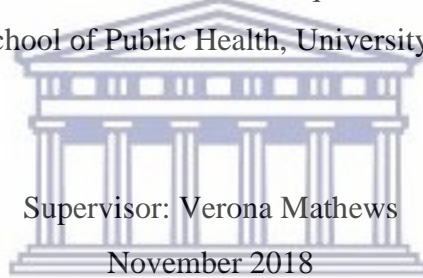


Factors influencing the decentralisation of Multi-Drug Resistant Tuberculosis care: a management perspective.

Kathryn Ann Mekler

3513931

A mini-thesis submitted in partial fulfilment of the requirements for the degree of Master in
Public Health at the School of Public Health, University of the Western Cape.



Supervisor: Verona Mathews

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WESTERN CAPE

Keywords

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Integration

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Declaration

I declare that *Factors influencing the decentralisation of Multi-Drug Resistant Tuberculosis care: a management perspective* is my work, that it has not been submitted for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged by complete references.

Full name: Kathryn Ann Mekler

Signed:



Date:

28 November 2018



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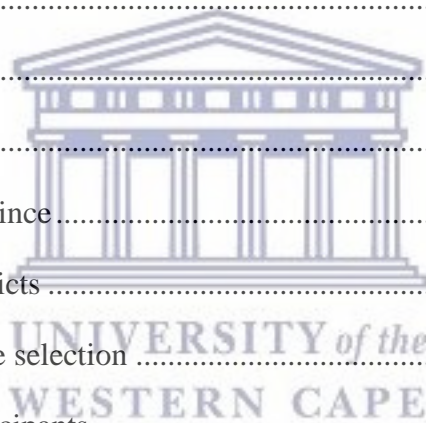
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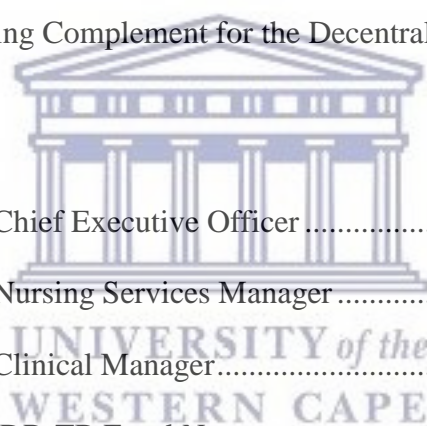
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List of acronyms and abbreviations

ART	Antiretroviral therapy
BMI	Body Mass Index
CBO	Community-based organisation
CEO	Chief Executive Officer
CHW	Community health worker
DHMT	District health management team
DOT	Directly Observed Therapy
DR-TB	Drug-resistant tuberculosis
DSMT	Decentralised site management team
EDRWeb	Electronic drug-resistant tuberculosis register
FN	Focal Nurse
HAST	HIV & AIDS, STI and TB
HCT	HIV counselling and testing
HIV	Human Immunodeficiency Virus
HR	Human resources
HRM	Human resource management
IMCI	Integrated Management of Childhood Illness
LTFU	Lost to Follow Up
MDR	Multidrug-resistant
MDR-TB	Multidrug-resistant tuberculosis
ml	Millilitre
MSF	Médecins Sans Frontieres
NDoH	National Department of Health
NGO	Non-governmental organisation

NIMART	Nurse-Initiated Management of Antiretroviral Therapy
NSM	Nursing Services Manager
OPD	Out Patient Department
OR	Odds Ratio
PHC	Primary health care
PLHIV	People living with HIV/AIDS
PN	Professional Nurse
rPHC	Primary Health Care re-engineering
RR	Rifampicin resistance
RR-RB	Rifampicin-resistant tuberculosis
SRH	Sexual reproductive health
STI	Sexually transmitted infection
SOP	Standard operating procedure
TB	Tuberculosis
VCT	Voluntary counselling and testing
WBOT	Ward-based outreach team
WHO	World Health Organization
XDR-TB	Extensively drug-resistant tuberculosis



Abstract

Factors influencing the decentralisation of Multi-Drug Resistant Tuberculosis care: a management perspective.

K. A. Mekler

A mini-thesis submitted in partial fulfilment of the requirements for the degree of Master in Public Health at the School of Public Health, University of the Western Cape.

Decentralisation of multi-drug resistant tuberculosis (MDR-TB) services has resulted in improved access to care, with community-based treatment of MDR-TB shown to be more effective than centralised hospital-based care. Furthermore, increasing bed shortages resulted in the National Department of Health establishing MDR-TB policy guidelines in 2011.

However, the extent to which this policy has been implemented by the decentralised MDR-TB sites and the factors influencing implementation of the policy from a management perspective were not well described.

The aim of this study was therefore to explore and compare the actual and ascribed roles and responsibilities of key management-level role players at the decentralised MDR-TB sites, and to explore the factors influencing implementation of the MDR-TB decentralisation policy (2011).

This study used a qualitative design to explore the experiences of the managers in the implementation of the MDR-TB decentralisation policy. Purposive sampling was used to select participants. In total, eighteen participants were interviewed.

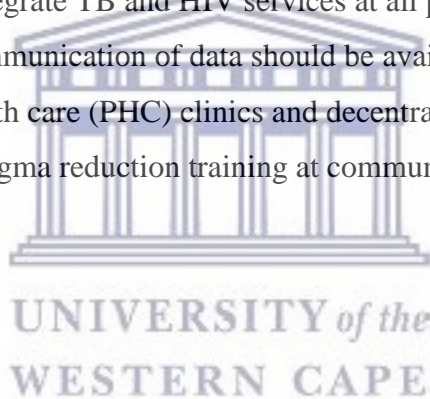
There were sixteen participants within the peripheral tier of management, the decentralised site management team (DSMT), and two participants within the district tier of management, the district health management team (DHMT). A thematic coding approach was used to analyse the data.

Findings showed that despite a similarity between the actual and ascribed roles of the role players, there was a mismatch between practice and policy in terms of roles and responsibilities. The study found that traditional roles and responsibilities were hindered due to lack of availability of the complement of staff to support a multi-disciplinary approach.

Furthermore, there was an expectation to take on additional responsibilities over and above

the responsibilities of that particular role player. Factors influencing implementation of the MDR-TB decentralisation policy included operational constraints, such as administration of daily injections to ambulatory patients. Health system factors included poor alignment of NGOs to governmental services, lack of integration of TB and HIV services, and lack of communication between different levels of care. Health care provider-related factors included staff shortages, poor staff morale, and fear of contracting TB. Lastly, patient-related factors included Lost to Follow Up, stigma, and social grants of MDR-TB patients.

The study concluded that there is a mismatch between the actual and ascribed roles and responsibilities of key role players in implementation of the MDR-TB decentralisation policy (2011), with additional responsibilities expected of staff. In addition, implementation of the policy is influenced by numerous provider- and patient-related factors. Recommendations included staff recruitment for vacant posts and retention strategies be improved and that inter-sectoral platforms to ensure that NGO support, aligned to the needs of the programme, should be strengthened. Efforts to integrate TB and HIV services at all points of care should be encouraged. Furthermore, communication of data should be available through inter-operable systems between primary health care (PHC) clinics and decentralised sites. Lastly, training on MDR-TB at PHC level and stigma reduction training at community level should be strengthened.



1. INTRODUCTION

Tuberculosis (TB) remains the biggest infectious disease killer worldwide (Dheda et al, 2018). Drug-resistant TB (DR-TB) is an emerging threat globally, with an estimated 600,000 cases of multidrug-resistant TB (MDR-TB) in 2016, and 490,000 cases of confirmed multidrug-resistant TB (MDR-TB) diagnosed in 2016. In addition, 110,000 cases were susceptible to isoniazid but resistant to rifampicin (RR-TB), thus managed programmatically as MDR-TB (Global Tuberculosis Report, 2017).

Data compiled from surveys and ongoing surveillance of drug resistance among TB patients also allow estimation of the number of MDR-TB cases among notified TB patients with pulmonary TB. These are the MDR-TB cases that could be detected if all notified patients were tested for drug resistance to the most effective first line drugs, rifampicin and isoniazid, using WHO-recommended diagnostic tests. Globally in 2016, there were an estimated 350,000 multidrug-resistant/rifampicin-resistant (MDR/RR-TB) cases among notified TB patients (Global Tuberculosis Report, 2017).

Furthermore, according to the Global Tuberculosis Report (2017) only 85 % of the 153,119 MDR/RR-TB patients notified in 2016 were actually started on MDR-TB treatment, indicating that case detection is advancing faster than the capacity to link diagnosed patients to care and provide treatment.

In terms of treatment success, the most recently published WHO report reflects data of the 2014 cohort who completed the required twenty-four months of treatment showed a cure rate of only 54 % and approximately 240,000 deaths from MDR/RR-TB in 2016 (Global Tuberculosis Report, 2017). Evidence suggests that despite treatment, multidrug-resistant strains of tuberculosis substantially increase the risk of death when compared to drug-susceptible TB even after adjusting for various confounders (Chung- Delgado et al, 2015). In addition, the costs of treating drug-resistant TB are significantly higher (US\$2,000-20,000 per patient) than drug-susceptible TB (US\$100-1,000 per patient), with funding for MDR-TB reaching US\$1.7 billion in 2017 (Global Tuberculosis Report 2017).

Globally there is increasing evidence in several MDR-TB programmes of improved access to care and management through decentralisation, without compromising treatment outcomes (Cox & Ford, 2013). Improved treatment outcomes in a decentralised MDR-TB model of care have been demonstrated. For example, in Peru, improved treatment outcomes were

documented with a cohort of 1,000 MDR-TB patients managed through a decentralised model of care using NGO support (Shin et al, 2004). Another example of improved TB health outcome is in the case of Nepal where a cure rate of 70 % among MDR-TB patients who were treated through ambulatory care was documented (Malla et al, 2009). Finally, a systematic review revealed that a community-based treatment model versus traditional hospitalisation for improving treatment success rates among MDR-TB patients showed that community-based treatment achieved a higher treatment success rate and a lower treatment failure rate according to sixteen studies involving 3,344 patients from nine countries (Williams, 2016).

1.1 South Africa and decentralising MDR-TB

In South Africa, the burden of MDR-TB disease is concerning. In 2016, there were an estimated 8,200 MDR/RR-TB cases among notified pulmonary TB cases in South Africa, with 19,073 laboratory-confirmed cases MDR/RR-TB cases. Of the 11,192 patients started on treatment, a success rate (the sum of cure and completion rates) of 54 % was achieved (Global Tuberculosis Report, 2017). Furthermore, drug-resistant TB is complex and costly to treat, with almost 40 % of all TB resources in South Africa spent on managing and controlling drug-resistant TB (Dheda et al, 2018).

In the Eastern Cape Province, high rates of primary transmission have been found with approximately 80 % of patients who acquired drug-resistant TB being infected with resistant strains from other MDR-TB patients (Klopper et al, 2014). Furthermore, a more recent study conducted in Kwazulu-Natal showed that the majority of cases of drug-resistant TB were probably due to transmission rather than inadequate treatment of TB (Shah et al, 2017). The conclusion drawn from these studies is that transmission of drug resistant strains, rather than defaulting drug-susceptible treatment, is fuelling the drug-resistant TB epidemic in South Africa. Thus, the focus of intervention needs to shift to prevention of transmission of MDR-TB, timeous linkage to the care of those diagnosed with MDR-TB, and treatment with effective regimens. This highlights a shift from patient to health care provider factors, and for adequate systems and management structures to be in place to ensure adequate management along the continuum of care.

Traditionally, in South Africa all patients with MDR-TB were hospitalised at a centralised specialist MDR-TB hospital. However, several challenges have been cited with a centralised model of TB care:

- Inadequate bed capacity: infectious patients remained without treatment whilst awaiting admission, potentially causing transmission of drug-resistant TB within the community;
- Patients required to travel far distances to centralised sites affecting retention in care;
- Institutionalised care fuelling stigma and fear, undermining public health efforts and resulting in reduced health-seeking behaviour among presumptive MDR-TB patients (Smith, 2010).

In order to address the challenges associated with a centralised approach to health care, South Africa is undergoing health sector reform. Decentralisation of health systems is a pillar of health sector reform whereby improved efficiency and quality of services is sought and local governance and accountability of the health system is promoted. This ensures greater autonomy at lower levels of health services through transfer of authority in planning, management, and decision-making from national to sub-national (regional, district or municipal) levels (McCollum et al, 2018; Robalino, Picazo, & Voetberg, 2001).

Regarding the decentralisation of MDR-TB within South Africa, a national policy framework was introduced in 2011. This Multi-Drug Resistant Tuberculosis Policy Framework on Decentralised and Deinstitutionalised Management (2011) describes relevant national legislation protecting TB patient rights, as well as providing an outline for the structure of MDR-TB management in South Africa. This policy outlines suggested staffing for both centralised and decentralised MDR-TB sites, providing summaries of the roles of individual health worker cadres, and an organogram of decentralised treatment.

The policy stipulates the establishment of decentralised sites to provide an additional level of care between centralised specialist DR-TB hospitals and primary healthcare facilities (Spotlight, 2014). Furthermore, the policy delineates the functions of a decentralised MDR-TB site and can either be at a district or primary health care level responsible for the appropriate management of MDR-TB patients within the district where they live. It defines the different roles and responsibilities of the management of MDR-TB decentralisation according to various levels of care: provincial, district and primary health care level (Multi-Drug Resistant Tuberculosis Policy Framework (2011)).

Currently, in the South African context, DR-TB services are decentralised to district level, with each district having at least one decentralised site. A decentralised site may be a TB hospital with isolation wards for MDR-TB patients or a standalone site within a district

hospital or community health centre. The Western Cape is the only province which is currently fully decentralised to PHC level (personal communication with National DR-TB Director, 2018).

There is increasing evidence of improved access to care and management through decentralisation in South Africa, without compromising treatment outcomes. Loveday et al (2018) compared different models of MDR-TB care and found that community-based care was more effective in the treatment of MDR-TB than care in a centralised, specialised hospital. Out of a total of 1,549 patients, 736 patients were treated at four community-based sites and 813 patients were treated at the centralised hospital. The authors' findings showed that MDR-TB patients were more likely to have a successful treatment outcome if they were treated at a community-based site than centralised hospital (adjusted OR 1.43, P = 0.01) (Loveday et al, 2018).

Despite evidence showing improved outcomes with decentralisation (Loveday et al, 2018), the implementation of the policy is subjected to certain challenges accompanying the process of decentralisation. The challenges of decentralisation of MDR-TB in South Africa have been identified to include the establishment of new infrastructure (operational constraints), as well as increased training need and demand for supervision (capacity). Furthermore, inter-sectoral and community linkages are key (Ndjeka, 2013). However, the process of implementation of decentralising MDR-TB and accompanying challenges experienced by the implementers have not been investigated.

1.2 Problem Statement

The Multi-Drug Resistant Tuberculosis Policy Framework outlines the roles and responsibilities of the role players but does not consider the capacity of local health systems to implement the decentralisation policy. The problem is that the experiences of the implementers in fulfilling their roles and responsibilities, specifically in terms of their capacity, operational constraints, and linkages between the district and decentralised MDR-TB site, have not been investigated in the implementation of the MDR-TB Decentralisation Policy. It is important to establish the capacity and factors influencing the implementation of this policy to ensure that inhibiting challenges are addressed before a national rollout process commences.

