	Don't know	99
	Not applicable	98
2.22 In this facility are you able to talk to the doctors or nurses in private?	Always	1
	Sometimes	2
	Never	3

SECTION 3: DWELLING CHARACTERISTICS, HOUSEHOLD INCOME, EXPENDITURE AND HOUSEHOLD ASSETS

READ OUT Finally, we want to ask you some questions about the characteristics of the house where you live and type of facilities available within your household

3.1 Where do you live?	_____village or community _____area or township	
3.2 Which best describes the type of house in which you live? Clarify answer Tick one only	House or brick structure on a separate stand or yard or on farm	1
	Traditional dwelling/hut/structure made of traditional materials	2
	Flat or apartment in block of flats	3
	Town/cluster/semi-detached house (simplex, duplex or triplex)	4
	Unit in retirement village	5
	Dwelling/house/flat/room in backyard	6
	Informal dwelling/shack IN the backyard of a formal house	7
	Informal dwelling/shack NOT in backyard e.g. in an informal/squatter settlement or on farm	8
	Room/flatlet not in backyard but on a shared property e.g granny flat	9
	Caravan/tent	10

	Worker's hostel	11
	Other (specify)	

3.3 What is the main material of your house's walls? Clarify answer Tick one only	Bricks & plaster/finished	1
	Bare brick/cement block	2
	Corrugated iron/zinc	3
	Wood	4
	Plastic	5
	Cardboard	6
	Mixture of mud and cement	7
	Wattle and daub	8
	Mud	9
	Other (specify)	

3.4 What is the main material of your house's roof? Clarify answer Tick one only	Tiles	1
	Corrugated iron/zinc	2
	Thatching	3
	Asbestos	4
	Plastic	5
	Cardboard	6
	Other (specify)	

3.5 How many rooms, including kitchens, does your house have? Interviewer, probe and exclude bathrooms, sheds, garages, stables, etc. from the total unless people are living in them	

3.6 What is the main source of **drinking water** for members of your household?	Piped (tap) water in dwelling	1
	Piped (tap) water on site or in yard	2
	Borehole on site	3
	Rain water tank on site	4

Clarify answer Tick one only	Neighbour's tap		5
	Public/communal tap (either free or paid)		6
	Water carrier/tanker		7
	Borehole off site/communal		8
	Flowing water/stream/river		9
	Stagnant water/dam/pool		10
	Well		11
	Spring		12
	Other (specify)		
3.7 What type of toilet does your household use? Clarify answer Tick one only	Flush toilet (connected to sewage)		1
	Flush toilet (with septic tank)		2
	Chemical toilet		3
	Pit latrine with ventilation pipe		4
	Pit latrine without ventilation pipe		5
	Bucket toilet		6
	No facility/bush/field		7
	Other (specify)		
3.8 What is the main source of energy for cooking in your household? Clarify answer Tick one only	Electricity from mains		1
	Electricity from generator		2
	Gas		3
	Paraffin		4
	Wood		5
	Coal		6
	Animal dung		7
	Solar energy		8
	Other (specify)		
3.9 Does your household have any of the		**Yes**	**No**
	Telkom / landline phone	1	0

following items in good working order? Read out each item and tick all that apply "Yes" and all others "No"	Cell phone	1	0
	Radio	1	0
	Television	1	0
	Video recorder/DVD player	1	0
	Electric stove with oven	1	0
	Bicycle	1	0
	Personal computer at home	1	0
	Internet facilities at home	1	0
	Fridge	1	0
	Car/truck/bakkie	1	0
3.10 Does your household own cattle, livestock or chickens?		Yes	1
		No	0
3.11 IF YES How many cattle does the household own?	_____(Number of cattle)		
	None		0
	Don't know		99
3.12 IF YES How many goats does the household own?	_____(Number of goats)		
	None		0
	Don't know		99
3.13 IF YES How many chickens does the household own?	_____(Number of chickens)		
	None		0
	Don't know		99
3.14 IF YES	_____(Number of pigs)		

If no go to 3.16

How many pigs does the household own?	None	0
	Don't know	99
3.15 IF YES Does the HH own any other farm animals? IF YES What are they	(Other, specify)	
How many [other] does the household own?	_____(Number of other)	
	None	0
	Don't know	99
3.16 In general how much does your household usually spend in a month?	_____Rand	
If the respondent does not give you a precise estimate ask him/her	R0 – R399	1
	R400 – R799	2
	R800 – R1 199	3
	R1 200 - R1 799	4
In which of the following ranges, would you say your household EXPENDITURE generally falls?	R1 800 - R2 499	5
	R2 500 - R4 999	6
	R5 000 - R9 999	7
Tick one only	R10 000 or more	8
	Don't know	99
	Refuse	97
3.17 Do you have anything else that you would like to tell us about your experience of seeking or receiving care at this facility?		

3.18 Note the end time of the interview	: am / pm

Thank the interviewee and indicate that you would now like to ask her permission to examine her labour ward medical record

Appendix D: Recording of MHS acceptability variable into binary responses

SECTION 2: ACCEPTABILITY								
READ OUT: Can you tell me whether you agree or disagree with these statements when thinking about your general experience in this facility during labour and after birth								
QUESTIONS	**REACH STUDY**					**OUR MPH STUDY**		
	Variables	Variable labels	answer	Old codes	Direction	New codes	comment	Construct
2.1 The doctors and nurses (*health workers)* explained what to expect when giving birth.	treatdiscuss	Discussion	Agree	1	positive	1		Provide
			Disagree	0		0		
			Both agree and disagree	2		0	as disagree	
			Don't know / not sure	99		none		
2.2 It is a problem that the *health workers* DO NOT speak my language.	lang	Language	Agree	1	Negative	0	accept low	Provider
			Disagree	0		1		
			Both agree and disagree	2		0	language a problem	
			Don't know / not sure	99		none		

2.3 The *health workers* understood the difficulty of being in labour and assisted me where possible.	difficultyinlabour	Difficulty	Agree	1	Positive	1		Provider
			Disagree	0		0		
			Both agree and disagree	2		0	as disagree	
			Don't know / not sure	99		none		
2.4 The *health workers* were too busy to listen to my problems.	hwbusy	Busy	Agree	1	negative	0	accept low	Provider
			Disagree	0		1		
			Both agree and disagree	2		0	low accept	
			Don't know / not sure	99		none		
2.5 Some staff DO NOT treat patients with sufficient respect.	respect	Respect	Agree	1	Negative	0	low accept	Provider
			Disagree	0		1		
			Both agree and disagree	2		0	low accept	
			Don't know / not sure	99		none		
2.6 The health workers I saw cared about me.	respect2	Care	Agree	1	Positive	1		provider
			Disagree	0		0		

			Both agree and disagree	2		0	low accept	
			Don't know / not sure	99		none		
2.7 I DID NOT receive sufficient pain relief during my labour	Insufficientainrelief	Pain relievers	Agree	1	Negative	0	low accept	provider
			Disagree	0		1		
			Both agree and disagree	2		0	low accept	
			Don't know / not sure	99		none		
2.8 The facilities (including waiting area and toilets) are dirty	Dirty	Dirty	Agree	1	Negative	0	low accept	Services
			Disagree	0		1	high accept	
			Both agree and disagree	2		0	low accept	
			Don't know / not sure	99		none		
	READ OUT: For the following questions, you are required to answer YES or NO							
2.9 Were you allowed to have a companion during your labour?	Companion	Companion	Yes	1	Positive	1		Services
			No	0		0		
			Don't know	99		none		

If yes go to 2.11

2.10 If no or don't know Would you have liked one?	likedcompanion	Liked companion	Yes	1	negative	0	low	Services
			No	0		1		
			Don't know	99		none		
2.11 Were you shouted at during labour?	shouted	Shouted at	Yes	1	Negative	0	low accept	Provider
			No	0		1	high accept	
			Don't know	99		none		
2.12 Were you ever hit, slapped or pinched during labour?	Hit	Hit	Yes	1	Negative	0	low accept	Provider
			No	0		1		
			Don't know	99		none		
2.13 Was your privacy respected?	privacyrespected	Privacy respected	Yes	1	Positive	1	high	Provider
			No	0		0	low	
			Don't know	99		none		
2.14 Were you offered fluids?	Fluids	Fluids	Yes	1	Positive	1	high	Provider
			No	0		0	low	
			Don't know	99		none		
2.15	referred	Referral	Yes	1	Positive	1	high	Services

Did you get referred for follow up care for you and the baby?			No	0		0	low	
			Don't know	99		none		
2.16 For birth registration, did you get all the necessary documents?	birthregistration	Birth certificate	Yes	1	Positive	1	high	Services
			No	0		0	low	
			Don't know	99		none		
2.17 Were you told about the child-care grant & where to go for the child care grant if you qualify?	childcaregrant	Childcare grant	Yes	1	Positive	1	high	Services
			No	0		0	low	
			Don't know	99		none		
2.18 How satisfied were you with the service you received during delivery?	satis	Satisfaction	Very satisfied/ Satisfied	1	Positive	1	high	Services
			Neither satisfied nor dissatisfied	2		0	low	
			Dissatisfied/ Very dissatisfied	3		0	low	
			Don't know	99		none		
2.19 To what extent do you	supportfoc	Father support	Agree	1	Positive	1	high	Community
			Disagree	2		0	low	

agree with the following statements about your pregnancy: "I had all the support that I needed during my pregnancy from the father of the child"			Don't know	99		None		
			Not applicable	98		none		
2.20 "I had all the support that I needed from my family"	supfam	Family support	Agree	1	Positive	1	high	Community
			Disagree	2		0	low	
			Don't know	99		None		
			Not applicable	98		none		
2.21 "I had all the support that I needed from my friends"	supfriend	Friend support	Agree	1	Positive	1	high	Community
			Disagree	2		0	low	
			Don't know	99		None		
			Not applicable	98		none		
2.22 In this facility are you able to talk to the doctors or nurses in private?	Private	Talk in private	Always	1	Positive	1	high	Provider
			Sometimes	2		1	high	
			Never	3		0	low	

Appendix E: Recoding of SES variables into binary responses

SECTION 3: DWELLING CHARACTERISTICS, HOUSEHOLD INCOME, EXPENDITURE AND HOUSEHOLD ASSETS				
READ OUT: Finally, we want to ask you some questions about the characteristics of the house where you live and type of facilities available within your household				
QUESTION	REACH STUDY		OUR MPH STUDY	
	RESPONSE	CODE	COMMENT:	CODE
	All the study population was from a sub-district of Johannesburg considered as an urban area in REACH study. Thus the code 1 was given for variable considered acceptable, while the code 0 was given for variables unacceptable in the setting of urban household			
3.1 Where do you live?	_____village or community _____area or township			
3.2 Which best describes	House or brick structure on a separate stand or yard or on farm	1	Acceptable	1