The capacity to implement decentralisation of MDR-TB is important in order to improve health

outcomes. It is therefore important to investigate the factors influencing implementation of the MDR-TB Decentralisation Policy (2011). If these factors are not investigated and addressed, optimal rollout of decentralisation leading to improved health outcomes will not be achieved.

1.3 Aim

The aim of the study is to explore and describe the factors influencing the implementation of decentralised MDR-TB services from frontline managers' perspectives.

1.4 Objectives

- To compare the actual and ascribed roles and responsibilities of facility-level decentralised site management teams (DSMTs) in the implementation of decentralised MDR-TB services.
- To compare the actual and ascribed roles and responsibilities of district level district health management teams (DHMTs) in the implementation of decentralised MDR-TB services.
- To identify and describe the operational constraints experienced by DSMTs and DHMTs in the implementation of decentralised MDR-TB services.
- To describe the relationship between the DSMTs and DHMTs in terms of linkages between the two tiers of management in implementing decentralisation of MDR-TB.
- To identify and describe the factors influencing the implementation of decentralised MDR-TB services.
- To provide recommendations to strengthen the implementation of decentralised MDR-TB services.

1.5 Outline of Thesis

This thesis will be arranged as follows:

Chapter 1 introduces the decentralisation policy of drug-resistant TB care and explains the rationale behind pursuing this research. Chapter 2 contains the literature review, which will focus on the health sector reform, specifically the decentralisation of MDR-TB services. The

topics that will be reviewed are the types of decentralisation of health services and the impact on implementers of a decentralised health service. Chapter 3 describes the research aims, objectives and study design, and provides details about the research methodology of the study. Chapter 4 presents the findings of the study. Chapter 5 includes the discussion of the results. Lastly, Chapter 6 presents the conclusion of the study and recommendations based on the findings of the study about improving the identified challenges and barriers to implementation of drug-resistant TB care.

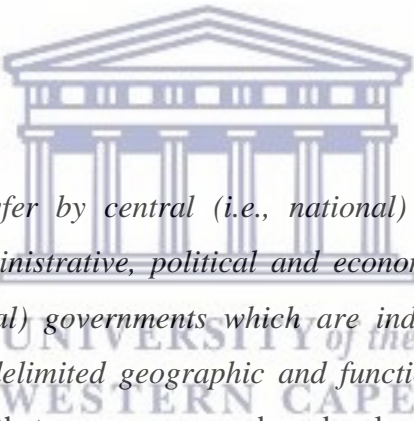


2. LITERATURE REVIEW

The literature review will focus on decentralisation of health services in South Africa, specifically decentralisation of MDR-TB services. The review will specifically focus on the factors influencing the decentralisation of health services; human resource management (HRM), lack of resources, inadequate pharmacy services, and lack of supportive supervision will be reviewed. In addition, specific literature on the factors influencing decentralisation of MDR-TB services will be reviewed: staff shortages, lack of knowledge of MDR-TB at primary health care level, drug regimen challenges, Loss to Follow Up, stigma as a barrier to treatment access and care, and finally substance abuse among MDR-TB patients.

2.1 Decentralisation

2.1.1 Definitions



Decentralisation is the “*transfer by central (i.e., national) government of specific functions, with all of the administrative, political and economic attributes that these entail, to local (i.e., municipal) governments which are independent of the central government within a legally delimited geographic and functional domain*” (Panda & Thakur, 2016: 4). It is a term that encompasses a broader, less defined and sometimes contradictory group of definitions (Saltman, Bankauskaite & Vrangbæk, 2007). Decentralisation is a common feature of reform in both developed and developing countries, promoting greater autonomy at lower levels of health services through transfer of authority in planning, management, and decision-making from national to sub-national (regional, district or municipal) levels (McCollum et al, 2018). Although the process of decentralisation varies considerably across different contexts, the ultimate aim of this health sector reform is improved efficiency and quality of services through focus on local governance and accountability in the health system (Alves, Peralta & Perelman, 2013).

Administrative decentralisation is defined as the redistribution of authority, responsibility, and financial resources for services from national government to local units of government agencies, sub-national government or semi-autonomous public authorities (World Health Organization, 2018).

There are three main types of administrative decentralisation according to the World Health Organization (2018) which can be further unpacked as follows:

De-concentration involves redistribution of decision-making and administration from national government to sub-national government, such as to ministry staff working in regions, provinces or districts.

Delegation refers to transfer of responsibility for decision-making and administration from national government to semi-autonomous public sector organisations such as hospital bodies.

Devolution refers to sub-national governments having clear geographical boundaries over which they exercise authority and within which they perform their functions, utilising constitutional law reform to formalise the devolution of powers, roles and accountabilities (World Health Organization, 2018).

In this study, decentralisation of health services refers to de-concentration. However, there are different views regarding deconcentration as a type of decentralisation and according to Manor, J. (2011), decentralisation designs are often a mixture of the different types of decentralisation.



2.2 Decentralisation as an approach to improving efficiency in service delivery

Bossert (1993) has advocated decentralisation as an approach to improve equity, efficiency, and quality where the benefits of narrow decision-making bring it closer to the points of service delivery. Bossert (1993) further states that decentralisation is a “desirable process for improving health systems” and that it has been seen as a key aspect of health reforms.

Specifically with regard to efficiency of service delivery, there is evidence in the literature to suggest that decentralisation has shown improved access to services as well as improved treatment outcomes in HIV and TB programmes.

A study by Boyer et al (2010) assessing the scale up of access to antiretroviral treatment for HIV infection in Cameroon showed that decentralisation of healthcare delivery had a positive impact on access to ART, with Cameroon reaching one of the highest coverages in the HIV positive and eligible for ART population (58 %) in Sub-Saharan Africa.

With regard to the impact of decentralisation on the tuberculosis programme, a study

conducted in an urban setting in Lilongwe, Malawi (Nyirenda, T. et al, 2003), found that decentralisation of TB services that includes the use of directly observed therapy, was associated with improved treatment outcomes than that provided by centralised services.

2.2.1 Decentralisation of health services in South Africa

The National Development Plan of South Africa launched in 2012 is founded on six pillars, which focus on eliminating inequality and reducing poverty by 2030. These six pillars include the following:

1. Uniting all South Africans around a common programme to fight poverty and inequality and to foster a spirit of unity;
2. Encouraging citizens to be active in their own development, in strengthening democracy, and in holding their government accountable;
3. Raising economic growth, promoting exports, and making the economy more labour absorbing;
4. Focusing on improving capabilities of both people and the country including skills, infrastructure, social security, strong institutions, and partnerships both in the country and with key international partners;
5. Building a capable and developmental state, capable of intervening to correct historical inequalities and to create opportunities for more people;
6. And finally, ensuring strong leadership throughout society who work together to solve our problems (National Planning Commission, 2012).

Quality health care was one of the core elements described in the National Development Plan, with two broad ideas underpinning the National Department of Health philosophy: firstly, decentralisation of health services through the platform of the district health system; and secondly, re-engineering of primary health care (National Planning Commission, 2012).

2.2.2 Decentralisation of MDR-TB

In 2011, the MDR-TB programme recognised the increasing burden of tuberculosis fuelled by the HIV epidemic, and specifically the emergence of drug-resistant

tuberculosis in South Africa (Multi-Drug Resistant Tuberculosis Policy Framework, 2011). Furthermore, critical bed shortages for admission of MDR-TB patients were identified, and the urgent need to decentralise MDR-TB services was acknowledged. Decentralisation of health services was in line not only with the needs of the MDR-TB programme, but also with South Africa's vision of decentralising health services to district-level as highlighted by the National Development Plan which has been discussed above.

Therefore, the National MDR-TB decentralisation policy framework (2011) was released as guidance for implementation of decentralised MDR-TB care at provincial, district and decentralised site levels, including the following key areas: tracing and linkage to care of diagnosed MDR-TB patients; initiation of treatment of all MDR-TB cases after appropriate assessment, with admission when indicated; provision of Directly Observed Therapy (DOT) to all MDR-TB patients attending the unit daily; and ensuring availability of drugs as well as monitoring rational usage of second-line drugs. Moreover, recommendations are given regarding social support, rehabilitation, educational and skills building programmes for patients, provision of education and counselling to all patients admitted to hospital, as well as preparation of a discharge plan for all patients, and ensuring effective down referrals.

In terms of monitoring and evaluation, the policy guidelines recommend compiling monthly, quarterly, six-monthly, and annual reports of MDR-TB patients started on treatment, culture conversion, and treatment outcomes, which should be shared by the decentralised sites with the Provincial Department of Health. In addition, regular monitoring and evaluation of the MDR-TB programme's performance is recommended in the form of programme reviews that include the district and PHC clinics.

Monitoring of adverse events is another crucial component of MDR-TB care, to ensure that patients are both managed appropriately, and that adverse event reporting is conducted. Patients with serious adverse events, as well as those with complicated disease or additional resistance patterns including extensively drug-resistant TB (XDR-TB), should be referred to the centralised MDR-TB unit (Management of Drug-Resistant Policy Guidelines, 2011).

The concept of decision space was developed by Bossert (1998) in an attempt to measure the degree of decentralisation based on the transfer of decision-making (Mohammed et al, 2016). According to Roman et al (2017: 373) "*the decision space approach attempts*

to evaluate the effectiveness of different decision space configurations and to provide recommendations to design decentralisation processes that will result in better health system performance.” Thus, for successful decentralisation to occur, adequate decision space is important in ensuring that adequate authority is transferred to district managers, which in turn promotes efficiency of services, but also allows ownership and accountability of the process at the district level through flexibility to adapt policy to local needs of the community (Roman et al, 2017; Peton, 2009).

However, a case study in Uganda describes the lack of authority over decision-making regarding human resource management, highlighting it as a limiting factor in decentralisation to district health management teams (DHMTs), and ascertains that stronger evidence is needed on decision space and human resource capacities (Alonso-Garbayo et al, 2017). The study concluded that it is unclear whether delegating decision-making powers from a central to district level results in greater autonomy for DHMTs regarding managing their workforce (Alonso-Garbayo et al, 2017).

Roman et al (2017) states that if decentralisation policies are introduced without clear definitions of roles and responsibilities of the various role players, the extent to which management decisions can be taken at local level can be challenging. Unclear levels of authority can cause conflict and administrative delays (Roman et al, 2017). An example of such challenges in South Africa, where when de-concentration from the National Department of Health to local departments of health, as well as devolution from national to local governments, resulted in health services being accountable to both local and national government (Roman et al, 2017). This created confusion over priorities with regard to planning and implementation of decentralisation policy (Roman et al, 2017).

2.3 Factors influencing decentralisation of health services

The following section will review the literature with regard to the key factors influencing decentralisation of health services that include: HRM, lack of resources, inadequate pharmacy supplies, and lack of supportive supervision.

2.3.1 Health Resource Management (HRM)

Human Resource Management is one of the key factors identified in the study and

includes the following: lack of prioritisation of Human Resources (HR), lack of staff complement to provide services, and challenges in implementation of a multi-disciplinary team approach. In terms of HR not being prioritised, a study by Dussault and Dubois (2003) found that HRM does not receive the same focus as financing and structural transformation in many health reforms, resulting in a lack of experiences shared. Furthermore, it is necessary to have a staff complement to provide the necessary services as found in a study by Kolehmainen-Aitken (2004). This concept is referred to by Dubois & Singh (2009) as staff mix, and refers to the number of personnel, mixing of disciplines and use of multi-disciplinary teams.

The importance of human resources management in health care in a global context showed that implementation of the multi-disciplinary approach faces significant challenges (Kabene et al, 2006). Traditionally, a multi-disciplinary approach focuses around specific disciplines, with health care plans being drawn up by medical professionals (Kabene et al, 2006). Typically, there is a clinician leading the team who determines the care and refers the patient to other health care specialists and auxiliary support staff where necessary (Kabene et al, 2006). In this approach, however, there is generally little involvement with the patient regarding the care provided. Inter-disciplinary health care, on the other hand, is a patient-centred approach in which all involved including the patient have input into the treatment planning process (Kabene et al, 2006). It was further noted that the aim of this team should not be to have health care workers working independently in silos, but rather to focus on the unique skills each member brings to the team (Kabene et al, 2006).

Another factor influencing implementation of policy in the implementation of sexual reproductive health (SRH) services thought to be an even greater barrier than staff shortages to provision of quality health services was staff morale (McIntyre & Klugman, 2003). Possible factors affecting the identified staff morale include confusion over supervisory responsibility, reduced technical supervision capacity and reduced number of supervision visits (Kolehmainen-Aitken, 2004).

Staff shortages, in addition to lack of staff houses and poor remuneration, are regarded as major barriers affecting role players in implementing health reform such as decentralisation, creating the link between health reform and staff morale and performance in providing quality health care (Mubyazi & Njunwa, 2013).

2.3.2. Lack of resources

A study in China investigating decentralisation of services to people living with HIV/AIDS (PLHIV) described lack of relevant medical equipment and laboratory services as a barrier to making appropriate diagnoses and providing effective quality care for patients (Zhang, 2011). In Uganda (Lutwama et al, 2012) and Tanzania (Frumence et al, 2013) the lack of equipment is described as a barrier experienced by health care workers in a decentralised health system. In South Africa, implementation of SRH services was associated with frustration at being required to implement policies for which the necessary resources were available due to delays in budget allocation (McIntyre & Klugman, 2003).

2.3.3 Inadequate pharmacy services

In a Ugandan study by Anokbonggo et al (2004) that assessed the impact of decentralisation on health services, including facility utilisation, prescribing and availability of essential drugs, the findings showed that despite the perception that a decentralised policy led to community empowerment and ownership, it failed to improve drug shortages (Anokbonggo et al, 2004).

In another study by Crowley and Stellenberg that evaluated the adequacy of pharmaceutical services for the provision of antiretroviral treatment in primary health care clinics in uMgungundlovu district of KwaZulu-Natal (2015), one of the key challenges was that these clinics were not equipped to support HIV treatment and care services regarding infrastructure, standard operating procedures (SOPs) and trained staff (Crowley and Stellenberg, 2015).

Lastly, a study that Cameron et al (2012) conducted among primary care nurses in seven provinces in South Africa to assess whether nurses in primary care clinics are initiating ART after attending NIMART training, showed that only 38 % of participants had completed a formal training course in dispensing, and that an understanding of the pharmacology of drug interactions in patients with comorbidities is essential for good clinical practice (Cameron et al, 2012).

In summary, inadequate pharmacy services have been identified in the literature as a barrier to implementation of decentralised health services.

2.3.4 Lack of supportive supervision

A multi-country study focused on district level management of child health services within an Integrated Management of Childhood Illness (IMCI) programme assessed whether district teams have the skills, resources, and authority to manage (Doherty et al, 2018). Insufficient access to supervision of trained child health workers at facilities was found to be a key factor affecting decentralisation of health services to a district level.

Lack of capacity for adequate supportive supervision affected implementation of decentralised services (Frumence et al, 2013). The council (district) health department was found to have inadequate capacity to carry out supportive supervision at the primary health facilities and community level to monitor the quality of health service delivery in the whole council (Frumence et al, 2013). The authors reported two main contributing factors to this situation: a lack of capacity in terms of transport, and inadequate staff to carry out the necessary supervisory visits (Frumence et al, 2013).