the type of house in which you live? Clarify answer Tick one only	Traditional dwelling/hut/structure made of traditional materials	2	Unacceptable	0
	Flat or apartment in block of flats	3	Acceptable	1
	Town/cluster/semi-detached house (simplex, duplex or triplex)	4	Unacceptable	0
	Unit in retirement village	5	Acceptable	1
	Dwelling/house/flat/room in backyard	6	Acceptable	1
	Informal dwelling/shack IN the backyard of a formal house	7	Unacceptable	0
	Informal dwelling/shack NOT in backyard e.g. in an informal/squatter settlement or on farm	8	Unacceptable	0
	Room/flatlet not in backyard but on a shared property e.g granny flat	9	Acceptable	1
	Caravan/tent	10	Unacceptable	0
	Worker's hostel	11	Acceptable	1
	Other (specify)			
3.3 What is the main	Bricks & plaster/finished	1	Acceptable	1
	Bare brick/cement block	2	Acceptable	1

material of your house's walls? Clarify answer Tick one only	Corrugated iron/zinc	3	Unacceptable	0
	Wood	4	No observations	
	Plastic	5	No observations	
	Cardboard	6	No observations	
	Mixture of mud and cement	7	No observations	
	Wattle and daub	8	No observations	
	Mud	9	No observations	
	Other (specify)			
3.4 What is the main material of your house's roof? Clarify answer Tick one only	Tiles	1	Acceptable	1
	Corrugated iron/zinc	2	Acceptable	1
	Thatching	3	No observations	
	Asbestos	4	No observations	
	Plastic	5	No observations	
	Cardboard	6	Unacceptable	0
	Other (specify)			

3.5 How many rooms, including kitchens, does your house have? Interviewer, probe and exclude bathrooms, sheds, garages, stables, etc. from the total unless people are living in them		Number of rooms	Acceptable: ≥ 3 rooms	1
			Unacceptable: ≤ 2 rooms	0
3.6 What is the main source of **drinking water** for members of your household? Clarify answer Tick one only	Piped (tap) water in dwelling	1	Acceptable	1
	Piped (tap) water on site or in yard	2	Acceptable	1
	Borehole on site	3	Unacceptable	0
	Rain water tank on site	4	No observations	
	Neighbour's tap	5	No observations	
	Public/communal tap (either free or paid)	6	Acceptable	1
	Water carrier/tanker	7	No observations	
	Borehole off site/communal	8	No observations	
	Flowing water/stream/river	9	No observations	
	Stagnant water/dam/pool	10	No observations	
	Well	11	No observations	
	Spring	12	No observations	

	Other (specify)			
3.7 What type of toilet does your household use? Clarify answer Tick one only	Flush toilet (connected to sewage)	1	Acceptable	1
	Flush toilet (with septic tank)	2	Acceptable	1
	Chemical toilet	3	Acceptable	1
	Pit latrine with ventilation pipe	4	Acceptable	1
	Pit latrine without ventilation pipe	5	Acceptable	1
	Bucket toilet	6	Unacceptable	0
	No facility/bush/field	7	Unacceptable	0
	Other (specify)			
3.8 What is the main source of energy for cooking in your household? Clarify answer	Electricity from mains	1	Acceptable	1
	Electricity from generator	2	Acceptable	1
	Gas	3	Acceptable	1
	Paraffin	4	Unacceptable	0
	Wood	5	Unacceptable	0
	Coal	6	Unacceptable	0
	Animal dung	7	Unacceptable	0

Tick one only	Solar energy	8		Acceptable	1	
	Other (specify)					
3.9 Does your household have any of the following items in good working order? Read out each item and tick all that apply "Yes" and all others "No"		**Yes**	**No**	No observations		
	Telkom / landline phone	1	0	No observations		
	Cell phone	1	0	No observations		
	Radio	1	0	No observations		
	Television	1	0	No observations		
	Video recorder/DVD player	1	0	No observations		
	Electric stove with oven	1	0	No observations		
	Bicycle	1	0	No observations		
	Personal computer at home	1	0	No observations		
	Internet facilities at home	1	0	No observations		
	Fridge	1	0	No observations		
	Car/truck/bakkie	1	0	No observations		
3.10 Does your household own cattle, livestock or chickens?		Yes	1	If no go to 3.16 ations		
		No	0	No observations		

3.11 IF YES How many cattle does the household own?	_____(Number of cattle)		No observations	
	None	0		
	Don't know	99		
3.12 IF YES How many goats does the household own?	_____(Number of goats)		No observations	
	None	0		
	Don't know	99		
3.13 IF YES How many chickens does the household own?	_____(Number of chickens)		No observations	
	None	0		
	Don't know	99		
3.14 IF YES	_____(Number of pigs)		No observations	
	None	0		
	Don't know	99		

How many pigs does the household own?				
3.15 IF YES Does the HH own any other farm animals? IF YES What are they? How many [other] does the household own?	(Other, specify)		No observations	
	_____(Number of other)			
	None	0		
	Don't know	99		
3.16 In general how much does your household usually spend in a month? If the respondent does not give you a precise estimate ask him/her In which of the following ranges, would	_____Rand		No observations	
	R0 – R399	1		
	R400 – R799	2		
	R800 – R1 199	3		
	R1 200 - R1 799	4		
	R1 800 - R2 499	5		
	R2 500 - R4 999	6		

you say your household EXPENDITURE generally falls? Tick one only	R5 000 - R9 999	7		
	R10 000 or more	8		
	Don’t know	99		
	Refuse	97		

Appendix F: In-depth interview guide for ART/TB treatment

IN-DEPTH SEMI-STRUCTURED INTERVIEW SCHEDULE FOR ACCESS NARRATIVE INTERVIEWS WITH PATIENTS SUCCESSFULLY RECEIVING TB TREATMENT/ART

Before we start each interview:

Begin with an opening statement to introduce the interviewer, the topic and purpose of the interview and the research. Outline interviewees' rights (right not to answer specific questions, withdraw at any point, confidentiality, further questions at this stage?). Get the participant to sign the consent forms.

INTERVIEW 1

In the first interview, we will discuss:

A. The participant's background:

Ask:

1) Before we start talking about living with HIV/TB, I would like to get to know a bit about you. Can you tell me about the major events in your life? Perhaps we can start with when and where you were born?

Introduce the timeline:

Draw a line: If this line is your life over the years, starting with your birth over here (draw in), what other events and relationships would you say have been important to you?

Examples of issues that might emerge:

- Key life events – e.g. schooling, jobs, marriage, children, serious illnesses and deaths.

What we want from this question:

1) To break the ice – give the person a chance to introduce themselves.

2) Introduce the participant to the timeline and 'chronological method' that the rest of the interview builds on.

3) Get a basic sense of 'who' the person is – where they come from, some of the key issues in their lives. Although the 'who' will be explored in much more detail as the interview unfolds, hopefully this timeline will give us some insights so that we can better understand their current experience of TB/HIV/Maternal Delivery. We expect that certain people (e.g. family members, friends, preachers, traditional healers) and institutions (e.g. the church) will play an important role in the participant's life and some of these may emerge here, so that we have them in mind as we proceed (particularly because some may support or block the participant's access to health care/treatment pathways.)

B. The participant's illness and their history of treatment/care-seeking:

Ask:

2a) Let's now talk about living with HIV/TB. When did it start and what happened?

[prompts: What happened next? And then? Tell me more about…].

Timeline cont:

Place this illness on the timeline and then 'enlarge' the timeline from this point onwards, getting more detail and referring back to the life events line if necessary. List key health events and choice of care/treatment (e.g. going to the clinic, traditional healer, gp, spiritual healer). It is possible that people will follow multiple care-seeking strategies at the same time. In this case, we will focus on each strategy separately but plot them as occurring simultaneously.

As the story unfolds, key events and people might crop up and these are important to explore further. For example: if there is a very sympathetic friend or family-member who gives the participant a lot of support, ask: "I hear you saying that John is very important in your life. Could you tell me some more about how he has supported you through your TB?" or, if a certain public message seems to have been significant, ask: "You mentioned that you heard that beetroot and garlic would cure AIDS. Can you tell me more?" If it's difficult to interrupt the person as the story is being told, make a note of these issues and come back to them (possibly using the timeline as a prompt for the participant to talk more).

Similarly, certain experiences will be important to explore further – e.g. good or bad experiences with the health system. "It sounds like you had a very difficult time with that nurse. How did you feel after she shouted at you? What happened next?"

Ask (If it's not clear already):

2b) How are you coping with living with HIV/TB?

[or, for successfully completed TB treatment]:

2c) How have you coped with living with TB?

Examples of issues that might emerge/factors to explore in greater depth:

- Symptoms, diagnoses, treatment decisions
- Costs (of treatment, transport, who paid?)
- Key decision-makers – people and events that have influenced what the participant did in the course of their illness and treatment;
- Networks of support (who supports the participant and how) and coping strategies,
- Reasons for choosing particular forms of treatment,
- Problems with particular forms of treatment,
- Shifts in treatment-seeking patterns (e.g. someone might start at a traditional healer but move onto a church and then to a GP before getting to the clinic),
- Successes in particular actions (both treatment – e.g. getting cured from TB and relationships – e.g. deciding to resist the prevailing household norm by going to a clinic instead of a spiritual healer, engaging with a friendly, helpful treatment supporter, getting Increase feedback from using the complaints box etc.)

What do we want from this question?

We are trying to understand what the participant did when they fell ill and then through the course of their illness and treatment. Did they immediately seek a diagnosis? Or did they ignore their symptoms? Why? (perhaps because they couldn't afford to go to a doctor. Or they didn't have confidence in the local clinic staff or they are a young woman who is relatively disempowered within her relationship). Did they immediately seek treatment or not? Why? What types of treatment did they get? Who did they get

support from and what type of support was this? Were there key people/relationships/belief that affected their decisions to follow certain treatment options (e.g. if the family believes strongly in traditional medicine, did the person start with a TH first? Did they go to more than 1 type of provider simultaneously (eg a TH and a clinic?). Many of these issues will form part of our understanding of the acceptability of the health service and why people don't necessarily go straight there. Or why they do. As people talk about their 'treatment pathways of care', they may also point out problems and challenges (which will inform our understanding of barriers to access [and reading of these as unjust]). They might similarly highlight successes and Increase factors that have restored them to health (and these are NB to how we understand facilitators to access, as well as justice]). Contextual and identity factors may emerge here – e.g. poverty, masculinity – in the way that people speak about themselves, their networks and their illness. Depending on whether the TB patient has completed their treatment or not, may have to ask "coping" question in past tense…

C. Previous treatment paths and experiences:

<u>Ask</u> (If it's not already clear from the story and timeline so far)

3a) For TB and HIV: Is this the first time that you have been sick in this way? [If not], please will you tell me about the other time(s) you had these symptoms. When did it start and what happened?

3b) *Also ask for HIV:* How long have you been/were you unwell for? When did you first get sick and what happened?

Then follow the same course described above – using the timeline as a tool for exploring some of the key health events/issues.

What do we want from this question?

We want to establish if this is a new case or re-infection (for TB: TB-like symptoms and for HIV: have they been living with opportunistic diseases for a long time or have they only recently started feeling unwell). If a re –infection/ill for a long time, then what did they do before? Have they previously used a clinic? Are they defaulters? What were they doing before and why aren't they doing it anymore? What are some of the problems that they experienced? Any success stories? For ART – if the user is not feeling unwell, phrase question in past tense.