2.4 Factors influencing decentralisation of MDR-TB services

A study exploring whether the treatment journey of a patient with MDR-TB in South Africa is patient-centred, found that both patient- and health system-related factors resulted in sub-optimal treatment (Loveday et al, 2013). The authors found that health systems factors were responsible for most of the barriers encountered during the patient's treatment journey, and included pharmaceutical services, laboratory services, lack of adequate monitoring and evaluation systems, poor implementation of treatment guidelines, and lack of integration of TB and HIV services (Loveday et al, 2013).

2.4.1 Health system factors

Staff shortages

Staff shortages was one of the two major reasons in addition to bed shortages for the development of the MDR-TB decentralisation policy; however, progress in addressing these issues has been slow and staff shortages remain a significant barrier in implementation of the policy (Ndjeka, 2013).

Staff shortages are a specific barrier in implementation of the TB programme in South Africa, where it was indicated that staff shortages result in increased workload, rapid staff

turnover, workplace stress and burnout (Dlwati & Mavundla, 2017). Furthermore, additional responsibilities in addition to their core responsibility of managing TB patients added to their workload under already overburdened conditions (Dlwati & Mavundla, 2017).

Lack of knowledge of MDR-TB at Primary Health Care Level

One of the significant factors identified in the literature in implementing the policy is lack of knowledge of MDR-TB specifically at primary health care level.

An assessment of the knowledge levels of nurses on MDR-TB working at TB units in primary health care (PHC) clinics in an Eastern Cape district, showed that less than 40 % of PHC nurses had been trained on MDR-TB in comparison to 91 % of respondents who had been trained on HIV/ AIDS (Singh & Janse van Rensburg, 2017). Furthermore, 69 % of respondents did not have adequate knowledge on how to manage symptomatic contacts of MDR-TB while half of the respondents did not have adequate knowledge on how to manage asymptomatic contacts of MDR-TB (Singh & Janse van Rensburg, 2017). These gaps in knowledge were not only attributed to lack of trainings, but also staff shortages resulting in a high turnover of staff within the focal TB clinic at primary health care level (Singh & Janse van Rensburg, 2017).

Drug regimen challenges

At the time of this study, injection-free regimens with newer agents that are less toxic and have improved treatment outcomes were not freely available for uncomplicated MDR-TB patients and injections were still part of the WHO-recommended MDR-TB regimen unless specific contra-indications such as hearing loss were identified (NDoH, 2017).

A study conducted in four European countries, namely Austria, Bulgaria, Spain, and the United Kingdom, assessed which health care system factors were necessary for optimal treatment outcomes in MDR-TB. The following factors were identified: timely diagnosis of drug-resistant tuberculosis; measures to ensure access to a full course of treatment and support for patients; patient-centred approaches with strong intersectoral collaboration to address patients' emotional and social needs; and motivated healthcare workers with sufficient means to support patients (De Vries et al, 2017). One of the specific challenges identified was the difficulty in ensuring a full course of treatment for all patients with many patients unable to tolerate the injectable agent due to adverse reactions; furthermore, lack of evidence-based guidance on optimal drug regimens

resulted in clinicians relying rather on professional insight and their own experience; and newer agents that are potentially better tolerate with improved outcomes not yet being widely available despite WHO recommendation (De Vries et al, 2017).

2.4.2 Patient-related factors

With regard to patient related factors, the following will be discussed: Lost to Follow Up, stigma as a barrier to treatment access and care, and substance abuse amongst MDR-TB patients.

Lost to Follow Up

As a reminder, the term Lost to Follow Up (LTFU) refers to patients for whom there is no further information regarding treatment and/or mortality beyond the last known date of treatment (Moyo, 2015).

Churchyard et al (2014) found a generally high LTFU rate among patients being treated for MDR-TB in South Africa. A study by Naidoo et al (2017) showed that in terms of estimated losses at each step across the TB treatment cascade looking at national registry data, laboratory data and published studies 22 % (5,375) of MDR-TB patients did not successfully complete treatment (Naidoo et al, 2017). Thus, a significant proportion of MDR-TB patients not only fail to be cured but also do not complete treatment.

In addition, a study by Shah et al (2018) shows that Lost to Follow Up places a burden on both the health care system, which reflects poor treatment outcomes, as well as the community, where there is potentially ongoing transmission of MDR-TB by infectious patients to others.

Stigma as a barrier to treatment access and care

Stigma is defined by Goffman as “an attribute that is deeply discrediting which spoils a person's social identity or sense of self” (Craig et al, 2016:91). In addition, stigma is an important social determinant of health, which can have an impact on both individuals and communities regarding TB treatment (Craig et al, 2016).

The impact of stigma on the TB patient is significant in that it is a barrier to accessing health care, resulting in delays in diagnosis and linkage to care, as well as adherence to and completion of treatment (Médecins Sans Frontieres, 2018). Stigma is associated with poverty, social marginalisation, a risk of transmission and death. Médecins Sans

Frontieres (MSF) further states that in South Africa, 34 % of respondents to a national stigma survey said they had not shared their TB diagnosis to people outside their home, and a similar number reporting being teased, insulted or sworn at because of their TB status (Médecins Sans Frontieres, 2018).

Substance abuse among MDR-TB patients

Tuberculosis control efforts are often ineffective among patients who abuse substances (Deiss et al, 2009; Oeltmann et al, 2009). Evidence suggests that substance abuse has driven TB epidemics in a number of countries in the following ways: ineffective TB control efforts, poor adherence and poor treatment outcomes, and drug induced liver disease caused by TB medication (Jakubowiak et al, 2007; Santha et al, 2002; Suhadev, 2011; Duraisamy et al, 2014; Saukkonen et al, 2006; Lima & Melo, 2012; Ramappa et al, 2013).

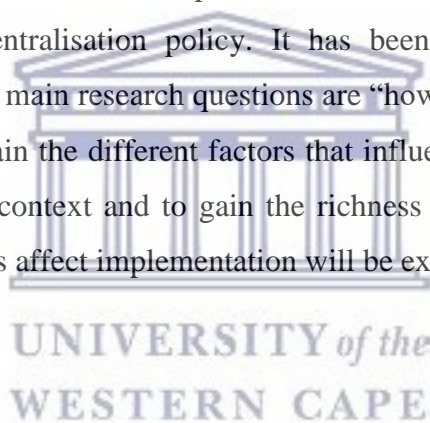
In addition, the abuse of alcohol during tuberculosis treatment can result in patients discontinuing medication (Jakubowiak et al, 2007; Santha et al, 2002). Furthermore, alcohol abuse among tuberculosis patients is associated with not only poor adherence as found in the previous studies, but also poor treatment outcomes (Suhadev, 2011). With MDR-TB specifically, similar results were found when poor outcomes were discovered among patients who consume alcohol (Duraisamy et al, 2014). Several studies have demonstrated that alcohol and illicit substances potentially aggravate anti-tuberculosis drug induced liver disease (Saukkonen et al, 2006; Lima & Melo, 2012; Ramappa et al, 2013).

3. METHODOLOGY

This section describes the methodology used for the study, and outlines the following: the study design, research setting, and study population. It continues with the sampling procedure, data collection, data analysis, rigour, and finally ethical considerations.

3.1 Study Design

A qualitative inquiry was conducted since it is a method that allows for a flexible approach, and for situations to be described from the perspectives of those involved (Robson, 2011). It is therefore specifically suited to the “bottom-up” perspective in this study. Furthermore, a qualitative approach was suitable to explore, in-depth, the experiences of the managers in the implementation of the multidrug-resistant tuberculosis (MDR-TB) decentralisation policy. It has been selected because it is suitable in situations when the main research questions are “how” or “why” (Yin, 2013); in this case not only to ascertain the different factors that influence decentralisation but to more fully understand the context and to gain the richness of data required by this study design, how these factors affect implementation will be explored.



3.2 Research Setting

This study was conducted in the Eastern Cape Province, South Africa. The Eastern Cape is the second largest province in South Africa located on the east coast and is nestled between the Western Cape and Kwa-Zulu Natal. It has a surface area of 168,966 km² and has the third-largest population of 6,996,976 (Municipalities of South Africa, 2018). The Province is divided into two metropolitan municipalities (Buffalo City Metropolitan Municipality and Nelson Mandela Bay Metropolitan Municipality) and six district municipalities, which are further subdivided into thirty-one sub-districts (Municipalities of South Africa, 2018).

3.3 Study population

The study population includes all managers directly involved in decentralisation of MDR-

TB. There are two tiers of managers: the first tier located on the periphery, for the purposes of this study referred to as the decentralised site management team (DSMT) situated at the decentralised site, and the second tier at the district level, the district health management team (DHMT) which is based at the district office. All the managers that comprise the study population are directly involved in managerial activities as defined by the MDR-TB decentralisation policy (2011). The policy described four different categories of managers and they were included since these categories are responsible for all managerial activities at decentralised sites. There is only one manager in each category of managers and in each decentralised site.

Table 1 below describes the job titles and main roles of each category.

Table 1: Categories of Managers within the Decentralised Site Management Team (DSMT) and District Health Management Team (DHMT)

Management Team	Management Category	Main Role
DSMT	Chief Executive Officer (CEO)	Provides supervisory role of management team responsible for financial, human resources and physical resources.
	Clinical Manager	Provides oversight of clinical staff in the clinical management of patient.
	Nursing Services Manager	Coordinates outpatient services, liaising with a district TB coordinator and PHC clinics.
	Focal DR-TB Nurse	Coordinates clinical care of in-patients with other health care professionals.
DHMT	District TB Coordinator	Coordinates all activities within the district, including tracing and linkage to care, availability of drugs, and continuum

		of care post discharge.
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(Source: Adapted from Management of Drug-Resistant Tuberculosis Policy Guidelines, 2013).

3.4 Sampling Procedure

Convenience sampling was conducted in this study and was done in three stages.

Stage 1: Selection of province

Firstly, the Eastern Cape Province was selected since it is one of the high-burden provinces of TB in South Africa (Statistics South Africa, 2016). TB was noted as the leading cause of death in the province with 5,210 (7.9 %) reported deaths in 2016 (Statistics South Africa, 2016). Furthermore, the Eastern Cape Province has supported a decentralised approach to MDR-TB since initial rollout of the national MDR-TB decentralisation policy in the province in 2011, with decentralised services available in all eight districts and in twenty-eight sub-districts. The provincial coverage of DR-TB services in 2017 was at 97 % (personal communication with Eastern Cape Provincial DR-TB Manager, 2017). Furthermore, this province was selected since the researcher has been extensively involved in both clinical and programmatic support in the Eastern Cape, allowing a good knowledge base of the TB programme within the province in line with case study research.

Stage 2: Selection of districts

The second stage involved selection of the districts. The districts were selected according to the sites the researcher negotiated access to and where the researcher was working at the time, thus the districts selected are based on which district the negotiated sites fall under. In total, three districts were selected.

Stage 3: Decentralised site selection

Decentralised site selection was based on the sites the researcher is familiar with and has negotiated access with management. In total, four decentralised sites were selected. Three of the four sites are TB hospitals with MDR-TB services at the hospital, and one site is a district hospital with decentralised MDR-TB services integrated into the general

services provided. With regard to infrastructure and staffing including reporting lines, the structures were the same in each site.

Stage 4: Selection of participants

Since there is only one manager at each position (CEO, Clinical Manager, Nursing Services Manager and Focal DR-TB Nurse) in each of the four sites, once the sampling for the province, districts and sites was complete there was no need to sample the participants. In total, in the peripheral tier of management at the decentralised MDR-TB sites (DSMT), there were sixteen participants, and in the district tier of management (DHMT), there were two participants for this study, thus a total of eighteen participants were interviewed.

In summary, the research study was conducted in three districts, from which four decentralised MDR-TB sites were sampled. A total of eighteen participants were included with four participants in each site and two participants from the district.

3.5 Data Collection

Data collection took place during the period from December 2017 to May 2018. Semi-structured interviews were used, allowing the participants the freedom to express more fully a deeper understanding of the unique roles and responsibilities, as well as the challenges faced in implementing these activities (Appendices 1-5).

The researcher arranged a face-to-face interview with each participant at a time and venue of their convenience to ensure privacy that the participant felt comfortable with. All interviews except for one were conducted either in the manager's office or the boardroom at the site. One interview with the Focal DR-TB Nurse was conducted in an out-patient clinic. The interviews were conducted in English, since all the participants are fluent in English and it is the language used in their management roles. All interviews were recorded using a Voice Recorder App on a smart phone, since this was the technique that the researcher was most familiar with and were uploaded onto her personal computer and transcribed verbatim. The first two interviews were transcribed by the researcher so that she could gain familiarity with the material and the process, after which a professional transcription company was used for transcribing the remainder of the interviews.

A debriefing session was used after each interview whereby the researcher asked the

participant to share how he/she experienced the interview and whether they were satisfied with the process. In addition, member checking, also known as participant or respondent validation, was used as a technique for exploring the credibility of results (Robson, 2011). This was done at the end of each interview, where the researcher summarised the information and then questioned the participant to determine whether the participant was satisfied that what was recorded was a true reflection of what the participant was saying. Furthermore, the researcher shared the transcripts with participants to check that they agreed that the transcripts truly reflected the content of the interview. This process, known as interviewee transcript review, is a technique for improving the rigour of interview-based, qualitative research and involves providing interviewees with verbatim transcripts of their interviews in order to verify accuracy, correct errors, and provide clarification if necessary (Hagens, Dobrow & Chafe, 2009).

3.6 Data Analysis

Thematic analysis using a framework method was used since it provides a highly systematic method of categorisation and organisation (Gale, 2013). It was deemed appropriate because semi-structured interview guides have been developed based on and aligned to the decentralisation policy of MDR-TB health services, creating a predetermined set of themes. The framework was used to develop descriptive and explanatory conclusions clustered around the predetermined themes (Gale, 2013).

A thematic coding approach as proposed by Robson (2011) was used in the following steps:

- Familiarising yourself with data;
- Generating initial codes;
- Identifying themes;
- Constructing thematic networks;
- Integration and interpretation (Robson, 2011).

Familiarising yourself with study data

The researcher transcribed the first two interviews herself to gain familiarity with both the process and the content. Due to time constraints a professional transcription service was used for the remaining sixteen interviews. The researcher read through each

transcription several times to familiarise herself with the data.

Generating initial codes

Initial codes were jotted down on paper while reading through the transcripts, bearing in mind the objectives of the study and looking for codes that described factors influencing implementation of the MDR-TB decentralisation policy. The researcher then uploaded the transcripts onto Atlas.ti to use its auto-coding function and applied these codes across the entire data set whereby similar extracts identified were given the same code. In total, twenty-five codes were used. For ease of reference, document groups were used for each of the five role players, namely: CEO, Clinical Manager, Nursing Services Manager, Focal DR-TB Nurse and District TB Coordinator.