D. Perceptions of access

If they haven't already addressed these issues in the initial telling of the story (NB to listen carefully and avoid irritating the participant by asking the same question about something they have just told you), use the timeline to explore:

For each care-seeking event:

Ask:

4) Can you describe a 'typical' visit (to the clinic/TH etc), including your journey of getting there and back?

5a) Can you tell me about a visit that stands out for you/that you remember?

5b) Can you tell me about a time that you had a good visit? What made it good?

5c) Can you tell me about a time that you had a visit that was less good? What made it so?

Examples of issues that might emerge:

- Length of waiting time
- Costs,
- Transport difficulties,
- Attitudes of providers or patients,
- Commitments at home or work,
- Stories of tragedy/access denied,
- Stories of successful access/justice restored.

What do we want from these questions?

1) To explore a particular visit in depth (rather than asking people to reflect in general on what they liked or disliked about the treatment/service).

2) To get people to talk about the 'dimensions' of access (affordability, availability and acceptability) without asking about these directly/in academic language. What were the main challenges and problems they faced in getting appropriate care? What have been the key successes/ achievements with their health, and can they explain what was successful about those events or achievements. We also want to identify Increase and Decrease 'stories' that might be used for discussion/exhibition in: i) the phase 3 processes with stakeholders and policy makers, and ii) to illustrate cases of access denied/justice restored (BH PhD).

Ask:

6) In accessing this treatment, do you feel that you were/are treated fairly? Please tell me more.

What do we want from this question?

To get a sense of whether people feel that there is justice in the way they are treated/in the act of accessing treatment (BH PhD). By asking them to tell us more, we will hopefully gain insights into what they expected of the service and why their experience did/didn't match these expectations. And if a 'fit' between expectations and experience can be considered a measure of fairness (and through this, justice) at all.

E. Utilisation decisions

7a) Are you currently attending a clinic/hospital for any other services or treatments?

7b) If so, are you able to get everything you need at the same clinic/during the same visit? Please can you tell me more?

What do we want from this question?

We want to see if they are using services for other reasons and whether they experience barriers wrt these services. Nb to thinking about access holistically and across tracers/services per person, rather than just in silos.

F. Health and identity

Ask:

8) How is your life now different to how it was before you got ill?

9) Do you think your illness has changed how other people behave towards you? If so, please can you tell me more about these changes?

10) How has your treatment changed your life?

11) Do you think that getting treatment (whatever form) has changed the way that other people behave towards you? If so, please can you tell me more about these changes?

Examples of issues that might emerge:

- Impact on income and livelihood,
- Old and new friendships,
- Emotional/psychological impact (e.g. isolation, depression, freedom through treatment).

What do we want from this question?

To understand what living with TB/HIV and seeking to access the relevant treatments means to how people see themselves. To get a sense of the impact that illness (firstly) and treatment (secondly) has on who they are and how they live their life.

12) Is there anything you would like to add, which can help us to understand your

experience?

G. Basic demographics:

Ask:

13) Before we say good bye, please can I get/confirm some basic details from you, like your:

- age,
- home language,
- employment status,
- marital status, and
- who else lives in your household.

If these details have already emerged through the story, 'answer' them to show that you have listened to the respondent.

14) Have you got any further questions? If there are, provide answers to those and offer information contacts/ leaflets.

Thank participant for their time, input and willingness to talk. Ask if they would be willing for us to contact them again. If so, what would be the best way to agree on a meeting (get cell number). If they are willing to be contacted again, explain that we may follow up with them in a few weeks if we have any further questions. Leave an updated

referral list with relevant service provider contact details, including counselling services.

Appendix G: In-depth interview guide for Maternal Health Services

IN-DEPTH SEMI-STRUCTURED INTERVIEW SCHEDULE FOR ACCESS NARRATIVE INTERVIEWS WITH MATERNAL HEALTH PATIENTS WHO HAVE DELIVERED WITHIN A FACILITY (SUCCESSFULLY)

Before we start each interview:

Begin with an opening statement to introduce the interviewer, the topic and purpose of the interview and the research. Outline interviewees' rights (right not to answer specific questions, withdraw at any point, confidentiality, further questions at this stage?). Get the participant to sign the consent forms.

INTERVIEW 1

A. The participant's background:

Ask:

1. Before we start talking about your pregnancy and delivery, I would like to get to know a bit about you. Can you tell me about the major events in your life? Perhaps we can start with when and where you were born.

Introduce the timeline:

Draw a line: If this line is your life over the years, starting with your birth over here (draw in), what other events and relationships would you say have been important to you?

Examples of issues that might emerge:

- Key life events – e.g. schooling, jobs, marriage, children, serious illness, deaths.

What we want from this question:

1) To break the ice – give the person a chance to introduce themselves.

2) Introduce the participant to the timeline and 'chronological method' that the rest of the interview builds on.

3) Get a basic sense of 'who' the person is – where they come from, some of the key issues in their lives. Although the 'who' will be explored in much more detail as the interview unfolds, hopefully this timeline will give us some insights so that we can better understand their current experience of Maternal Delivery. We expect that certain people (e.g. family members, friends, preachers, traditional healers) and institutions (e.g. the church) will play an important role in the participant's life and some of these may emerge here, so that we have them in mind as we proceed (particularly because some may support or block the participant's access to health care/treatment pathways.). Also, children (i.e. previous pregnancy and birth experiences) will probably be mentioned here too and these will be the basis for discussion about child birth history.

B. The participant's pregnancy and access to ANC

Ask:

2a) Let's now talk about your pregnancy/ies.

Let's start at the beginning of your latest pregnancy. How did you find out that you were pregnant? [prompts: What happened next, and then…?]

Locate on timeline. And expand timeline as participant talks.

Ask: (If it's not clear)

2b) Over the course of your pregnancy, did you have any problems, either related to the pregnancy or your health more generally? If so, what happened/what did you do?

2c) **Ask** (If it's not clear already):

How did you cope with this pregnancy?

Examples of issues that might arise:

- ANC attendance
- Problems during pregnancy
- Other health issues (e.g. cross-tracer utilisation)
- Reference and comparison to previous pregnancies [we suspect (and hope) that many women will think of their various pregnancies irt each other and not as discrete events. If so, this will save us having to repeat the whole script per pregnancy. In which case, make use of the timeline to jot down different pregnancies and issues, just so that we can come back to particular issues if need be – ie we don't want to confuse different pregnancies]
- Networks and support systems (financial, emotional)

What do we want from this question?

We are trying to understand what the participant did when they fell pregnant and through the course of their pregnancy. Did they immediately seek a diagnosis? Or did

they ignore their symptoms? Why? (Perhaps because they couldn't afford to go to a doctor. Or they didn't have confidence in the local clinic staff or they are a young woman who is relatively disempowered within her relationship). Who did they get support from and what type of support was this? Were there key people/relationships/belief that affected their decisions to follow certain treatment options (e.g. if the family believes strongly in traditional medicine, did the person start with a TH first? Did they go to more than 1 type of provider simultaneously (eg a TH and a clinic?). Many of these issues will form part of our understanding of the acceptability of the health service and why people don't necessarily go straight there. Or why they do. As people talk about their 'treatment pathways of care', they may also point out problems and challenges (which will inform our understanding of barriers to access [and reading of these as injust]). They might similarly highlight successes and Increase factors (and these are NB to how we understand facilitators to access[, as well as justice]). Contextual and identity factors may emerge here – e.g. poverty and vulnerability– in the way that people speak about themselves, their networks and their pregnancy/ies.

Ask (if it's not clear already)

3a) Did you attend antenatal care (ANC) during your pregnancy?

If no:

Why did you decide not to attend ANC? Did you see anyone for care during your pregnancy? [Whether 'yes' or 'no], please tell me more?

If yes:

When did you first start (i.e how many months pregnant were you?)? Why did you go then (and not earlier or later?)? How often and where did you go?

Continue with:

3b) Can you describe a 'typical' ANC visit, including your journey of getting there and back?

3c) Can you tell me about a visit that stands out for you/that you remember?

3d) Can you tell me about a time that you had a good visit? What made it good?

3e) Can you tell me about a time that you had visit that was less good? What made it so?

Ask if >1 pregnancy:

3f) Can you tell me if and how your ANC experience with this pregnancy was different to your previous ANC experiences?

Examples of issues that might emerge:

- Length of waiting time and did they pay to get admission documents?
- Costs,
- Transport difficulties,
- Attitudes of providers or patients,
- Did they get information about post natal care?
- Commitments at home or work,

- Stories of tragedy/access denied,
- Stories of successful access/justice restored.

What do we want from these questions?

1) To explore a particular ANC visit in depth (rather than asking people to reflect in general on what they liked or disliked about the treatment/service).

2) To get people to talk about the 'dimensions' of access (affordability, availability and acceptability) without asking about these directly/in academic language. What were the main challenges and problems they faced in getting appropriate care? What have been the key successes/ achievements with their health, and can they explain what was successful about those events or achievements. We also want to identify Increase and Decrease 'stories' that might be used for discussion/exhibition in: i) the phase 3 processes with stakeholders and policy makers, and ii) to illustrate cases of access denied/justice restored .

Ask:

4) In accessing ANC, do you feel that you were treated fairly? Please tell me more.

What do we want from this question?

To get a sense of whether people feel that there is justice in the way they are treated/in the act of accessing treatment. By asking them to tell us more, we will hopefully gain insights into what they expected of the service and why their experience did/didn't match these expectations. And if a 'fit' between expectations and experience can be considered a measure of fairness (and through this, justice) at all.

Ask (If it's not already clear from the story and timeline so far)

5) Is this the first time that you have been pregnant? [If not], please will you tell me about the other time(s) you were pregnant. When was this and what happened?

Then follow the same course described above – using the timeline as a tool for exploring some of the key health events/issues.

What do we want from this question?

We want to establish if this is a first pregnancy or a second/third etc one or if they had a miscarriage or a still-born. If it's a second/third etc pregnancy, then what did they do before? Is this the first time they (as successful users) are actually utilising a clinic? Why now? What were they doing before and why aren't they doing it anymore? What are some of the problems that they experienced? Any success stories?

Repeat questions in relation to previous pregnancies.

Ask:

6) During your pregnancy, did you need to access any other health-related services? If yes, please tell me more? Did you have any problems in accessing these services? If so, can you tell me what happened?

What do we want from this question?

We want to find out if pregnant women are also using other services (eg ART, TB treatment etc) and whether they have any access problems with these?

C. Delivery

Ask:

7a) Let's now talk about your delivery/ies, starting with your most recent experience. When did you go into labour? And then what happened?

[prompts: what happened next?...and then?].

If the woman wasn't in labour when she arrived at the facility:

Ask:

7b) Why did you come to this/previous facility when you did?

Timeline cont:

Place this delivery on the timeline and then 'enlarge' the labour from this point onwards, getting more detail and referring back to previous deliveries if necessary. List key health events, date and time of admission and stage of labour when they were admitted (if they know this). What happened (was the foetal heart rate checked, BP and cervical dilation checked?) Was the care continuous? Where you given any pain relief by the health workers? List the sequence of events leading up to the birth and then afterwards to the point of being discharged.