Identifying themes

Once the codes had been identified, the researcher collated them into themes using code groups in Atlas.ti under the following:

- Capacity
- Data issues
- Infection control issues
- Linkages/referrals
- Lost to Follow Up
- PHC clinic issues
- Resources
- Rural challenges
- Social issues
- Staffing issues



Constructing thematic networks

A thematic map of the analysis was then developed by the researcher, which was done manually whereby the researcher went through each coded section in the Atlas.ti documents and identified those quotations deemed relevant to the theme. An example of the thematic analysis is provided in Appendix 7. The initial themes were reviewed, and those themes identified above fitted into one network. A significant number of the themes

changed as the findings were written up. For example, an initial theme of ‘capacity’ was deemed too broad and was redefined as ‘training’, in line with the idea that thematic network analysis is a reflective, ongoing process that develops over time and involves going back and forth between phases as proposed by Nowell et al (2017) and Braun & Clarke (2006). During this process, no overlapping of codes or themes was identified therefore no themes were deleted, however one new theme was identified (roles and responsibilities).

Integrating and interpretation

Using the network developed above, the researcher was able to further refine the themes through a process of exploring, describing, and interpreting patterns as described by Robson (2011). The researcher’s supervisor was key in assisting during this step, whereby specific themes were finalised during drafting of the findings.

3.7 Rigour

The following strategies were used to ensure rigour in this study: providing a thick description, developing an audit trail, ensuring dependability and confirmability through member checking, reflexivity, and peer debriefing.

In this study the researcher has provided sufficient thick description of the context in which the work was undertaken to allow readers to have a proper understanding of it, thereby enabling them to compare the instances of the phenomenon described in the research report with those that they have seen emerge in their situations, a strategy proposed by Shenton (2004).

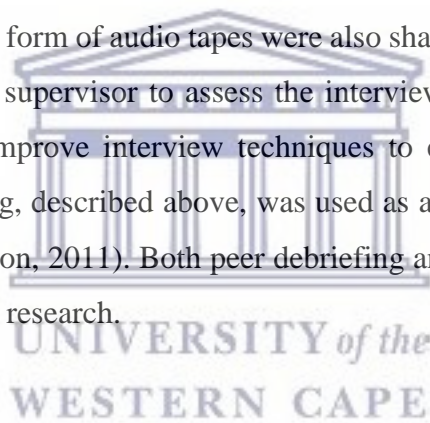
Audiotapes were used for recording the discussion and ensure that there was a clear audit trail from raw data to final themes (Gale, 2013). In addition, written notes were made by the researcher directly onto the interview guide during the interviews, to record points that stood out as important with each question and were stored in a folder which was only accessible to the researcher. Interviews in audio format using Mp3 files, in addition to reflection notes that were captured at various times throughout the research process were stored on the researcher’s personal laptop.

Transferability has been ensured by the researcher using thick description, to enable other researchers to assess whether the findings are transferable to their own setting (Korstjens & Moser, 2018). The researcher has also taken into consideration dependability and

confirmability by recording not only the findings, but also the processes, to allow the work to be repeated if not necessarily to gain the same results (Shenton, 2004).

Reflexivity was a further strategy whereby the researcher kept reflection notes throughout the study to allow capturing of thoughts, feelings and ideas to reflect upon once data was analysed, and which were then added to the discussion of the study findings. Reflexivity is the process of continuous reflection on the research, examining both oneself as researcher, and the research relationship, as advocated by Alley, Jackson & Shakya (2015).

Peer debriefing is the review of the research process by someone familiar with the research or the topic being studied and gives the researcher a sounding board to challenge and question methodology and provide feedback and support (Lincoln & Guba (1985). In this study, peer debriefing after each set of interviews was provided by the researcher's supervisor through telephonic communication and review of written reflections shared by the researcher. Raw data in the form of audio tapes were also shared with the researcher's supervisor which allowed the supervisor to assess the interview technique used and to provide support on how to improve interview techniques to ensure richness of data. Furthermore, member checking, described above, was used as a technique for exploring the credibility of results (Robson, 2011). Both peer debriefing and member checking are forms of validity in qualitative research.



3.8 Ethical Considerations

The study proposal was submitted to the Faculty of Community Health and Health Sciences, the Higher Degrees Committee of the University of the Western Cape, and the University of the Western Cape's Ethics Committee for approval. Once ethical clearance was obtained from the University of the Western Cape, permission to conduct the study was obtained from the Eastern Cape Epidemiology, Surveillance and Research Directorate. Permission was also sought from the Decentralised Site Management Teams (DSMTs) and the District Health Management Teams (DHMTs) for the participants functioning at both the decentralised sites and district level.

Prior to the interview process, participants were verbally invited to participate in the study and the details of the study were explained to them. They were provided with a Participant Information Sheet with details of the purpose of the study and data collection methods to

be used in the study, assurance of confidentiality, and their right to refuse participation. Willing participants were informed that should they feel uncomfortable at any stage during the interview, they were not obliged to answer the question. It was explained to them that should they experience any psychological or other discomfort, they would be referred to a health care provider in a confidential manner. Furthermore, participants were made aware that they could withdraw at any time during the research study without any negative consequences to themselves. They were then requested to provide written consent to voluntarily participate in the study, as well as for their interview to be audio-recorded and their data to be used in a publication of findings. The Informed Consent Form and Participant Information Sheet were in English since, as managers in the Department of Health, they were assumed to be proficient in English.

Due to the participants working in different districts, face-to-face interviews were arranged at a time and place of convenience of each participant. The interviews were audio-recorded with the permission of the participant and transcribed verbatim. Each respondent was given a unique identifier to replace their names to maintain anonymity. The paper-based notes were stored in a locked cupboard, while the electronic version of the recordings and transcripts were stored using password-protected files on a password-protected computer to which only the researcher had access. Where individual statements from the interviews potentially revealed the identity of a participant, the information was not used in the written findings. The audio recordings and transcripts will be destroyed after a five-year period of time has lapsed.

To mitigate the fear of exposure, the researcher established a good rapport with the participants, in most cases adding to an existing level of trust due to the working relationship between the researcher and participants. The results and recommendations will be disseminated with the sites, districts, and the province on an appropriate platform as agreed between the researcher and participants to ensure that feedback is given to those who participated in the study and to inform quality improvement.

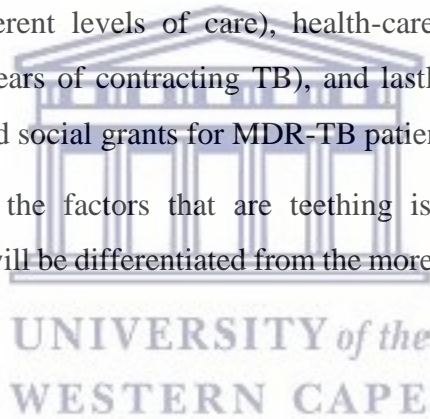
In summary, this chapter describes the qualitative design and case study approach used in the study. Data collection techniques, as well as the different phases utilised during data analysis, have been described. Finally, an explanation of the rigorous process and ethical considerations that were considered during the study were described.

4. FINDINGS

This chapter presents the findings on the roles and responsibilities of the different role players and the factors influencing the implementation of the multidrug-resistant tuberculosis (MDR-TB) decentralisation policy (2011).

The findings of the study can be classified into two main categories; roles and responsibilities of key role players at decentralised MDR-TB sites, and factors influencing implementation of the MDR-TB decentralisation policy. Findings under roles and responsibilities will be divided into ascribed role, actual role, and comparison between the two. Findings included under factors influencing implementation of MDR-TB policy will include the following: operational constraints (patient flow along continuum of care, ambulatory care, and additional responsibilities), health system factors (poor alignment of NGOs to government services, lack of integration of TB and HIV, and lack of communication between different levels of care), health-care provider factors (staff shortages, staff morale, and fears of contracting TB), and lastly patient-related factors (Lost to Follow Up, stigma and social grants for MDR-TB patients).

It is important to note that the factors that are teething issues due to the recent implementation of the policy will be differentiated from the more fundamental health care system factors.



4.1 Roles and responsibilities of key role players at decentralised MDR-TB sites

As a reminder, the key role players in this research are the Chief Executive Officer (CEO), Clinical Manager (Doctor), Nursing Services Manager (NSM) and Focal DR-TB Nurse (FN).

4.1.1 Ascribed role

A list of ascribed responsibilities has been extracted from the policy and is shown in Table 2 below.

Table 2: Ascribed responsibilities of each role player at decentralised site management level

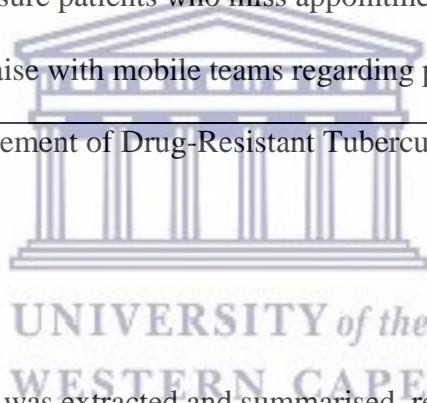
Role player	Responsibilities
Chief Executive Officer	<ul style="list-style-type: none"> • Develop appropriate strategic and operational plans and budgets. • Provide oversight of the highest quality clinical and non-clinical services. • Ensure regular collection, evaluation and reporting of high-quality data on services provided. • Liaise with cluster managers, hospital boards and community groups as well as other district hospitals.
Clinical Manager (Doctor)	<ul style="list-style-type: none"> • Assess patient for co-morbidities and request baseline tests. • Initiate DR-TB treatment, monitor patient clinically, and adjust treatment where necessary. • Report adverse drug reactions to Medicines Control Council. • Provide prompt referral for tertiary or specialist care where necessary. • Ensure regular clinical monitoring through timeous laboratory testing. • Educate nurses and other members of team.

Nursing Services Manager	<ul style="list-style-type: none">• Liaise with mobile teams and staff at facilities administering DR-TB treatment.• Ensure that recording and reporting procedures are up to date.• Liaise with other stakeholders in the geographical area.• Organise and document six-monthly contact screening.• Trace newly-diagnosed DR-TB patients and facilitate linkage to care and admission if necessary.• Arrange regular monthly visits for outpatients.
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	<ul style="list-style-type: none"> • Coordinate and monitor tracing team activities.
Focal DR-TB nurse	<ul style="list-style-type: none"> • Monitor inpatients and refer to doctor where necessary. • Coordinate household assessment, discharge and linkage to outpatient services. • Manage weekly outpatient clinic. • Provide Voluntary Testing and Counselling (VCT) for HIV. • Provide educational talks to patients. • Ensure that the paper-based MDR-TB register is updated regularly. • Ensure patients who miss appointments are traced. • Liaise with mobile teams regarding patient management.

(Source: Adapted from Management of Drug-Resistant Tuberculosis Policy Guidelines, 2013)



4.1.2 Actual role

The following list of activities was extracted and summarised, reflecting the actual roles and responsibilities as expressed by participants:

Chief Executive Officer (CEO)

- Resource management (including human resource, material and financial) for implementation of those policies, not only the decentralisation policy but also infection control and national core standards policies;
- Oversight of the various multi-disciplinary team committees within the site;
- Reporting of monthly expenditure to the Budget Advisory Committee Meeting;
- Management stakeholder communication including district/provincial and public engagement through the hospital board;
- Provision of oversight of linkage within district and outreach programmes to ensure integration of service delivery at primary health care level.

Findings showed that where the CEO was a doctor, due to the additional expertise the responsibilities of the CEO included purely clinical activities: *“60/40 doing administrative work and then the other 40 % it’s more clinical, seeing patients... I have one Medical Officer... when he’s not around then I would have to be a full-time doctor including after-hours care and OPD [Out Patient Department] cases”* P13 (1:171).

Clinical Manager

- Oversight and coordination of the clinical component of staff, including doctors, pharmacists, social workers, radiographers, occupational therapists, and audiologists;
- Ensuring quality of clinical care through adherence to guidelines regarding treatment regimens, regular monitoring (laboratory), and side effect management;
- Oversight of pharmacovigilance;
- Management of clinical services budget;
- Non-clinical responsibilities include the role within various committees, including skills development, complaints, and accommodation committees.

A responsibility specific to a rural clinical manager when questioned about implementation of responsibilities in line with the policy, was that of providing a holistic approach to integrated care in a specialist vertical programme: *“it’s the constant battle between vertical and horizontal programs. You know the reason there’re vertical programs is [sic] because it is more efficient and easier to remember to do the same thing ten times in a row and you use the same paperwork”* P6 (18:29). The same role player further explained that one of his responsibilities is to ensure clinical staff has a balance between focal and other staff in the decentralised site: *“allowing somebody to champion that without deskilling the rest of the team so that that’s always and finding balance”* P6 (18:30).

Nursing Services Manager

One of the nursing services manager described how she implements her responsibilities in line with the policy as follows: *“I’m like an eagle, I’m an umbrella that is covering all the stakeholders to ensure that things are happening until the patient has been awarded an outcome that will mean at the end of the treatment term and then the nursing side...”*

the bedside nursing, ensuring that policies and prescripts are available, and they are known, they are applied with understanding. Where I pick up difficulties or any problems, then on-site training even if it's just information sharing, then further than that we extend to institutional training, further than that we go to the sub-district training” P3 (11:90).

Extracts from other Nursing Services Manager interviews in terms of actual activities performed are included in the list below:

- Providing a supervisory role from diagnosis, admission, monitoring of the patient and show that the correct treatment is given according to the regimen and that regular monitoring is performed;
- Ensuring monthly follow-up of patients;
- Ensuring that those patients on injectable phase of treatment have the necessary audiometry testing to exclude drug-induced hearing loss;
- Supervision of nursing staff in monitoring of all adverse events and ensuring adequate intervention through communication with the clinicians as well as the multi-disciplinary team including audiology and social worker;
- Facilitating stakeholder engagement, including non-governmental organisation (NGO) support, for patients to receive the necessary support in completing treatment once discharged into the community.

Focal DR-TB Nurse

Extracts from interviews with Focal DR-TB Nurses in terms of actual activities performed are included in the list below:

- Providing support as outreach nurse and doing reviews at the clinics in the catchment area for that specific decentralised site;
- Providing mentoring on DR-TB management for primary health care nurses;
- Liaising with the pharmacists and ensuring that the patient understands the medication and side effects, and that side effects are managed and reported;
- Participating in home visits to the newly diagnosed TB patients' homes to assess social issues and infection control, and establishing a support system for discharge;
- Doing home visits to patients who are interrupting treatment and provide

counselling;

- To educate and screen family members;
- To provide the linkage for clinical support of the HIV programme;
- To ensure timeous updating of records of both the patient folders and the registers.

4.1.3 Comparison between actual and ascribed role

In general, there is a similarity between the actual and ascribed roles of the role players. As highlighted in Appendix 6, actual responsibilities that are not included under ascribed roles include the following: with regard to the CEO, findings suggest that in addition to the actual role of ensuring implementation of the decentralisation policy, there are other policies including infection control and national core standards policies that are not mentioned in the ascribed role; furthermore, the actual role of the Clinical Manager includes management of the clinical budget, as well as participation in non-clinical committees including skills development, complaints and accommodation committees over and above the ascribed roles included in oversight of clinical function; with regard to the Nursing Services Manager, the actual role includes ensuring those patients on injectable agents have the necessary audiometry testing to exclude drug-induced hearing loss; and finally, with regard to the role of the DR-TB focal nurse, one of the key roles mentioned that does not fall under the ascribed role, is that of mentoring on DR-TB management for primary health care nurses. This additional activity, as previously discussed, should fall under the responsibility of the district and not the decentralised MDR-TB site.

4.1.4 Additional responsibilities

One of the identified factors regarding roles and responsibilities was the expectation to take on additional responsibilities over and above the responsibilities of that particular role player: *“You know nobody has a scope yes we’ve got a kind of a usual job description”* P6* (18:27). Furthermore, role players are required to cover where specific positions are not filled: *“There is no Nursing Services Manager on the organogram for the hospital. There is also no Area Manager. So the Operational Manager is performing the duties of Nursing Services Manager and Area Manager. And I have to cover in the wards when I’m needed. I also have to do outreach because there is only one sister for*

outreach” P15 (18:106).

Findings showed that some doctors at decentralised sites are expected to perform duties outside of the decentralised site: *“There’s a huge shortage of doctors, which is another thing, so much that we end up having...to work in the district hospitals”* P2 (13:101).

The findings suggest that the hospitals are required to take on the role of training and mentoring PHC sisters due to an apparent lack of knowledge amongst the clinic supervisors: *“I don’t even think the clinic supervisors has either the knowledge to support them [PHC Nurse] because if the sisters knew that their supervisor is having the capacity, they would rather phone them, but they don’t. They phone us”* P16 (5:99). This appears to impact on the management and quality of care of DR-TB patients at PHC (district) level: *“There’s poor, or there’s mismanagement of patients. Because, I believe that we need to look at our indicators and how we perform but also at the quality of care, this is important to me as a primary healthcare clinician. And, both I’m going to say, both is lacking”* P18 (16:27).

In terms of capacity, according to the findings, PHC staff view DR-TB as an additional burden that should be managed at the decentralised sites: *“You know nurses really need to have... Their mind need to change and I think this is what makes it difficult when I say that they don’t embrace DR-TB, because to them it’s an extra burden that is now being given to them, and they feel that we don’t cope with the burden of susceptible TB, and yet you bring this onto us”* P18 (16:28).

Furthermore, findings amongst clinicians interviewed suggest lack of capacity at PHC-level where PHC nurses should not be expected to manage complex DR-TB cases: *“You know the next stage of decentralisation going to primary healthcare I think the expertise is a challenge. There’s a tendency sometimes in primary care that we just add another thing to the PNs [Professional Nurse] plate and the reality is that we’re asking a lot of our primary health care nurses already... and then to add in like DR-TB it’s not quite as simple as it looks”* P6 (18:23).

Therefore findings show that the requirement to assume additional responsibilities is an issue in both the decentralised site and other facilities including PHC clinics.

*P is used to anonymously link the participant from each interview to each specific role and MDR-TB site.

4.2 Factors influencing implementation of MDR-TB decentralisation policy

4.2.1 Service delivery factors

The following service delivery factors will be discussed: patient flow on the continuum of care, daily injections and ambulatory care, and additional responsibilities.

Patient flow on continuum of care

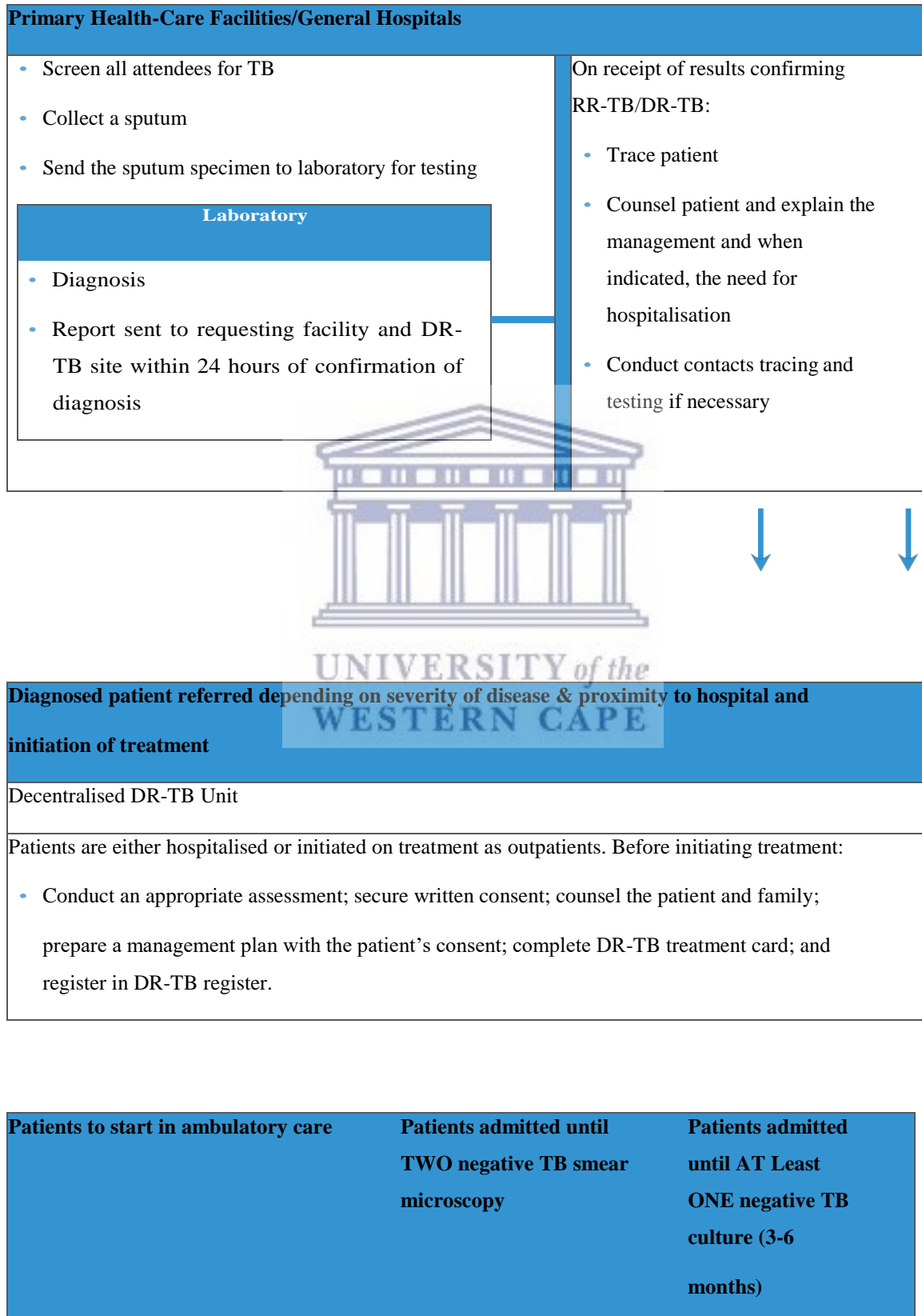
All activities conducted are interwoven into one multi-disciplinary approach which can be visualised according to patient flow across the continuum of care from the diagnosis of a patient to the successful outcome of the patient, namely cure (culture conversion) or completion of treatment.

Firstly, any patient who tested positively on symptomatic screening for TB at a health care facility requires a diagnostic test. If the patient is able to cough, this is in the form of a sputum GeneXpert test which is sent to the laboratory to determine whether there is confirmation that the patient has active TB and if so, whether there is rifampicin resistance (RR). All RR-TB patients, whether rifampicin mono-resistant or confirmed multi-drug resistant, are treated with an MDR-TB regimen and need to be traced, counselled, and up-referred from the PHC level to the nearest decentralised site for initiation of treatment. In the Eastern Cape Province only certain TB facilities (decentralised MDR-TB sites) have been selected as having capacity for initiating MDR-TB treatment.

Once the patient has reached the decentralised site, a multi-disciplinary team approach ensures the following: that appropriate assessment is conducted including taking the necessary baseline laboratory tests and a management plan is prepared (doctor/ nurse); that the patient and family are counselled and any social issues are addressed (social worker); and that recording is done in the patient treatment card, the paper-based register, and the electronic register (EDRWeb). The patient is either hospitalised or initiated on treatment as an outpatient (ambulatory care), depending on various factors including how ill the patient is, infectiousness of the patient, level of resistance, and social support in the home and community.

If the patient is discharged from the decentralised MDR-TB site to the clinic, there needs to be adequate communication between the two levels of care regarding transport, the patient management plan and dates of monthly reviews at the decentralised site.

Figure 1 below illustrates the activities at the decentralised site level and other levels of care as visualised according to this patient flow:



<ul style="list-style-type: none"> • Patient is ambulant, in fair to good general condition (BMI > 18.5) • Patient is low grade transmission risk (smear negative) • Patient is smear microscopy positive but is stable • All GeneXpert positive with resistance to rifampicin started on MDR-TB treatment 	<ul style="list-style-type: none"> • Very sick MDR-TB patient • Patient with very high-grade transmission risk (three plus smear positive) • Patients who do not have an extensive resistance pattern 	<ul style="list-style-type: none"> • Pre-XDR-TB • XDR-TB patient • MDR-TB re-treatments
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Figure 1. Patient flow on the continuum of care.

(Source: Adapted from Management of Drug-Resistant Tuberculosis Policy Guidelines, 2013).

Daily injections and ambulatory care

According to the MDR-TB Decentralisation Policy, stable patients who are not deemed highly infectious to others (smear negative patients) and have adequate household support may be treated as ambulatory and do not require admission (2011:15). However, ambulatory care still requires six-day-per-week injections which is not feasible from an operational perspective: *“the researchers really should try and work out what’s practical before they trial six-day-a-week injections. So, we do five-day-a-week injections because that team isn’t functional at the moment”* P6 (18:31).

It was evident from the findings that PHC clinic services are limited to during the week only: *“Since our primary healthcare facilities is not open, they are closed over weekends”* P18 (16:34). As a result, findings suggest that patients are being admitted in order to ensure that they receive six-day-per-week injections rather than because they are ill: *“The patient needs six days of kanamycin, so if there’s somebody out there, we only had one patient who’ve been treated outside because a sister in the community was willing to give the Saturday’s dose, but otherwise we admit all the patients”* P16 (5:110). This results in further bed shortages, whereby sick patients who require admission are referred to neighbouring sites.

When probed further, it was felt that even if there were available injection teams, the logistics of getting them to these remote clinics especially on weekends, *“...will be a challenge. I mean resources, I cannot see”* P16 (5:113). Transport was mentioned as a

specific factor for the outreach teams, *“Our outreach team used to go and try to use the cars of the hospital but it’s not adequate for the terrain. If the patient is like maybe in town, it’s fine, but most of our patients stay in settlement camps, so it’s not conducive”* P12 (6:133). Difficulty locating patients was another issue affecting outreach teams: *“there’s a whole lot of new areas that are coming up here in our area. So there’s no clear street names, there’s no street numbers. So it’s difficult also to locate a patient”* CM3 (3:77).

Therefore, implementation of six times weekly injections as advocated by updated national policy recommendations and informed by the Bangladesh study when this study was conducted (Sotgiu, 2017), are limited by operational constraints in our research setting.

4.2.2 Health system factors

Health system factors include the following: poor alignment of NGOs to governmental services, lack of integration of TB and HIV services, and lack of communication between different levels of care.

Poor alignment of NGOs to governmental services

NGO-funded activities do not appear to be aligned with the department of health’s outreach services: *“So, that’s the kind of challenges that we have now, and therefore, we have tried it, but it’s difficult really because we tried to align the NGOs with our, ward-based outreach teams, you know, but, it’s difficult”* P18 (16:30).

A specific example identified from the findings was the issue of linkage to care, that is referring diagnosed patients to an appropriate level of care for treatment, *“...at the moment, we have to be honest that not all patients that has been diagnosed has been linked to care...you have this NGO that is funded for, I’m just making an example, for HCT [HIV Counselling and Testing], and it’s not funded for linkage to care”* P18 (16:35).

This lack of alignment of NGOs to governmental services affects the role players’ efforts in ensuring adequate outreach services in order to effectively carry out their responsibilities across the continuum of care.

Lack of integration of TB and HIV services

In addition to lack of alignment between NGOs and governmental services, there does not appear to be integration of TB and HIV services: *“And what they also mentioned was, they are separately employed for TB and someone separate for HIV. And the ones that are working for TB, they are all moving towards the HIV side because they are being paid the stipend is a little bit more. So there is no integration from their side as well. So if I go to your house, even if anybody is coughing, it’s none of my business because I’m here to test for HIV”* P15 (15:109). Integration of services at community-based level in order to ensure that patients receive the full package of care as required by the DR-TB programme is therefore an area which is lacking according to the findings.

Furthermore, lack of retention in care of patients on antiretroviral therapy impacts on the burden of TB: *“HIV positive patients on ART, they default like crazy...because the patient has now defaulted ART, the patient becomes now sick, and we know the first opportunistic infection is TB, which means then, it adds to our caseload”* P18 (16:36).

In addition, it appears that the district takes ownership of HIV training but training on TB is primarily the responsibility of the decentralised sites: *“At the district level they also have those training there’s never anything that deals with TB...there’s a lot though around HIV, but TB and MDR, I think the district wants it to be like the TB institutions have to be coordinating their own TB, you know, information”* P9 (2:102).

Lack of communication and coordination between different levels of care

Lastly, communication and coordination of services between the decentralised sites, district, PHC clinics, and ward- based outreach teams is required, an area which was highlighted as a gap. Lack of communication refers to two distinct areas, firstly lack of communication between staff at the different levels of care; and secondly, lack of communication of data between the different levels of care.

Where staff is concerned, the following finding was evident: *“They are not communicating properly with the clinics, so there is a gap between the districts and the clinics”* P11 (4:199). Lack of communication was also a factor influencing activities of ward-based outreach teams supporting the PHC clinics: *“When it comes to ward-based outreach teams...there isn’t that kind of integration... I don’t even think there’s communication”* P9 (2:101). This affects linkages between the decentralised site and the district, a key responsibility of role players interviewed.

A further finding was lack of communication of data from one level to the next, “*TB programme is data driven, therefore, we need to ensure the integrity and the validity of the data and it usually starts at facility level... we do not have the electronic DR system at the facility’...when the data capturer at the decentralised site need to capture this information and there's all of these fields is not even completed, how difficult it is in then to obtain quality data in order for us then to report to the next level*” P16 (16:38). Lack of the electronic capturing system for MDR-TB at primary health care level thus affects the data completeness and quality that is reported to the next level.

4.2.3 Health-care provider factors

Health-provider factors include the following: staff shortages, staff morale, and fear of contracting TB.