As the story unfolds, key events and people might crop up and these are important to explore further. For example: if there is a very sympathetic friend or family-member who gives the participant a lot of support, ask: "I hear you saying that John is very important in your life. Could you tell me some more about how he supported you through your delivery?" or, if a certain public message seems to have been significant, ask: "You mentioned that you heard that taking olive oil ensures a smooth vaginal delivery. Can you tell me more?" If it's difficult to interrupt the person as the story is being told, make a note of these issues and come back to them (possibly using the timeline as a prompt for the participant to talk more). Similarly, certain experiences will be important to explore further – e.g. good or bad experiences with the health system.

"It sounds like you had a very difficult time with that nurse. How did you feel after she shouted at you? What happened next?"

Ask:

7c) What stands out for you/what do you remember most about your delivery?

Depending on how the participant responds to 7c, probe around:

7d) Is there anything in particular that you liked about your delivery?

7e) Is there anything in particular that you didn't like about your delivery?

Examples of issues that might emerge/factors to explore in greater depth:

- If a complicated delivery: symptoms, diagnoses, treatment decisions (and whether/how these were communicated to the patient).
- Nature of interaction between patient and providers.
- Key decision-makers – people and events that may have influenced what the participant did in the course of her delivery.
- Networks of support (who supports the participant and how) and coping strategies.
- Costs (of the delivery, transport, post-natal costs, who paid?)
- Successes in particular actions (e.g. delivering a precious baby or avoiding a second caesarean).

- Problems with the delivery.
- Comparisons with previous delivery experiences.

What do we want from this question?

We want to explore the delivery-experience holistically. We are interested in understanding whether, from the patient's perspective, there were any problems/successes around the acceptability, availability and affordability of the delivery. Who was supporting them and in what ways? How did they experience the nature of their interaction with the staff (including cleaners, clerks, nurses, doctors) and did they feel they were treated differently by different staff members? In what ways?

Ask:

8) Do you feel that you were treated fairly during your delivery? Please tell me more.

What do we want from this question?

To get a sense of whether people feel that there is justice in the way they are treated/in the act of delivering. By asking them to tell us more, we will hopefully gain insights into what they expected of the service and why their experience did/didn't match these expectations. And if a 'fit' between expectations and experience can be considered a measure of fairness (and through this, justice) at all.

Ask (For those who have delivered previously and If it's not already clear from the story and timeline so far)

9) Let's now talk about your previous deliveries. Can you tell me what happened? Follow sequence of questions above.

E. Postpartum access

This question needs to be asked at least 10 weeks after the delivery and therefore depends on when the patient is being interviewed (may have to wait for the second interview or a follow up call if <10 weeks):

Ask (For those being interviewed >10 weeks on and also for previous deliveries)

10a) In the first ten weeks after you were discharged, did you or the baby need medical care, including inoculations? Please can you tell me more? [Probe around what treatment was needed, where it was received?]

10b) What stands out for you/what do you remember most about this service?

10c) Did you have any problems in accessing this service? Please can you tell me more?

What do we want from this question?

To 'complete' the period of delivery-related access issues. Just as we have probed about ANC, so the 10 week period after delivery will offer us insights into post-natal concerns/problems/challenges that may have arisen, as well as access to the 'routine' post-natal-related services such as inoculations.

F. Health and identity

11a) Let's now talk about being a mother. Perhaps you can start by telling me if your pregnancy and delivery were what you expected them to be? Please tell me more.

11b) How is your life now different to how it was before you were a mother?

Examples of issues that might emerge/factors to explore in greater depth:

- Rite of passage of childbirth
- Effect of the baby on income and livelihood,
- Old and new friendships
- Emotional/psychological impact (eg. depression, isolation)

What do we want from this question?

To get a sense of how the pregnancy and delivery have affected 'who' the woman is/how she sees herself. Were her expectations about the pregnancy etc matched in reality and what insights does this offer us ito how services are arranged and delivered?

G. Basic demographics

Ask:

12) Before we say good bye, please can I get/confirm some basic details from you, like your:

- age,
- home language,
- employment status,
- marital status, and

- who else lives in your household.

If these details have already emerged through the story, 'answer' them to show that you have listened to the respondent.

H. Acceptability questions from exit interviews

Ask:

13) And finally, please can you tell me whether you agree or disagree with these statements when thinking about your general experience in the facility during labour and after birth:

SECTION 5: ACCEPTABILITY		
5.1 The doctors and nurses (*health workers)* explained what to expect when giving birth.	Agree	1
	Disagree	0
	Both agree and disagree	2
	Don't know / not sure	99
5.2 It is a problem that the *health workers* DO NOT speak my language.	Agree	1
	Disagree	0
	Both agree and disagree	2
	Don't know / not sure	99
5.3 The *health workers* understood the	Agree	1
	Disagree	0

difficulty of being in labour and assisted me where possible.	Both agree and disagree	2
	Don't know / not sure	99
5.4 The *health workers* were too busy to listen to my problems.	Agree	1
	Disagree	0
	Both agree and disagree	2
	Don't know / not sure	99
5.5 Some staff DO NOT treat patients with sufficient respect.	Agree	1
	Disagree	0
	Both agree and disagree	2
	Don't know / not sure	99
5.6 The health workers I saw cared about me.	Agree	1
	Disagree	0
	Both agree and disagree	2
	Don't know / not sure	99
5.7 I DID NOT receive sufficient pain relief during my labour	Agree	1
	Disagree	0
	Both agree and disagree	2
	Don't know / not sure	99
5.8 The facilities (including waiting area and	Agree	1
	Disagree	0

toilets) are dirty	Both agree and disagree	2
	Don't know / not sure	99
READ OUT: For the following questions, you are required to answer YES or NO		
5.9 Were you allowed to have a companion during your labour?	Yes	1
	No	0
	Don't know	99
5.10 If no or don't know Would you have liked one?	Yes	1
	No	0
	Don't know	99
5.11 Were you shouted at during labour?	Yes	1
	No	0
	Don't know	99
5.12 Were you ever hit, slapped or pinched during labour?	Yes	1
	No	0
	Don't know	99
5.13 Was your privacy respected?	Yes	1
	No	0
	Don't know	99
5.14 Were you offered fluids?	Yes	1
	No	0