Staff shortages

The policy recommends a multi-disciplinary team approach including the following staffing complement for decentralised sites:

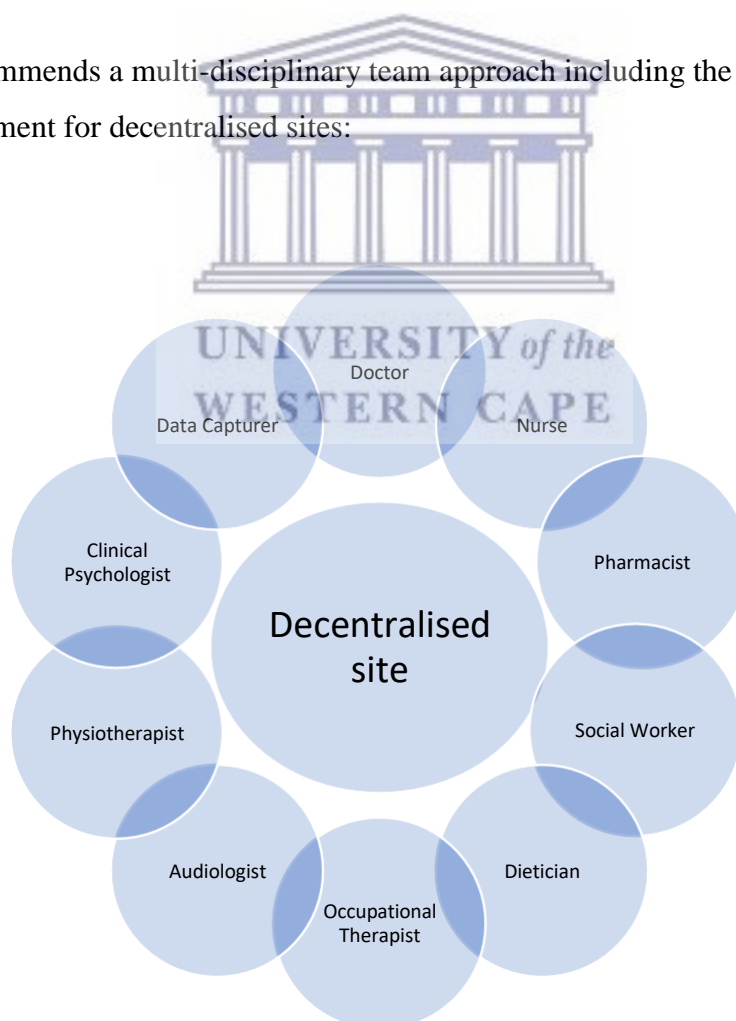


Figure 2. Recommended Staffing Complement for the Decentralised MDR-TB Site
(Source: Adapted from Management of Drug-Resistant Tuberculosis Policy Guidelines,

2013).

However, the study found that the MDR-TB sites were experiencing staff shortages in most of the recommended categories of staff according to the policy, specifically, in the categories of auxiliary support staff. Furthermore, the study found the following factors contributing to the staff shortages experienced: lack of social support staff, posts remaining vacant for significant periods of time, ineffective recruitment, loss of clinical posts, and an absence of retention strategies.

Key social support staff was lacking: *“We have no social worker...even at PHC level they don't even feel that there's a social worker support there for them”* P16 (5:109). Social support is critical in order to ensure a multi-disciplinary approach to holistic care as recommended by the Management of Drug-Resistant Tuberculosis Policy Guidelines, (2011: 16), and staff shortages in this area affect implementation of the decentralisation policy.

Furthermore, certain posts remained vacant for significant periods of time, *“A whole year we went by without a physio”* P10 (3:74). Longstanding vacant posts among management level have resulted in other managers in acting positions rather than permanent posts: *“I've been acting nursing service manager since 2010”* P11 (4:202).

In terms of recruitment processes, concern was expressed that recruitment is slow and ineffective with processes still centralised and controlled at provincial level: *“When it comes to filling of posts, vacant posts, it's a challenge which really makes us then remain with vacancies that are not filled...I cannot advertise that post, it must then be head office that approves and actually advertises. Then when it comes to filling of that post, the selection part for certain level...then it has to be done here and I can appoint, but even that has restrictions now. You cannot appoint, it must first go to Bisho again”* P9 (2:99). This finding suggests that recruitment of staff has not been decentralised in line with the policy.

In terms of clinical posts, findings suggest that once a person exits a post that position is frozen: *“Basically they're not replacing lost post...austerity measures...It's very difficult now, you won't see any clinical posts really available”* P10 (3:73). Recent changes in structure of hospital organograms has also resulted in posts being lost, *“The organogram has taken away a lot of staff members and added on some unnecessary staff members...If I speak now just specifically of us, I am not on the organogram...So there's a lot of like uncertainty and unease amongst the staff members with regards to that. So it's difficult also to plan activities also. Because if you know you're not part of that organogram, it's*

difficult really” P10 (4:75). This freezing of posts contributes directly to staff shortages.

In addition, an absence of retention strategies contributes to staff shortages through high turnover of staff, *“If you want to get applicants, there are no attractive measures, even with our retention, if someone wants to go out and go back to wherever, we don’t have retention strategies unlike in private sectors”* P13 (1:171). Lack of accommodation and better educational opportunities in urban areas were cited as specific areas where retention strategies were lacking, *“There is no accommodation allowance. There’s no accommodation also for the nurses on the premises...those who apply they apply with the intention of moving quickly to the urban area. If someone is coming from that side and wants to further their education, they will apply because there is a post but few months down the line, they will request now a transfer”* P13 (1:173).

Staff morale

A specific factor among those interviewed was poor staff morale; *“It’s staff burn-out, I don’t know, because I think they are not motivated because they are already short, they feel overwhelmed with their work and so if one was absent last week, so it’s like a payback time, I’m also going to be absent so they you can feel the burden that I felt”* P13 (1:168).

When probed further for possible reasons for poor staff attitude it was shared that a lack of appreciation by both staff and patients was a contributing factor, and that a negative attitude affects patient care; *“Attitude of staff members, you know... that really can be, I don’t know, disappointing or depressing so to speak... you find out that our staff members are not motivated mostly...hence they end up having negative attitudes and of course as you can imagine having a negative attitude towards our sickly patient”* P2 (10:104).

One of the participants described a lack of appreciation from both staff and patients as a cause of this poor attitude; *“I think most of the time what I’ve heard is that they’re overloaded with work. Their complaints are not being attended to properly, they don’t feel appreciated by the superiors. Now they don’t feel appreciated by the superiors and mostly and sometimes by the patients themselves as well”* P2 (10:103).

Fear of contracting TB

It emerged from the findings that there is fear among health care workers of contracting DR-TB; *“Immediately they see that patient I’m sure they fear that patient will infect them with that DR-TB...now they don’t want to use the N95 mask..., but immediately you say I’ve got an MDR, all of them they have that fear of unknown”* P8 (9:177).

When probed about lack of accountability among nurses for managing DR-TB patients; *“I just think it’s fear”* P12 (6:106). *“They are afraid of, particularly some nursing staff, of admitting patients that are labelled as DR-TB”* CM4 (14:79).

4.2.4 Patient-related factors

Patient-related factors that will be discussed include: Loss to Follow Up, Stigma, and social grants of MDR-TB patients.

Loss to Follow Up

The findings of the study identified three factors affecting Loss to Follow Up, namely: length of stay, lack of understanding the importance of taking medication, and defaulting treatment due to pill burden and side effects of treatment.

Firstly, length of stay was found to be a factor for patients according to study findings, *“Patients don’t want to stay there too long because they’re far away from home, relatives can’t come and visit them, so they itch to get out of there. And obviously once they are out of there then the defaulting starts really”* P10 (3:76).

Secondly, lack of understanding the importance of taking medication among patients was described, *“I just think that on the community side it is just more the fact that our people just don’t seem to understand health as it is. I have the feeling or they will say if they’re sick it’s the nurses or the doctors that must fix it. But from the community side they don’t understand that they have to put effort in too. They have to take their medication”* P12 (6:125).

Thirdly, defaulting treatment due to pill burden and treatment side effects was a factor leading to Loss to Follow Up as described by participants, *“as you know when it comes to the DR-TB treatment it’s a lot of tablets that they need to swallow. Some of them will give a reason and say, but okay it’s the side effects of the medication, I’ve got nausea and vomiting and that is the reason why I don’t take the medication.”* P18 (16:32).

Stigma

Stigma was experienced in both the home and in the public health facility by the patients. The following findings suggest stigma experienced in the home, *“It’s like now once the*

patient has been diagnosed as MDR, you find that at home they don't want to accept the patient back. The patient now is supposed to be discharged to finish treatment at home, now the family is not willing to take the patient back, now you start to hear all sorts of things to say no, it was not my child by the way, it was my aunt's, the aunt is like, nobody wants to take just because of the stigma of being an MDR patient" P11 (4:201).

Stigmatising factors were masks for infection control and mobile clinic vehicles, *"I think that's a thing with patients, it's stigma, it's wearing a mask...wearing a mask, having the government vehicle in front of their houses...it's stigmatising them. I told you must phone me or come to my work, or don't come to my workplace, now everybody's going to ask why are you here" P16 (5:104).*

Stigma experienced by the patient within the health facility was also described, *"...so that stigma to that patient, so that's why I just go to them [nurses], please people, this is a patient, a human being and is having a disease that will have next time even you yourself, even your brother or sister, it's a human being. So you must treat them same thing and then they said, it's your job to do all this" P8 (9:193).*

Social grants for MDR-TB patients

Aligned to the rights of the constitution, the MDR-TB decentralisation policy (2011) refers to the Social Assistance Act 13 of 2004 as providing a framework for social assistance where necessary for all patients that are diagnosed with MDR-TB. Thus, following an assessment by a clinician, MDR-TB patients are eligible for a temporary disability grant.

However, a further patient-related factor identified was that of social grants being used to buy alcohol, *"Alcohol abuse, it's a big, big, big thing. People would use their grants... we don't even go out during the first week of every month after grants pay-outs. Because you know, you're either getting them drunk, you won't get them, there will be issues when you get there" P16 (5:78).* Findings described alcohol abuse occurring even in the hospital, *"They abuse alcohol inside the hospital. The police has made many turns here. They take them then they sleep until they are sober, then they bring them back" P15 (15:110).*

Findings also suggest a link between misuse of grants and poor treatment outcomes, *"And now people being people, some of them instead of buying food with this grant, go and buy alcohol and then they don't come to the clinics to get their treatments. That is a major*

challenge which is causing default or stopping of treatment and ultimately leading patients to becoming sick and then they have to be hospitalised at a later stage and then most of them, they don't survive, they die" P14 (14:76).

In summary, roles and responsibilities have been discussed, specifically how the ascribed and actual roles differ. In addition, factors influencing implementation of decentralisation of the MDR-TB policy have been presented and include: operational, health system, health provider, and patient-related factors. The following chapter will discuss the findings.



5. DISCUSSION

The discussion focuses on unpacking the challenges emanating from the findings of the study: roles and responsibilities; holistic approach to integrated care within a specialist vertical programme; poor staff morale; poor alignment of non-governmental organisations (NGOs) to government health services; lack of knowledge of multidrug-resistant tuberculosis (MDR-TB) amongst private health care (PHC) clinic supervisors; lack of retention in care of HIV positive patients impacting on TB burden; lack of communication between reporting structures at different levels of health care; and finally, stigma experienced by the patient in the community.

Regarding the implementation of the MDR-TB decentralisation policy, there was a mismatch between practice and policy in terms of roles and responsibilities. The study found that traditional roles and responsibilities were hindered due to lack of availability of the complement of staff to support a multi-disciplinary approach. In addition, key role players were expected to assume additional responsibilities to those defined in the MDR-TB Decentralisation Policy (2011). This is similar to findings with the exploration of health care workers' challenges in the rollout of antiretroviral therapy in Nelson Mandela Bay Metropolitan District in the Eastern Cape, where it was found that there was a lack of a full complement of staff to perform the tasks required (Williams, van Rooyen & Ricks, 2018).

The findings of this study not only found a mismatch between the staff that was supposed to be there according to the policy and who were actually on the staff establishment, but also that task shifting had to be implemented to address the lack of the full complement of the staff. Interestingly, it has been found that managing health care utilising vertical health programmes has often resulted in the lack of clarity about certain responsibilities and lines of accountability created during the decentralisation process (McIntyre & Klugman, 2003). However, decentralisation of health services using a task shifting rather than task sharing approach, with shifting of responsibilities from medical to professional nurses and community health workers, not only increased access to antiretroviral therapy (ART) for patients but has also increased the workload of nurses (Williams, van Rooyen & Ricks, 2018).

Bedelu et al (2007) also showed similar findings with the provision of a decentralised approach to provision of antiretroviral services at primary health care level resulting in task shifting due to a significant increase in the number of patients accessing services. Despite utilisation of clinic services almost doubling over a two-year period (from 16,465 service users in April 2004 to 28,191 service users in April 2006), the number of professional nurses did not increase, and task shifting was an inevitable consequence of this significant increase in workload (Bedelu et al, 2007). The traditional role of the nurse would include the following key responsibilities: support of the physician, conducting Voluntary Testing and Counselling (VCT), ensuring readiness of patients for ART and supervising community caregivers. However, in this task shifting approach (Bedelu et al, 2007), the nurses' responsibilities included the following: management of opportunistic infections, performing clinical staging of HIV positive patients, initiation and monitoring of ART, supervision of clinic staff, and supervision of adherence counsellors, responsibilities that would traditionally fall under the role of the clinician (Bedelu et al, 2007).

Although not a finding of this study, the evidence in the literature suggests that decentralisation of MDR-TB services results in improved coverage and satisfactory treatment outcomes without compromising quality of care (Loveday et al, 2018). In order to achieve this, a holistic multi-disciplinary approach to patients treated for MDR-TB is recommended in the MDR-TB decentralisation policy (2011). Findings from this study, however, showed that implementing a horizontal, holistic approach to integrated care within a specialist vertical programme was a challenge. This finding is similar to evidence that a multi-disciplinary approach to patients provides equivalent clinical outcomes as well as improved disease control and service delivery, although there are challenges in achieving integrated multi-disciplinary care between specialist services and primary care (Mitchell et al, 2015). Mounier-Jack, Mayhew & Mays (2017) concurred when they found that in resource-constrained settings there was a discrepancy between approaches in local health care systems, which focus on vertical disease-specific programmes, and a horizontal, integrated approach where patients are managed with comorbidities and/or complex health needs.

This study found that the staff appears to have poor morale. The staff specifically

accounted their poor morale to being overloaded with work. A healthy morale among the workforce is deemed an important component in the work environment. Managers often focus on productivity while neglecting staff morale, despite output of employees being dependent on staff morale (Matsaung, 2014). Similarly, workload was reported as one of the factors that affected motivation and job satisfaction (Bonenberger et al, 2014; Matsaung, 2014). In addition to workload, other factors included organisational commitment, satisfaction with management, and career development (Bonenberger et al, 2014).

The implementation of ward-based outreach teams (WBOTs) is one of the key interventions of the South African National Department of Health's (NDoH) Primary Health Care re-engineering (rPHC) strategy for improving health outcomes (Pillay, 2010). However, a finding of this study was that aligning NGO activities to government health ward-based outreach teams, is difficult. There is similar evidence in the literature, where a study by Austin-Evelyn et al (2018) reports the lack of alignment between services provided by government-employed and NGO-funded CHWs operating at the same level of care, i.e. ward-based outreach teams where government-employed CHWs felt that they were competing with CHWs funded by more vertical disease-specific projects run by NGOs (Austin-Evelyn et al, 2018).

Another challenge for alignment found in this study is the lack of knowledge of MDR-TB among the PHC clinic supervisors. This was similar to findings in the Eastern Cape Province, where the knowledge levels of nurses on MDR-TB working at TB units in PHC facilities were assessed and it was found that less than 40 % of PHC nurses had been trained on MDR-TB in comparison to 91 % who had received training on HIV/AIDS (Singh & Janse van Rensburg, 2014). The authors also found that the study participants' rating of their knowledge to manage patients with MDR-TB showed that 59 % felt that they lacked knowledge in providing MDR-TB treatment, while 79 % felt that they did not have enough knowledge to monitor side effects of treatment. Moreover, in India, an assessment of the knowledge of TB among four hundred nurses found that the knowledge of treatment of MDR-TB (63 %) was lower than knowledge on drug susceptible TB (73 %) (Kansal et al, 2014).

This research found that if HIV-positive patients are not retained in care it is perceived to affect the TB caseloads. This is supported in the literature where it has been shown that reduced immunity due to HIV infection puts patients at higher risk of developing opportunistic infections such as TB than patients who are HIV-negative (Carlsson et al, 2014). In Nigeria, the incidence and predictors of tuberculosis among HIV-infected adults showed that sub-optimal ART adherence led to a higher incidence of TB (Pathmanathan et al, 2017). In South Africa, the lack of HIV viral suppression (viral load 10,000 copies per ml) was associated with a 2.5-fold increased adjusted hazard of TB (Van Rie et al, 2011).

In addition, in terms of treatment outcomes, a lack of alignment of TB and HIV programmes could result in HIV patients not being retained on ART, leading to an increased mortality from MDR-TB. A study assessing risk factors for mortality among MDR-TB patients in the Eastern Cape Province found that HIV co-infected patients who don't receive ART, are at significantly higher risks of mortality (adjusted incidence risk ratio 3.3, 95 % confidence interval 2.9-3.8) (Chingonzoh et al, 2018). Similar findings were observed in a study by Nglazi et al (2015), where it was found that if not properly managed and retained in care, HIV-positive TB patients are a challenge to TB services since they may have poorer TB treatment outcomes.

This study found that there was a lack of communication between reporting structures at the different levels of care. Firstly, TB is a data-driven programme, and that the need to ensure integrity and validity of data starts at facility level. However, the data entry point for MDR-TB is at the decentralised site, resulting in many incomplete fields when the data capturer attempts to enter the relevant data. This is mainly due to the fact that the electronic drug-resistant tuberculosis register (EDRWeb) is not available at PHC level but only at the decentralised sites, which impacts on the data quality that is communicated between PHC-level and decentralised-level in the same district. Data management challenges in TB have been highlighted in the literature and include challenges with tracking of patients who have transferred to another district or sub-district (Churchyard et al, 2014).

Further evidence shows that there is a lack of communication and integration of data between different programmes at the same operational level (Page-Shipp et al, 2012).

However, there are ongoing efforts by the National Department of Health to integrate data systems at primary health care level, with the ideal of a fully integrated data management system adopting the approach of one patient, one appointment, one file, and one data management system (Naidoo et al, 2017). Page-Shipp et al (2012) argues that the gaps that have been observed with regard to data completeness at the same level of care, in this case lack of ART documentation in the TB register or on the TB treatment card. This indicates that incomplete ART data will be recorded in the TB data recording systems, resulting in poor data completeness and quality when reported to the next level.

In terms of patient-related factors, this study found that stigma experienced by the patient both in the home and in the public health facility was a key factor influencing the successful completion of MDR-TB treatment. With regard to stigma within the home and community, this study found that once the patient has been diagnosed with MDR-TB, it is difficult to discharge the patient back into the community due to resistance from the family in accepting the patient back home. This finding was similar to a study in Malawi, where stigma and discrimination was experienced by the patient in the community (Nyasulu et al, 2018). However, evidence in the literature has shown that the stigma was due to the association of HIV with TB, rather than due to TB itself (Nyasulu et al, 2018). Furthermore, a study within the Eastern Cape Province in South Africa found that the stigma associated with TB in the past was due to the perception that it was an incurable disease, but that it lost its stigma in the community when the message of TB being a curable disease was acknowledged (Moller & Erstad, 2012).

A study in Uganda demonstrated that home-based care rather than a hospital-based approach was preferable, and that community members were positive about patients being treated in the community (Horter et al, 2014). There were no reports of stigma due to MDR-TB itself, and no respondents expressed a fear of MDR-TB transmission to themselves or others due to patients being treated at home or in the community (Horter et al, 2014).

In summary, there is a mismatch in roles and responsibilities in terms of alignment to those described in the MDR-TB Decentralisation Policy (2011). Challenges in providing a holistic approach to integrated care within a specialist vertical programme were reported. The staff appears to have poor morale as a consequence of heavy workload. In

addition, aligning NGO activities to government health, ward-based outreach teams were found to be difficult. Another challenge in terms of alignment found in this study is the lack of knowledge of MDR-TB among the PHC clinic supervisors. This research found that if HIV positive patients are not retained in care, it is perceived to affect the TB caseloads. Regarding communication between different levels of care, there was a lack of communication between reporting structures. With regard to patient-related factors, stigma in the home and community was an issue and once the patient has been diagnosed with MDR-TB, it is difficult to discharge the patient back into the community.



6. CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusion

The aim of the study was to explore and describe the factors influencing the roles and responsibilities in the decentralisation of MDR-TB services in decentralised MDR-TB sites from a management perspective. The study found when comparing the actual and ascribed roles and responsibilities of facility level decentralised site management teams (DSMTs) that firstly, there is task shifting with the site staff taking on additional responsibilities to those defined in the MDR-TB decentralisation policy (2011). The additional responsibility can be ascribed to the fact that the decentralised site has not acquired the compliment of staff required to support a multi-disciplinary approach, both within the site and the district. Secondly, staff shortages and poor staff morale were experienced which led to the perception of overloaded with responsibilities and were found to be significant factors hindering the implementation of service delivery. Thirdly, the lack of knowledge of MDR-TB amongst PHC supervisors influenced the roles and responsibilities of the staff at the decentralised MDR-TB sites, whereby they were required to take on the additional role of mentoring of PHC nurses.

Finally, providing a holistic approach to integrated care within a specialist vertical programme was found to be very challenging, hindering implementation of decentralisation. The lack of alignment of NGO support with governmental services was identified as one of the key hindering factors. In addition, a lack of integration of TB and HIV, specifically the challenge of retention of HIV positive patients on ART, influenced the TB caseload. Furthermore, lack of access to EDRWeb at PHC clinics makes communication of data from PHC level to decentralised sites a challenge.

6.2 Recommendations

Based on the findings of this study, the following recommendations are made:

- Eastern Cape Department of Health should decentralise Human Resources to district level in order to improve staff recruitment for vacant posts and retention strategies.

- Inter-sectoral platforms should be strengthened to ensure that NGO support is aligned to the needs of the programme and providing services along the continuum of care, rather than focusing on specific interventions that only speak to certain aspects of care.
- The Provincial Department of Health should focus on strengthening of TB and HIV integration at all points of care by strengthening rPHC rather than a vertical approach.
- Retention on ART of HIV positive patients should be a key area to focus.
- The National Department of Health's Research, Implementation, Monitoring and Evaluation Division should ensure that communication of data should be available through inter-operable systems between PHC clinics and decentralised sites.
- The district should provide training and mentoring for PHC nurses and supervisors on MDR-TB in addition to drug susceptible TB and HIV. This training should include the basics of MDR-TB, allowing the decentralised sites to discharge uncomplicated MDR-TB patients to PHC clinics.
- Community mobilisation led by community-based organisations should focus on stigma reduction training rather than focusing only on training on TB/ HIV for patient families and the community.

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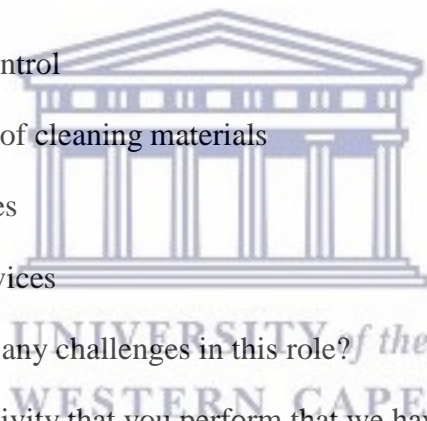
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Appendix 1: Interview Guide Chief Executive Officer

- What is your job title?
- How long have you been working in this position?
- What is your tertiary qualification?
- Have you received any additional formal or informal training?
- Can you please describe the role you perform in the hospital?
- What is different from the way you performed your responsibilities before?
- What are your key areas of responsibilities?
 - a. In terms of: ensuring effective financial accountability – describe your role in effective monitoring of expenditure. How often are finance meetings held? Describe the process of submission of financial reports. Do you keep a commitment and accrual register? How do you monitor that suppliers are paid within thirty days of receiving an invoice? With regard to your role in ensuring financial accountability, do you experience any challenges?
 - b. Effective implementation of the strategy primary health care (PHC) restructuring? How do you facilitate the implementation of PHC restructuring with regard to improving reporting on the following:
 - i. supervision
 - ii. ward based teams
 - iii. district clinical specialists
 - iv. school health
 - e. How are outreach programs used to ensure integration of service delivery in the sub district and what is your role in this activity? Do you experience any challenges in ensuring effective implementation of PHC restructuring?
 - f. Effective evaluation and capacitation of all staff – describe the process of evaluation of all staff and your role in this process. How do you ensure capacitation of hospital staff in team building, managerial skills and change management in order to improve hospital service delivery and management? Do

you experience any challenges in this role?

- g. Improving and strengthening planning through integrated alignment of district health plans with Annual Performance Plans and Operational Plans – describe your role in ensuring that plans are aligned. How is implementation of work plans monitored? How regularly is it monitored? Do you experience challenges in this activity?
 - h. Ensuring that effective employment practices are in place that enable adequate and timeous Human Resource coverage – describe this process and your role in this.
 - i. To ensure provision of an effective, acceptable, accessible, qualitative legal health service relevant to specialised TB hospital care – what is your role in ensuring a core package as per National and Provincial Policies and legislation including the following:
 - i. infection control
 - ii. availability of cleaning materials
 - iii. food services
 - iv. laundry services
 - j. Do you experience any challenges in this role?
 - k. Is there any key activity that you perform that we have not mentioned? Please describe.
- What is your management role specifically? Do you have any subordinates? How many?
 - Can you describe your role in decision-making regarding MDR-TB health services? Are you satisfied with your role? Do you feel that this role allows you to perform the responsibilities you have been given?
 - Do you experience any other challenges that have not been mentioned before?
 - Now that we spoke about what is challenging, tell me what is working and what is working well?



Appendix 2: Interview Guide Nursing Services Manager

- What is your job title?
- How long have you been working in this position?
- What is your tertiary qualification?
- Have you received any additional formal or informal training?
- Can you please describe the role you perform in the hospital?
- What is different from the way you performed your responsibilities before?
- What are your key areas of responsibilities?
 - a. In terms of: ensuring linkages with other stakeholders that provide services to the decentralised MDR-TB site specifically relating to patient management and care – what helps you or prevent you from being able to ensure that linkages take place? What are the difficulties in establishing and maintaining these linkages?
 - b. Tracing of newly diagnosed MDR-TB patients – Describe the process in terms of who it involves and the role you perform in it? Do you experience any challenges with tracing patients? Do you experience any challenges in coordinating activities of tracing team and monitoring their activities? How do you monitor the team's tracing activities? How often do you monitor?
 - c. Organising monthly clinical reviews of MDR-TB patients on treatment – Does the review happen on monthly basis? Who attends these reviews? Do you have the information at the meeting to discuss? What is the quality of the information?
 - d. How do you ensure recording and reporting procedures are up to date? Who records the information and where? What is your role in the process?
 - e. Do you experience any challenges with mobilising the mobile injection teams to ensure that injections are given to outpatients timeously? What have you done to address these challenges?
 - f. Is there any key activity that you perform that we have not mentioned? Please describe.

- What is your management role specifically? Do you have any subordinates? How many?
- Can you describe your role in decision-making regarding MDR-TB health services? Are you satisfied with your role? Do you feel that this role allows you to perform the responsibilities you have been given?
- Do you experience any other challenges that have not been mentioned before?
- Now that we spoke about what is challenging, tell me what is working and what is working well?

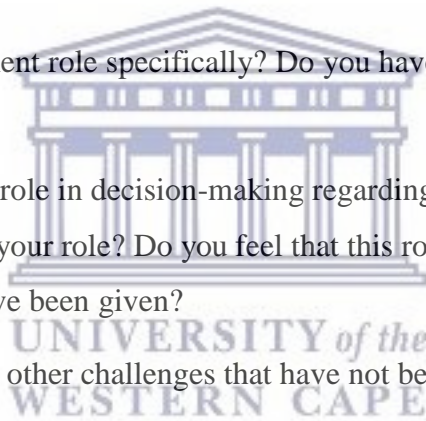


Appendix 3: Interview Guide Clinical Manager

What is your job title?

- How long have you been working in this position?
- What is your tertiary qualification?
- Have you received any additional formal or informal training?
- Can you please describe the role you perform in the hospital?
- What is different from the way you performed your responsibilities before?
- What are your key areas of responsibilities?
 - a. In terms of ensuring that the clinical team assesses patients for co-morbidities and that appropriate baseline tests are requested – describe the process of who this involves and your role in it.
 - i. Do you experience any challenges in coordinating this activity?
 - ii. How do you monitor the clinical team’s activities in carrying out this function?
 - b. Ensuring patient clinical management is monitored - describe the process in terms of who it involves and the role you perform in it. Do you experience any challenges with coordinating this function?
 - i. How do you monitor the clinical team’s patient clinical management activities?
 - ii. Do you experience any challenges in monitoring this function?
 - iii. How often do you monitor?
 - c. Ensuring that adverse drug reactions are monitored, reported and managed appropriately – describe the process in terms of who it involves and the role you perform in it.
 - i. Do you experience any challenges with coordinating this function?
 - d. How do you monitor the clinical team’s patient clinical management activities?

- i. Do you experience any challenges in monitoring this function?
 - ii. How often do you monitor?
- e. Ensuring that patients at the decentralised MDR-TB site that are identified as requiring specialist care are up-referred – describe the process in terms of who is involved at the different levels of care and define your role in this referral process.
- i. Do you experience any challenges in coordinating this function?
 - ii. Do you have meetings with the different stakeholders regarding referral pathways?
 - iii. How often do these meetings take place?
- f. Is there any key activity that you perform that we have not mentioned? Please describe
- What is your management role specifically? Do you have any subordinates? How many?
 - Can you describe your role in decision-making regarding MDR-TB health services? Are you satisfied with your role? Do you feel that this role allows you to perform the responsibilities you have been given?
 - Do you experience any other challenges that have not been mentioned before?
 - Now that we spoke about what is challenging, tell me what is working and what is working well?



Appendix 4 : Interview Guide DR-TB Focal Nurse

- What is your job title?
- How long have you been working in this position?
- What is your tertiary qualification?
- Have you received any additional formal or informal training?
- Can you please describe the role you perform in the hospital?
- What is different from the way you performed your responsibilities before?
- What are your key areas of responsibilities?
 - a. In terms of: coordinating clinical care with other health professionals, including counsellors and pharmacist - describe the process in terms of who it involves and the role you perform in it.
 - i. Do you experience any challenges with this role?
 - ii. How do you monitor the coordination of clinical care with other health professionals?
 - iii. How often do you monitor?
 - b. Ensuring patients are referred to the doctor where necessary – describe the referral pathways and the role you perform in it.
 - i. Do you experience any challenges with this role?
 - ii. How do you monitor patient referrals?
 - c. Coordination of household assessments, discharge of patient and linkages to outpatient services - describe the process in terms of what it involves and the role you perform in it?
 - i. How are NGO/Community-based Organisations (CBO) linkages coordinated?
 - ii. Do you experience any challenges with this role?
 - d. Management of the outpatient clinic activities – describe the process in terms of what it involves and the role you perform in it?

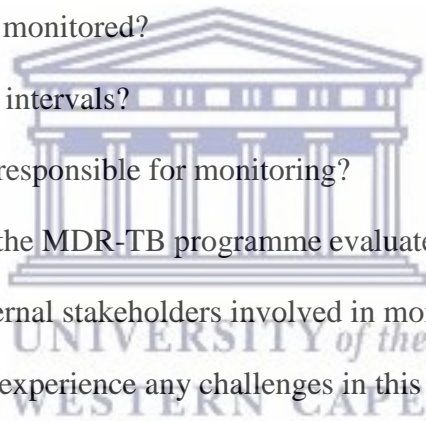
- i. Do you experience any challenges with this role?
 - e. Overseeing educational talks for patients and relatives – describe the process in terms of what it involves and the role you perform in it
 - i. Do you experience any challenges with this role?
 - f. Is there any key activity that you perform that we have not mentioned? Please describe.
- What is your management role specifically? Do you have any subordinates? How many?
 - Can you describe your role in decision-making regarding MDR-TB health services? Are you satisfied with your role? Do you feel that this role allows you to perform the responsibilities you have been given?
 - Do you experience any other challenges that have not been mentioned before?
 - Now that we spoke about what is challenging, tell me what is working and what is working well?



Appendix 5: Interview Guide District Manager (HIV & AIDS, STI and TB (HAST) Manager or district TB/sub-district TB coordinator)

- What is your job title?
- How long have you been working in this position?
- What is your tertiary qualification?
- Have you received any additional formal or informal training?
- Can you please describe the role you perform in the hospital?
- What is different from the way you performed your responsibilities before?
- What are your key areas of responsibilities?
 - a. In terms of: ensuring that all confirmed MDR-TB patients are referred to the MDR-TB hospital - describe the process in terms of what it involves and the role you perform in it.
 - i. Do you experience any challenges in tracing MDR-TB patients?
 - ii. How do you ensure that all newly-diagnosed MDR-TB patients are traced and linked to care?
 - iii. How do you monitor this process?
 - b. Ensure availability of drugs for the patient at the clinic or district hospital – describe the process in terms of what it involves and the role you perform it.
 - i. Do you experience any challenges in supply chain management?
 - ii. How do you monitor drug stock outs?
 - c. Establish an efficient patient retrieval system for patients who default MDR-TB treatment.
 - i. Who records the information and where?
 - ii. What is your role in the process?
 - d. Arrange transportation for patient evaluation and follow-up at the MDR-TB site – describe the process and the role you perform in it. Do you experience any challenges?
 - i. How frequently are patients evaluated at the MDR-TB site?

- ii. How do you monitor attendance of patients for evaluation and follow ups?
- e. Appoint disease outbreak teams to conduct contact screening programmes for all close contacts of confirmed MDR-TB patients six monthly for two years – describe the process in terms of what it involves and the role you perform in it.
 - i. Do you experience any challenges?
 - ii. How do you ensure that recording and reporting by the teams is fed back to the district?
- f. Conduct household assessments prior to discharging patients from MDR-TB units - describe the process in terms of what it involves and the role you perform in it.
- g. Monitor and evaluate MDR-TB programme performance – How is the MDR-TB programme monitored?
 - i. At what intervals?
 - ii. Who is responsible for monitoring?
 - iii. How is the MDR-TB programme evaluated?
 - iv. Are external stakeholders involved in monitoring and evaluation?
 - v. Do you experience any challenges in this role?
- h. Ensure continuum of care for patients post discharge - describe the process in terms of what it involves and the role you perform in it.
- i. Ensure ongoing psychosocial support for patients – describe the linkages that are available with other stakeholders including social services.
 - i. Do you have regular meetings to discuss psycho-social support?
 - ii. How often do you meet and who attends these meetings?
- j. Increase awareness and education about MDR-TB among communities – describe the linkages that are available with other stakeholders such as community mobilisation, education and clinic committees.
 - i. Do you have regular meetings to discuss community mobilisation?
 - ii. If so, how often and who attends these meetings?



k. Is there any key activity that you perform that we have not mentioned? Please describe

- What is your management role specifically? Do you have any subordinates? How many?
- Can you describe your role in decision-making regarding MDR-TB health services? Are you satisfied with your role? Do you feel that this role allows you to perform the responsibilities you have been given?
- Do you experience any other challenges that have not been mentioned before?
- Now that we spoke about what is challenging, tell me what is working and what is working well



Appendix 6: Comparison between actual and ascribed roles of staff at decentralised MDR TB sites

Staff category	Actual role	Ascribed role	Comparison
CEO	<p>Resource management (including human resource, material and financial) for implementation of those policies, not only the decentralisation policy but also infection control and national core standards policies.</p> <p>Oversight of the various multi-disciplinary team committees within the site.</p> <p>Reporting of monthly expenditure to Budget Advisory Committee Meeting.</p> <p>Management stakeholder communication</p>	<p>Develop appropriate strategic and operational plans and budgets.</p> <p>Provide oversight of the highest quality clinical and non-clinical services.</p> <p>Ensure regular collection, evaluation and reporting of high-quality data on services provided.</p> <p>Manage staff and budget.</p> <p>Liaise with cluster managers, hospital boards and community groups as well as</p>	<p>In general, there is a similarity in the actual and ascribed roles of the CEO as described in the findings.</p> <p>However, findings from the actual role suggest that in addition to the decentralisation policy, there are other policies including infection control and national core standards policies that are not mentioned in the ascribed role. Whilst there is some overlap of these policies with the decentralisation policy, additional responsibilities are expected with additional policies to be adhered to.</p>

	<p>including district/ provincial and public engagement through the hospital board.</p>	<p>other district hospitals.</p>	
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	Provision of oversight of linkage within district and outreach programmes to ensure integration of service delivery at primary health care level.		
Clinical Manager	<p>Oversight and coordination of the clinical component of staff, including doctors, pharmacists, social workers, radiographers, occupational therapists and audiologists.</p> <p>Ensuring quality of clinical care through adherence to guidelines with regard to treatment regimens, regular monitoring (laboratory) and side effect management.</p> <p>Oversight of pharmacovigilance. Management of clinical services budget.</p>	<p>Assess patient for co-morbidities and request baseline tests.</p> <p>Initiate DR-TB treatment.</p> <p>Monitor patient clinically and adjust treatment where necessary.</p> <p>Report adverse drug reactions to Medicines Control Council.</p> <p>Provide prompt referral for tertiary or specialist care where necessary.</p>	<p>The actual and ascribed roles are similar. In addition to oversight of clinical services, the actual role of the Clinical Manager includes management of the clinical budget not mentioned in the ascribed role.</p> <p>Findings also suggest that the Clinical Manager is expected to sit on various non-clinical committees including skills development, complaints and accommodation committees. Participation on these committees is not mentioned under ascribed roles.</p>


Ensure regular monitoring through laboratory testing is done timeously.



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	Non-clinical responsibilities include role within various committees, including skills development, complaints and accommodation committees.	Educate nurses and other members of team.	
Nursing Services Manager	<p>Providing supervisory role from diagnosis, admission, monitoring of the patient and show that the correct treatment is given according to the regimen and that regular monitoring is performed.</p> <p>Ensuring monthly follow up of patient.</p> <p>Ensuring those patients on injectable phase of treatment have the necessary audiometry testing to exclude drug-induced hearing loss.</p>	<p>Liaise with mobile teams and staff at facilities administering DR-TB treatment.</p> <p>Ensure recording and reporting procedures are up to date.</p> <p>Liaise with other stakeholders in the geographical area.</p> <p>Organise and document six-monthly contact screening.</p>	In addition to the ascribed role, the actual role of the Nursing Services Manger includes ensuring those patients on injectable phase of treatment have the necessary audiometry testing to exclude drug-induced hearing loss.

	<p>Supervision of nursing staff in monitoring of all adverse events and ensuring adequate intervention through</p>	<p>Trace newly-diagnosed DR-TB patients and facilitate linkage to care and admission if necessary.</p>	
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The logo of the University of the Western Cape, featuring a classical building facade with six columns and a pediment, with the text 'UNIVERSITY of the WESTERN CAPE' below it.

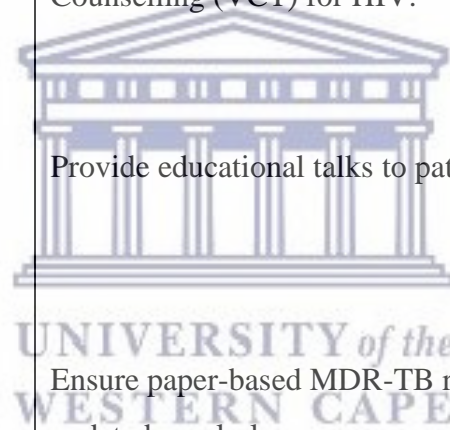
	<p>communication with the clinicians as well as the multi-disciplinary team including audiology, clinician, social worker.</p> <p>Facilitating stakeholder engagement, including NGO support, in order for patients to receive the necessary support in completing treatment once discharged into the community.</p>	<p>Arrange regular monthly visits for outpatients at decentralised sites.</p> <p>Coordinate and monitor tracing team activities.</p>	
<p>Focal DR-TB Nurse</p>	<p>Providing support as outreach nurse, doing reviews at the clinics in the catchment area for that specific decentralised site.</p> <p>Providing mentoring on DR-TB management for primary health care nurses.</p>	<p>Monitor inpatients and refer to doctor where necessary.</p> <p>Coordinate household assessment, discharge and linkage to outpatient services.</p> <p>Manage weekly outpatient clinic.</p>	<p>In addition to the ascribed roles of the Focal DR TB nurse, findings suggested that the Focal DR TB nurse is expected to provide mentoring on DR-TB management for primary health care nurses. This additional activity, as previously discussed, should fall under the responsibility of the district and not the decentralised MDR TB site.</p>

	<p>Liaising with the pharmacists and ensure that the patient understands the</p>	<p>Support nursing staff.</p>	
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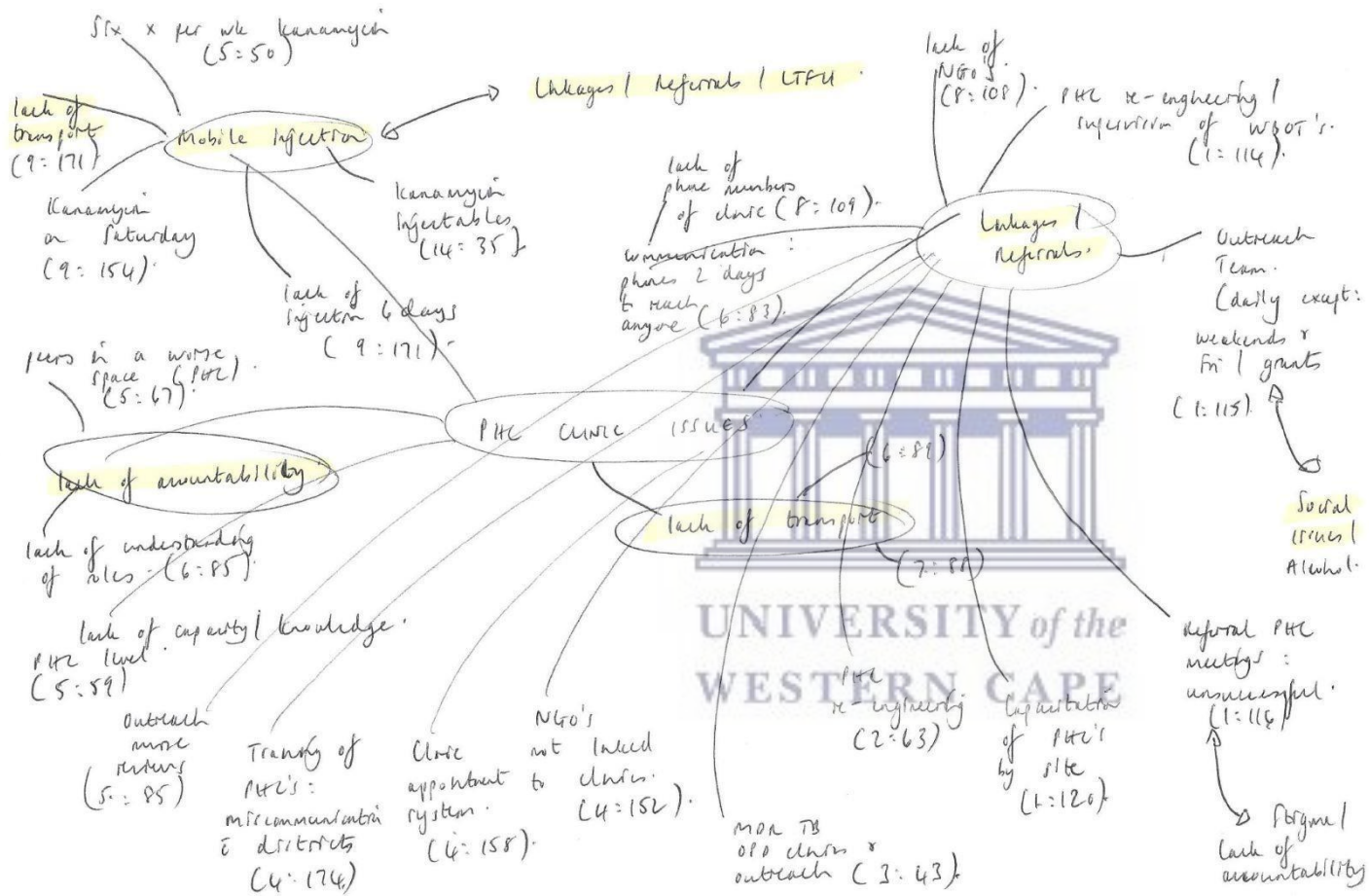
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	<p>medication and side effects, and that side effects are managed and reported.</p> <p>Participating in home visits to the newly diagnosed TB patients' homes to assess social issues and infection control and establishing a support system for discharge.</p> <p>Doing home visits to patients who are interrupting treatment and provide counselling.</p> <p>To educate and screen family members.</p> <p>To provide the linkage for clinical support</p>	<p>Monitor electronic Drug Resistant TB register (EDRWeb) and compile six-month reports.</p> <p>Provide Voluntary Testing and Counselling (VCT) for HIV.</p> <p>Provide educational talks to patients.</p> <p>Ensure paper-based MDR-TB register is updated regularly.</p> <p>Ensure patients who miss appointments are followed up by tracing team.</p>	<p>With regard to HIV services, the role of the Focal DR TB nurse is not only to ensure VCT (ascribed role) but also ensure linkage for clinical support of the HIV programme in order to ensure continuity of care (actual role).</p>
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	<p>of the HIV programme.</p> <p>To ensure timeous updating of records of both the patient folders and the registers.</p>	<p>Liaise with mobile teams with regard to patient management.</p>	
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Appendix 7: Thematic Coding Analysis Extract