If yes go to 5.11

	Don’t know	99
5.15 Did you get referred for follow up care for you and the baby?	Yes	1
	No	0
	Don’t know	99
5.16 For birth registration, did you get all the necessary documents?	Yes	1
	No	0
	Don’t know	99
5.17 Were you told about the child-care grant & where to go for the child care grant if you qualify?	Yes	1
	No	0
	Don’t know	99
5.18 How satisfied were you with the service you received during delivery?	Very satisfied/ Satisfied	1
	Neither satisfied nor dissatisfied	2
	Dissatisfied/ Very dissatisfied	3
	Don’t know	99

5.19 To what extent do you agree with the following statements about your pregnancy: “I had all the support that I needed during my pregnancy from the father of the child”	Agree	1
	Disagree	2
	Don’t know	99
	Not applicable	98
5.20	Agree	1

"I had all the support that I needed from my family"	Disagree	2
	Don't know	99
	Not applicable	98
5.21 "I had all the support that I needed from my friends"	Agree	1
	Disagree	2
	Don't know	99
	Not applicable	98
5.22 In this facility are you able to talk to the doctors or nurses in private?	Always	1
	Sometimes	2
	Never	3

What do we want from these questions?

A sense of whether women respond to the closed-ended questions in a way that resonates with their narratives. Can we pick up a 'time- and or place-effect' between these response and those from Phase 1, where women were interviewed whilst still in the facilities, immediately after their deliveries?

Thank participant for their time, input and willingness to talk. Ask if they would be willing for us to contact them again. If so, what would be the best way to agree on a meeting (get cell number). If they are willing to be contacted again, explain that we may follow up with them in a few weeks if we have any further questions. Leave an updated referral list with relevant service provider contact details, including counselling services.

Appendix H: Ethical clearance certificate for REACH study

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Division of the Deputy Registrar (Research)

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
R14/49 Schneider

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER M071101**
PROJECT	Research Programme: Researching Equity in Access to Health Care (REACH)
INVESTIGATORS	Prof H Schneider
DEPARTMENT	Centre for Health Policy
DATE CONSIDERED	07.11.30
DECISION OF THE COMMITTEE*	APPROVED UNCONDITIONALLY

Unless otherwise specified this ethical clearance is valid for 5 years and may be renewed upon application

DATE 08.01.14 **CHAIRPERSON** .....
(Professor PE Cleaton-Jones, A Dhai, M Vorster, C Feldman, A Woodiwiss)

*Guidelines for written 'informed consent' attached where applicable

cc: Supervisor :

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10005, 10th Floor, Senate House, University.

I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to a completion of a yearly progress report.**

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

Appendix I: CHP endorsement letter to use REACH Database

The Centre for Health Policy

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

26th May 2015

Members of the Ethics Committee

Faculty of Health Sciences

University of the Witwatersrand, Johannesburg

Dear Colleagues

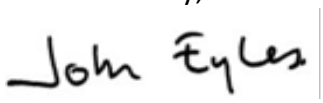
RE: AUTHORIZATION FOR USE OF QUALITATIVE AND QUANTITATIVE DATA

I, Prof John Eyles, write to grant permission to MPH student, **Joy Blaise Bucibaruta**, to use secondary quantitative and qualitative data, collected during 2008 to 2011 for the Researching Equity and Access in Health Care Project.

I was the Principal Investigator on this project and as such, I am able to grant permission for further analysis with respect to the data.

In fact, the team involved in the project and I are very pleased that others wish to use the data, which will be examined under my supervision, as many avenues of academic and policy relevance remain to be more fully explored.

Yours sincerely,



_____

John Eyles, PhD Professor, Centre for Health Policy

SARChi Chair in Health Policy and Systems
School of Public Health Building - Tel: 011 717 2220

Appendix J: Ethical clearance certificate for the current masters' research study

R14/49 Dr Joy Blaise Bucyibaruta

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M150921

NAME: (Principal Investigator)	Dr Joy Blaise Bucyibaruta
DEPARTMENT:	School of Public Health Centre for Health Policy
PROJECT TITLE:	Analysis of Acceptability of HIV, TB and Maternal Health Services: A Case Study of a Johannesburg Sub-District, South Africa
DATE CONSIDERED:	02/10/2015
DECISION:	Approved unconditionally
CONDITIONS:	
SUPERVISOR:	Prof John Eyles, Bronwyn Harris and Kafayat Aboirien

APPROVED BY: Professor P Cleaton-Jones, Chairperson, HREC (Medical)

DATE OF APPROVAL: 05/10/2015

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Secretary in Room 10004, 10th floor, Senate House, University.

I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated, from the research protocol as approved, I/we undertake to resubmit the application to the Committee. **I agree to submit a yearly progress report**.

Principal Investigator Signature Date 05/10/2015

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES