

**EXPERIENCES OF THE MOBILE INJECTION TEAM FOR MULTI DRUG
RESISTANT-TUBERCULOSIS PATIENTS IN UGU DISTRICT, KWAZULU-NATAL**

by

SITHA DEVI ARJUN

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SUPERVISOR: PROF BL DOLAMO

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Student number: 3397-332-6

DECLARATION

I declare that **EXPERIENCES OF THE MOBILE INJECTION TEAM FOR MULTI DRUG RESISTANT-TUBERCULOSIS PATIENTS IN UGU DISTRICT, KWAZULU-NATAL** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references and that this work has not been submitted before for any other degree at any other institution.



SITHA DEVI ARJUN

10 February 2016

DATE

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STUDENT NUMBER: 3397-332-6
STUDENT: SITHA DEVI ARJUN
DEGREE: DOCTOR OF LITERATURE AND PHILOSOPHY
DEPARTMENT: HEALTH STUDIES, UNIVERSITY OF SOUTH AFRICA
SUPERVISOR: PROF BL DOLAMO

ABSTRACT

The purpose of the study was to investigate and describe the experiences of a mobile injection team for multi drug resistant-tuberculosis outpatients, and to design and recommend a mobile injection team guideline based on the experiences of the team members in Ugu District, KwaZulu-Natal and to indicate the support that the MIT require. Phenomenological research was conducted. Convenient census sampling was used as all the seven members of the Ugu District mobile injection team were included. The inclusion criteria was at least six months' working experience with MDR-TB patients in a mobile injection team at Ugu District, be an enrolled nurse registered with the South African Nursing Council as an enrolled nurse and must have an annual practicing certificate, or be a TB assistant, be willing to participate in the study and be located at the decentralised and satellite site. Data were collected through individual in-depth interviews with the participants. Data were analysed using Giorgi's method of data analysis. The research findings revealed four broad themes (the perceptions held by the team, challenges, available support and needs to promote the service) and 73 sub-themes. The findings of the study indicate that the MDR-TB outreach injection teams experience many challenges in the community and need to be supported by their management in order to provide quality care to the patients. This study contributes to the development of guidelines to assist the mobile injection teams to provide quality patient care and effective service delivery. Based on the findings, the recommendation is that an intervention study be performed to compare the utilisation of the mobile MDR-TB injection team after implementing the recommendations made and the guidelines developed in this study.

KEY CONCEPTS: Experiences; enrolled nurse; multi drug resistant-tuberculosis; mobile injection team; TB Assistant; rural outpatients; drug resistant patients; tuberculosis management.

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Dedication

To the MDR-TB outreach injection teams: your dedication and perseverance shine through.

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LIST OF ACRONYMS/ABBREVIATIONS USED IN THE STUDY

CHW	Community health care worker
DHIS	District Health Information System
DOTS	Directly observed treatment, short course
DR-TB	Drug resistant-tuberculosis
DST	Drug sensitivity testing
EMS	Emergency medical services
EN	Enrolled nurse
HAART	Highly active antiretroviral treatment
HB	Haemoglobin
HIV	Human Immunodeficiency Virus
KZN	KwaZulu-Natal
MDR-TB	Multi drug resistant-tuberculosis
MIT	Mobile injection team
NGO	Non-governmental organisation
PHC	Primary health care
PPE	Personal protective equipment
SASSA	South African Social Security Agency
TB	Tuberculosis
TBA	TB assistant
Unisa	University of South Africa
WHO	World Health Organization
XDR-TB	Extreme drug resistant-tuberculosis

CHAPTER 1

ORIENTATION TO THE STUDY

1.1 INTRODUCTION

Tuberculosis (TB) is curable, as demonstrated by numerous controlled trials that have shown that a six-month regimen of rifampicin and isoniazid, supplemented by pyrazinamide and streptomycin or ethambutol for the first two months, will provide a cure in more than 95% of cases if the medication is taken correctly (Ormerod 2005:19). If medication is not taken correctly, drug resistant TB (DR-TB) can develop. Primary drug resistance is resistance to one of the first-line anti-TB agents in people who have not had previous TB treatment. Secondary or acquired drug resistance is resistance to one or more anti-TB agents in patients undergoing therapy (Smeltzer, Bare, Hinkle & Cheever 2008:647). Multi drug resistant-tuberculosis (MDR-TB) is defined by the World Health Organization (WHO) as TB caused by *Mycobacterium tuberculosis* resistant in vitro to the effects of isoniazid and rifampicin (WHO 2008a:xi). MDR-TB is a laboratory diagnosis; it can only be diagnosed by means of a TB culture and susceptibility testing (Department of Health (DoH) 2004:67).

Workplace hazards for nurses include close contact with MDR-TB patients and inadequate ventilation during consultation with patients, which increase the risk of a nurse contracting MDR-TB. Nurses have for the most part accepted the inherent risk that comes with their practice, and MDR-TB has increased health care workers' awareness of workplace hazards. Hazards can be prevented by keeping home visits or clinical evaluations brief; by conducting these evaluations outdoors or in a well-ventilated room with as much distance as possible from the patient; by educating the patient on cough hygiene; by avoiding close contact; by providing the patient with a surgical mask when close contact is required; and by collecting sputum samples outdoors (WHO 2011:20).

In recent years a new philosophy on the part of health care workers has seen a high value being placed on their own physical and psychological wellbeing (Joel 2006:605). The WHO guidelines for the programmatic management of DR-TB represent the best

current knowledge in the management of mono and poly drug resistant TB, MDR-TB and XDR-TB. Mono drug resistance is defined as resistance to a single first-line anti-TB drug, and poly drug resistance is resistance to two or more anti-TB drugs other than both rifampicin and isoniazid. These guidelines offer options for tailoring diagnosis and care to the various epidemiological and programmatic conditions worldwide (WHO 2008a:20). The WHO guidelines are utilised and applied at the hospitals under discussion.

Primary, secondary and tertiary levels of preventative care are used by nurses in community-based practice. The focus of primary prevention is on health promotion and prevention of illness or disease, and involves interventions such as teaching community members about healthy lifestyles and forming mobile teams to go out to the people in the community. Secondary prevention focuses on health maintenance and is aimed at early detection and prompt intervention to prevent or minimise loss of function and independence. It includes interventions such as health screening and health-risk appraisal of patients. Tertiary prevention focuses on minimising deterioration and improving quality of life, including rehabilitation to assist patients in achieving their maximum potential by working through their physical or psychological challenges (Smeltzer et al 2008:16).

Worldwide, 9.6 million people are estimated to have fallen ill with TB in 2014: 5.4 million men, 3.2 million women and 1.0 million children (WHO 2015: 12). Globally, 12% of the 9.6 million new TB cases in 2014 were HIV-positive. In 2014, 6 million new cases of TB were reported to WHO, fewer than two-thirds (63%) of the 9.6 million people estimated to have fallen sick with the disease. This means that worldwide, 37% of new cases went undiagnosed or were not reported. The quality of care for people in the latter category is unknown. Of the 480 000 cases of multi drug resistant-TB (MDR-TB) estimated to have occurred in 2014, only about a quarter of these – 123 000 – were detected and reported. Although the number of HIV-positive TB patients on antiretroviral therapy (ART) improved in 2014 to 392 000 people (equivalent to 77% of notified TB patients known to be co-infected with HIV), this number was only one third of the estimated 1.2 million people living with HIV who developed TB in 2014. All HIV-positive TB cases are eligible for ART.

Globally, an estimated 3.3% of new TB cases and 20% of previously treated cases have MDR-TB, a level that has changed little in recent years (WHO 2015:13). In 2014, an estimated 190 000 people died of MDR-TB. More TB patients were tested for drug resistance in 2014 than ever before. Worldwide, 58% of previously treated patients and 12% of new cases were tested, up from 17% and 8.5% respectively in 2013. This improvement is partly due to the adoption of rapid molecular tests. If all of the TB cases notified in 2014 had been tested for drug resistance, an estimated 300 000 would have been found to have MDR-TB, with more than half of them (54%) occurring in India, China and the Russian Federation.

The number of cases detected (123 000) worldwide represented just 41% of this global estimate, and only 26% of the 480 000 incident cases of MDR-TB estimated to have occurred in 2014 (WHO 2015:13). Detection gaps were worst in the Western Pacific Region, where the number of cases detected was only 19% of the number of notified cases estimated to have MDR-TB (the figure for China was 11%). A total of 111 000 people started MDR-TB treatment in 2014, an increase of 14% compared with 2013. The ratio of patients enrolled in treatment to patients newly notified as having MDR-TB or rifampicin resistant TB was 90% globally. The ratio was above 90% in 15 of the 27 high MDR-TB burden countries as well as in the European Region and the Region of the Americas. Globally, only 50% of MDR-TB patients were successfully treated. However, the 2015 treatment success target of $\geq 75\%$ for MDR-TB patients was reached by 43 of the 127 countries and territories that reported outcomes for the 2012 cohort, including three high MDR-TB burden countries (Estonia, Ethiopia and Myanmar).

Globally in 2014, 123 000 patients with MDR-TB or rifampicin resistant tuberculosis (RR-TB) were notified, of whom about 75% lived in the European Region, India, South Africa or China (WHO 2015:65). This was equivalent to 41% of the 300 000 notified TB patients who were estimated to have MDR-TB in 2014. The number of notified MDR/RR-TB cases in 2014 was almost the same as in 2013. A total of 111 000 people were started on MDR-TB treatment in 2014, an increase of 14% compared with 2013. The ratio of enrolled to notified MDR -TB cases was 90% globally, and $>90\%$ in 15 high MDR-TB burden countries as well as the European Region and the Region of Americas. The ratio was $<60\%$ in 3 high MDR-TB burden countries: China (49%), Myanmar (44%) and Nigeria (53%). The 2015 treatment success target of $\geq 75\%$ for MDR-TB patients was reached by 43 of the 127 countries and territories that reported outcomes for the

2012 cohort. Only three high MDR-TB burden countries (Estonia, Ethiopia, and Myanmar) achieved a treatment success rate of $\geq 75\%$. Globally, only 50% of patients on MDR-TB treatment were successfully treated, largely due to high rates of mortality and loss to follow-up.

Detection of drug resistant-tuberculosis (DR-TB) increases each year in South Africa (SA). Most cases result from airborne transmission of already resistant-TB strains. Epidemic control relies on rapid diagnosis and initiation of effective treatment to reduce the period of infectiousness and ongoing transmission. The rapid diagnostic test, Xpert MTB/RIF, has replaced smear microscopy for routine screening of all cases of presumptive TB in SA (Hughes & Osman 2014:1.)

In 2007, a total of 2 799 cases (28 cases per 100 000 population) of MDR-TB were identified in KwaZulu-Natal. TB prevalence was 1,200 cases per 100 000 population, and MDR accounted for 2.3% of reported cases in the province. XDR TB cases accounted for 9.6% of MDR TB cases (Wallengren, Scano, Nunn, Margot, Buthelezi, Williams, Pym, Samuel, Mirzayev, Nkhoma, Mvusi & Pillay 2011:1914). In 2007, MDR TB in the districts ranged from 10 (uThukela) to 57 (Umkhanyakude) cases per 100 000 population. Incidence of MDR TB was highest for Umkhanyakude and Umzinyathi districts. The proportion of MDR TB cases that were XDR TB cases also varied among districts (1.2%–53.1%). The two districts with the highest level of MDR-TB (Umkhanyakude and Umzinyathi) had the highest and the lowest XDR - TB prevalence, respectively

Of the 1 549 patients prospectively enrolled in the study, 736 were treated at the community-based sites and 813 at the centralised hospital. At the community-based sites significantly more patients were cured (50.7% vs. 34.4%), and significantly fewer patients defaulted (14.5% vs. 28.3%). In addition, more patients achieved a successful treatment outcome (58%) than at the centralised hospital (54%). They concluded that community-based care is more effective than care in a centralised setting, based on similar treatment success rate, lower defaulter rate and shorter time to treatment initiation. Even in the presence of HIV co-infection, community-based care increased treatment success (Loveday, Wallengren, Brust, Roberts, Voce, Margot, Ngozo, Master, Cassell & Padayatchi 2015:163).

In a study by Meressa, Hurtado, Andrews, Diro, Abato, Daniel, Prasad, Prasad, Fekade, Tedla, Yusuf, Tadesse, Tefera, Ashenafi, Desta, Aderaye, Olson, Thim and Goldfeld (2015:5), 79 outpatients were initiated on MDR - TB therapy at home using roving nurses to provide injections and to supervise DOT. Though this group had lower rates of death or treatment failure compared with patients who began treatment as inpatients, these outcomes were influenced by a more favourable baseline clinical status at the onset of treatment, leading to their selection as outpatient candidates for Ethiopia's pilot outpatient programme. They argued that given the individual and public health impact of high loss to follow-up rates, community-based interventions should be considered an essential component of MDR - TB treatment programmes.

1.2 BACKGROUND TO THE RESEARCH PROBLEM

When a patient has been diagnosed with MDR-TB, the minimal recommendation by the WHO is that treatment should last for at least 18 months after culture conversion (WHO 2008a:58). The treatment may be extended to 24 months for patients defined as “chronic cases” with extensive pulmonary damage (WHO 2008a:67). Initially the patient is hospitalised during the intensive first phase of treatment lasting two months, and thereafter the patient is discharged to continue treatment as an outpatient. This is when the mobile injection team (MIT) gets involved.

Four MITs were employed for the first time in December 2011 in the Ugu District of KwaZulu-Natal (KZN). At a meeting held in October 2011, the Ugu District Health Office resolved to employ 22 more teams for the district. Each team consisted of one enrolled nurse (EN) and one TB assistant (TBA) as per the WHO MDR-TB guidelines. The Ugu District Health Office placed two teams at the Ugu District decentralised MDR-TB site and two teams at the satellite site, which is a specialised TB hospital. The researcher has been employed at the satellite site as Assistant Nursing Manager since May 2011. The research study was conducted at both the decentralised and the satellite sites in the respective hospitals.

These teams provide injections to patients at their homes, supervise the intake of oral tablets, and also educate patients' families about infection control. Patients who are unable to access a health facility daily should, for the duration of the injectable phase of their treatment, be visited five times a week at home by an MIT which should consist of

a driver and a nurse. The functions of the mobile team are to provide directly observed treatment short course (DOTS) to all DR-TB patients in the area; to educate patients, their families and their community on TB; to monitor treatment side effects; to refer patients to the nearest health facility when necessary; and to maintain appropriate records (DoH 2011:30).

Patients are referred to the decentralised DR-TB site for the management of more serious side effects. The decentralised site, which may consist of a whole hospital, wards or sections of existing provincial, district or sub district-level hospitals, is responsible for the initiation and management of DR-TB patients within a defined geographical area, initially as inpatients and then as outpatients.

The mobile MDR-TB unit should also be responsible for contact tracing and serve as a link between the decentralised DR-TB site and MDR-TB patients in the community. In some instances the mobile MDR-TB unit also carries out TB programme activities such as tracing patients who default from the programme.

MITs not only inject patients daily but also educate household members on a number of matters, including:

- Ensuring adequate ventilation/open windows.
- Isolating patients and ensuring they have their own bedroom where possible.
- Promoting cough hygiene.
- Ensuring that patients use surgical masks during the day while at home or when meeting with others, that they refrain from close contact with children, and that they maximise time in open-air environments, for example by receiving visitors outdoors.
- Advising all household members and regular contacts to undergo HIV tests, and to minimise contact with known HIV-positive patients.
- Ensuring that household members are screened for TB and DR-TB every six months (WHO 2011:20).

1.3 RESEARCH PROBLEM

Since the initiation of the MIT programme in 2011, when an MDR-TB patient is discharged, the injection team takes the patient home and thereafter visits the patient's home daily to administer injections. The teams based at the hospital have to travel long distances to reach outpatients. Many patients live in rural areas that are inaccessible to vehicles, and at times the teams therefore have to walk to get to patients' homes. The Ugu District Health Office does not provide cellular phones to contact patients telephonically, yet very often the patients are not at home when the team arrives. No research describing the experiences of the MITs has previously been conducted at these hospitals. Therefore, the researcher finds it important to investigate the mobile injection teams' experiences of caring for MDR-TB outpatients.

1.4 PURPOSE OF THE STUDY

The following research purpose and research questions were formulated:

1.4.1 Research purpose

The purpose of this phenomenological research study is to promote the functioning of the MDR-TB mobile injection team by designing and recommending an MIT guideline based on the experiences of the team members.

1.4.2 Research questions

The following research questions were formulated in order to achieve the purpose of the study:

- What are the lived experiences of the MDR-TB mobile injection teams in Ugu District?
- What type of MDR-TB injection team guideline should be recommended?
- What support do the MIT require?

1.4.3 Research objectives

Burns and Grove (2003:86) describe *objectives* as clear, declarative statements expressed in present tense and for clarity focusing on only one or two variables. The objectives formulated to guide the study were to:-

- describe the experiences of the MIT
- gain an understanding of their experiences
- develop a guideline for the MIT
- indicate what support does the MIT require to provide quality nursing care to the patients

1.5 SIGNIFICANCE OF THE STUDY

This study will contribute to the growing literature on nurses' perspectives by focusing on the lived experiences of the mobile MDR-TB teams operating in the Ugu District in KZN. The results of this research will assist in designing a guideline informed by the experiences of the MITs and that will benefit new staff members in particular who will be recruited to provide care to MDR-TB outpatients. The findings of the study will contribute to improved nursing care of MDR-TB outpatients, will assist the ENs and the TBAs with necessary support, and in turn ultimately improve the quality of care for the MDR-TB patients.

1.6 DEFINITIONS OF KEY CONCEPTS

The following key concepts are used frequently in this study.

1.6.1 Experiences

The term "experiences" refers to the emotional sensations one undergoes (*Wordreference.com English Dictionary* 2008). To learn through experience involves practice, involvement, participation, familiarity or observation. To gain experience involves developing skills, knowledge, background, understanding and know-how (*Oxford Mini School Thesaurus* 2007:229). For the purposes of this study, "experiences"

will refer to the Ugu District MITs' practices, involvement, participation, familiarity or observations in the care of MDR-TB outpatients.

1.6.2 Enrolled nurse

An EN is registered with South African Nursing Council as a person who is educated to practise basic nursing care in the manner and to the level as prescribed (Republic of South Africa 2005:25). The scope of practice of an enrolled nurse is to implement a nursing regimen planned and initiated by a registered nurse or registered midwife and carried out under his direct or indirect supervision (SANC Regulations 1991:4). Distinguishing devices are the epaulettes and badges worn by nurses and midwives that indicate the capacity or capacities in which the wearer is registered or enrolled. White epaulette and maroon badge is worn by an EN as prescribed by SANC. For this study, an EN is the nurse in the MIT who administers injections to the patients, observes side effects, and provides advice where necessary.

1.6.3 Multi drug resistant-tuberculosis

MDR-TB is defined as TB caused by *Mycobacterium tuberculosis* resistant in vitro to the effects of isoniazid and rifampicin (WHO 2008a:xi), the two most potent TB drugs. These drugs are used to treat all persons with TB disease.

1.6.4 TB assistant

The TBA is the assistant who accompanies the EN and provides health education to the patients' relatives and the community (DOH 2011:24). In this study the TBA is also the driver.

1.7 THEORETICAL FOUNDATION OF THE STUDY

Theoretical and conceptual frameworks play several interrelated roles in the progress of a science. The overall purpose is to make research findings meaningful and generalisable (George 2011:234). Theories from separate and isolated investigations allow researchers to knit together observations and facts into an orderly scheme. Linking findings into a coherent structure can make the body of accumulated evidence

more accessible and thus more useful. In this study the researcher used Imogene King's systems theory to serve as a guide to evaluate how systems are put together. This is explained in more detail in Chapter 2.

1.8 RESEARCH DESIGN AND METHODS

This study employs a qualitative methodology based on a descriptive phenomenological approach. Phenomenology focuses on the meaning of the lived experiences of humans, and is therefore appropriate for this study (Marshall & Rossman 2006:44). The phenomenological approach was employed for this research because the researcher seeks to learn about the lived experiences of the MDR-TB MITs in Ugu District. Amadeo Giorgi's method of data analysis was used. This is discussed in detail in Chapter 4.

1.9 SCOPE OF THE STUDY

This study was conducted at two hospitals, both the decentralised and the satellite sites in the respective hospitals, in the Ugu District in KZN and focuses on four MITs. Because of its specific geographic focus, the results of this study are not generalisable. However, in a qualitative study generalisability is not intended (Streubert Speziale & Carpenter 2003:39). Ugu Health District is found in the lower South Coast region of KZN. The neighbouring districts are eThekweni and Harry Gwala (previously known as Sisonke) (Figure 1.1). The district provides PHC services to an estimated population of 733 228 people.



Figure 1.1: Map of health districts in KwaZulu-Natal
(<http://www.municipalities.co.za/provinces/view/4/kwazulu-natal>)

1.10 STRUCTURE OF THE THESIS

The structure of the thesis is as follows:

Chapter 1 Orientation to the study

Chapter 2 Theoretical framework

Chapter 3 Literature review

Chapter 4 Research design and methodology

Chapter 5 Analysis, presentation and description of the research findings

Chapter 6 Development of guidelines to enhance the utilisation of MDR-TB mobile injection teams

Chapter 7 Conclusions and recommendations

1.11 CONCLUSION

This chapter has provided an orientation to the study by presenting a statement of the problem, the purpose of the research, the research question, research objectives and the significance of the study, as well as the theoretical foundation, research design and methodology, and scope of the study. The theoretical framework will be discussed in Chapter 2.

CHAPTER 2

THEORETICAL FRAMEWORK

2.1 INTRODUCTION

This chapter describes the theoretical framework used to guide this study. Theoretical assumptions are assumptions concerning knowledge. According to King's systems theory, knowledge is based on personal systems, interpersonal systems and social systems, which are dynamic and which interact, and within which transactions occur (George 2011:234). Nursing involves helping the patient get healthy. In order to do that, it is necessary to set health goals with the patient and then take steps to achieve those goals. When the nurse and patient communicate and work together toward mutually selected goals, the goals are more likely to be attained. King's concepts focus on these methods to help nurses in the nurse-patient relationship therefore King's System theory has been utilised to guide the researcher to evaluate how the individual, interpersonal and social systems are put together to achieve health goals of the MDR-TB patient. The provision of a supportive environment may improve the quality of nursing care.

2.2 EPISTEMOLOGY

Epistemology is the research of philosophy concerned with how individuals determine what is true (Streubert Speziale & Carpenter 2003:362). Mouton (1998:47) states that research done in the epistemological dimension is regarded as the pursuit of valid knowledge (truth). Epistemology is the relationship of researchers to reality and the road that they will follow in the search for truth (De Vos 2002:214). This study explored the "truth" of working in an MIT. The researcher was committed to "search for truth" in the epistemic imperative. A close relationship exists between epistemology, intentionality and ontology. The focus or definition of intentionality forms the basis for epistemology. Intentionality is a way of knowing reality – an epistemology. It carries the meaning of reality (ontology) as we know it. Ontology is essentially part of the process of constituting a life-world (ontology) (Van der Wal 1999:77). Linguistic epistemology refers to the way of knowing reality (truth) through the spoken word (linguistic or lingual), i.e.

using words to describe an experience. The present study required that the MIT describe their experiences of nursing MDR-TB outpatients. Linguistic epistemology made the researcher opt for the open unstructured qualitative interview to investigate the lived experiences of the MIT. This choice was also based on the assumption that what people experience, they experience in terms of language.

Bracketing refers to the process of holding assumptions and presuppositions in suspension to improve the rigour of the research (Holloway 2005:289). This means that Researchers explore their own assumptions and preconceptions in order to set them aside or keep them in suspension, rather than conceal them, so that they do not interfere with the information given by the participants. The bracketing process is crucial throughout the research process, especially during data analysis. Bracketing requires the researcher to remain neutral with respect to belief or disbelief in the existence of the phenomenon (Streubert Speziale & Carpenter 2003:55).

The researcher thus had to first identify any preconceived ideas about the MIT (Streubert Speziale & Carpenter 2003:22). Then the researcher had to suspend any knowledge she might have about the MIT's experiences to prevent this information from interfering with the recovery of a pure description of the phenomenon (experiences of the MIT). This would allow the "truth" to show itself and would determine the trustworthiness of the results.

2.2 KING'S SYSTEM THEORY

Imogene King used a "systems" approach in the development of a dynamic interacting systems framework and in her subsequent theory of goal attainment (George 2011:234). King's general systems framework involves three interacting systems (individual or personal, group or interpersonal, and society or social), and her theory of goal attainment pertains to the importance of interaction, perception, communication, transaction, self, role, stress, growth and development, time, and personal space. King emphasises that both the nurse and the client bring important knowledge and information to the relationship, and that they work together to achieve goals.

2.2.1 King's open systems framework

The three interacting systems that led to King's theory of goal attainment are the personal system (individual), the interpersonal system (nurse-patient interaction), and the social system (the family). Each system involves different concepts (George 2011:234).

2.2.1.1 The personal system

The concepts related to the personal system are perception, self, growth and development, body image, space and time. These are fundamental concepts for understanding human beings because they refer to how a nurse views and integrates herself, based on her personal goals and beliefs. Of all these concepts, the most important is perception, because it influences behaviour. King summarises the connections between these concepts as follows:

“An individual's perception of self, of body image, of time, of space influences the way he or she responds to objects and events in his/her life. As individuals grow and develop through the lifespan, experiences with changes in the structure and function of their bodies over time influence their perceptions of self” (King 1981:19).

Personal systems are constructed by all individuals who are regarded as rational, sentient, social beings. The concepts related to the personal system are described as follows (George 2011:236):

- Perception — a process of organising, interpreting and transforming information from sense data and memory that gives meaning to one's experience, represents one's image of reality, and influences one's behaviour.
- Self — a composite of thoughts and feelings that constitute a person's awareness of their individual existence, i.e. of who and what he or she is.
- Growth and development — cellular, molecular and behavioural changes in human beings that are a function of their genetic endowment, of meaningful and satisfying experiences, and of an environment conducive to helping individuals move towards maturity.

- Body image — a person's perceptions of his or her body.
- Time — the duration between the occurrence of one event and the occurrence of another event.
- Space — the physical area called territory that exists in all directions.
- Learning — gaining knowledge.

In this study the ENs and the TBAs attended to MDR-TB patients in the community. They learned a great deal through their interactions with the patients, which helped them to grow and develop as individuals. The experiences helped them to become more knowledgeable staff, and helped them to assist their clients when faced with diverse situations.

2.2.1.2 The interpersonal system

The concepts associated with the interpersonal system are interaction, communication, transaction, role and stress. King refers to two individuals as dyads, three as triads, and four or more individuals as a small group or large group (King 1981:140). The interpersonal system explains how nurses interrelate with co-workers or patients, and is particularly useful in examining the nurse-patient relationship. For example, communication between the nurse and the patient can be verbal or non-verbal, and collaboration within the nurse-patient dyad is very important for the attainment of the goal.

The concepts related to the interpersonal system are described as follows (George 2011:237-238):

- Interaction — the acts of two or more persons in mutual presence; a sequence of verbal and non-verbal behaviours that are goal directed.
- Communication — the mechanism by means of which human relations are developed and maintained; encompasses intrapersonal, interpersonal, verbal and non-verbal communication.
- Transaction — a process of interaction in which human beings communicate with the environment to achieve goals that are valued; goal-directed human behaviours.

- Role — a set of behaviours expected of a person occupying a position in a social system.
- Stress — a dynamic state whereby a human being interacts with the environment to maintain balance for growth, development and performance, and which involves an exchange of energy and information between the person and the environment for the regulation and control of stressors.
- Coping — a way of dealing with stress.

In this study the ENs and the TBAs shared information about their interactions and how they communicate with the MDR-TB patients. They were sometimes faced with stressful situations with the MDR-TB patients in the community, and they shared how they coped in such stressful situations.

2.2.1.3 The social system

The final interacting system is the social system, which describes how a nurse interacts with colleagues, superiors, subordinates and the client environment in general. The social system comprises of groups of people within the community or society that share a common goal, values and interests. This system provides a framework for social interaction and relationships, and establishes rules of behaviour and courses of action. Social systems are organised boundary systems of social roles, behaviours and practices that are developed to maintain specific values and that function as a mechanism to regulate practices and roles. The concepts related to social systems are described as follows (George 2011:239):

- Organisation — composed of human beings with prescribed roles and positions who use resources to accomplish personal and organisational goals.
- Authority — a transactional process characterised by active, reciprocal relations in which members' values, backgrounds and perceptions play a role in defining, validating and accepting the authority of individuals within an organisation.
- Power — the process whereby one or more people influence other people in a situation.
- Status — the position of an individual in a group, or of a group in relation to other groups in an organisation.

- Decision making — a dynamic and systematic process by which goal-directed choices between perceived alternatives are made and acted upon by individuals or groups in order to answer a question and attain a goal.
- Control — being in charge.

Of the three systems, the conceptual framework of the interpersonal system has the greatest influence on the development of King's theory of goal attainment. King states that "although personal systems and social systems influence quality of care, the major elements in a theory of goal attainment are discovered in the interpersonal systems in which two people, who are usually strangers, come together in a health care organisation to help and to be helped to maintain a state of health that permits functioning in roles" (King 1981:142).

2.2.2 King's theory of goal attainment

The elements of King's theory of goal attainment are developed from the elements or concepts in her framework of interacting systems. However, her theory of goal attainment focuses on the interpersonal system, and the interaction, communications and transactions between two individuals: the nurse and the patient. The essence of this theory is that the nurse and the patient come together, communicate and transact; they set goals and work to achieve the goals set. They each have a purpose, and they perceive, judge, act and react upon each other. At the end of their communication a goal is set, and with this certain transactions occur. King states that the goal of nursing "is to help individuals maintain their health so that they can function in their roles (King 1981:142). Transactions thus occur to formulate and achieve goals related to the health of the patient.

2.3 RELEVANCE OF KING'S THEORY TO THE STUDY

In this study the lived experiences of ENs and TBAs with MDR-TB patients show how health care practitioners interact with patients, they indicate whether the patient or the health care practitioner is in control, and they show how decisions are made. The patients and the nurse both bring perceptions, judgements and actions to the interaction, and together experience reactions to each other, interactions with each other and transactions that can help achieve the treatment goals of the patient (see

Figure 2.1). The interactions and transactions that take place have a cumulative effect. The nurse assists and guides the patient to move forward towards positive treatment outcomes, and aims for patient satisfaction as a result of quality nursing care. A patient will feel a sense of satisfaction when they are taking their treatment and are able to maintain control during the entire treatment process. Nurses can help the patient achieve control by involving them in decision making, listening to their concerns, and offering them health education to aid their decision making. Education about medication, about when the injections will be given, and about why they will be given, provides opportunities for reinforcing patients' sense of self-efficacy. The patient contributes personal, emotional and subjective information while the nurse contributes medical and technical information.

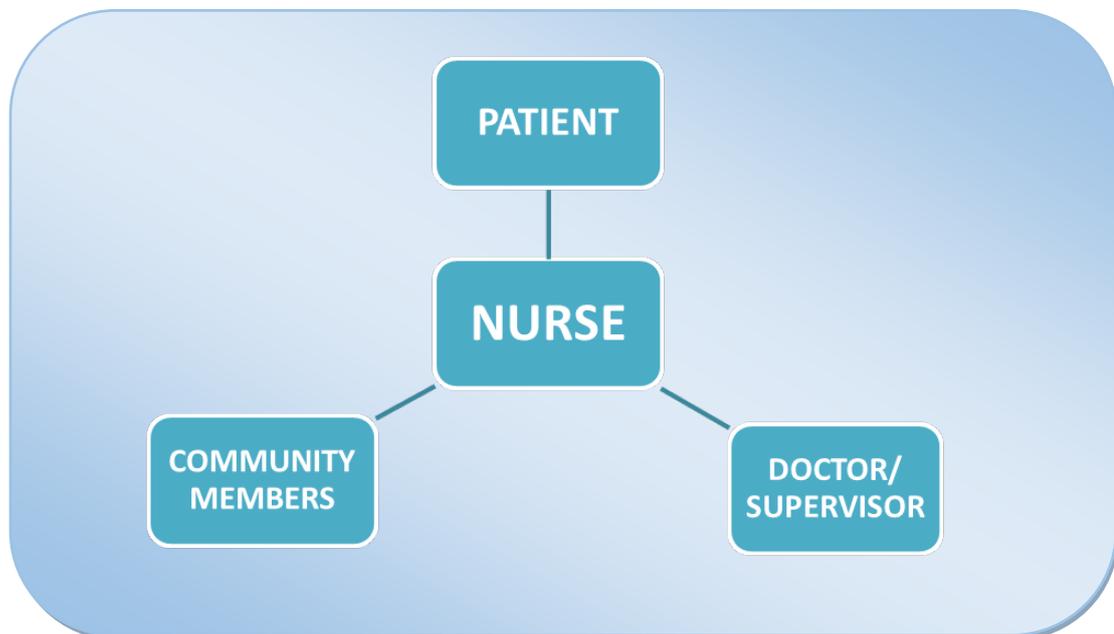


Figure 2.1: Interactions with the nurse

Quality nursing care and a satisfied patient are achieved when the nurse and the patient work together to attain predetermined goals. Effective communication within the dyad reduces any stress that the patient may experience during treatment. The nurse can also monitor the relationship between the patient and the patient's family and community members, because the quality of these relationships can influence the patient's health outcomes.

King's theory of goal attainment is used in this study to analyse the perceptions, judgements and actions of the patients, ENs and TBAs in their everyday interactions. The nurse and the patient as individuals form a group and interact to resolve problems by communicating and setting goals.

2.4 CONCLUSION

This chapter presented the relevance of King's system theory and theory of goal attainment to the study. Chapter 3 presents the literature review.

CHAPTER 3

LITERATURE REVIEW

3.1 INTRODUCTION

This chapter presents a literature review on TB, MDR-TB, MDR-TB injection teams and the management of MDR-TB.

TB mortality has fallen 47% since 1990, with nearly all of that improvement taking place since 2000, when the Millennium Development Goals (MDGs) were set (WHO 2015:1). Effective diagnosis and treatment of TB saved an estimated 43 million lives between 2000 and 2014. The MDG target to halt and reverse TB incidence has been achieved on a worldwide basis and in 16 of the 22 high-burden countries that collectively account for 80% of TB cases. Globally, TB incidence has fallen by an average of 1.5% per year since 2000 and is now 18% lower than the level of 2000. The Global Tuberculosis report describes higher global totals for new TB cases than in previous years, but these reflect increased and improved national data rather than any increase in the spread of the disease. The six countries that stand out as having the largest number of incident cases in 2014 were India, Indonesia, China, Nigeria, Pakistan and South Africa.

Despite these advances and despite the fact that nearly all cases can be cured, TB remains one of the world's biggest threats (WHO 2015:1). In 2014, TB deaths accounted for 1.5 million people (1.1 million HIV-negative and 0.4 million HIV-positive). The toll comprised 890 000 men, 480 000 women and 140 000 children. TB now ranks alongside HIV as a leading cause of death worldwide. HIV's death toll in 2014 was estimated at 1.2 million, which included the 0.4 million TB deaths among HIV positive people. Worldwide, 9.6 million people are estimated to have fallen ill with TB in 2014: 5.4 million men, 3.2 million women and 1.0 million children. Globally, 12% of the 9.6 million new TB cases in 2014 were HIV-positive. The proportion of TB cases co-infected with HIV was highest in countries in the African region. Overall, 32% of TB cases were estimated to be co-infected with HIV in this region, which accounted for 74% of TB cases among people living with HIV worldwide. In parts of southern Africa, more than 50% of TB cases were co-infected with HIV (WHO 2015:13). To reduce this burden,

detection and treatment gaps must be addressed, funding gaps closed and new tools developed. In 2014, 6 million new cases of TB were reported to WHO, fewer than two-thirds (63%) of the 9.6 million people estimated to have fallen sick with the disease. This means that worldwide, 37% of new cases went undiagnosed or were not reported. Of the 480 000 cases of multi drug resistant-TB (MDR-TB) estimated to have occurred in 2014, only about a quarter of these – 123 000 – were detected and reported.

Although the number of HIV-positive TB patients on antiretroviral therapy (ART) improved in 2014 to 392 000 people (equivalent to 77% of notified TB patients known to be co-infected with HIV), this number was only one third of the estimated 1.2 million people living with HIV who developed TB in 2014. All HIV-positive TB cases are eligible for ART. From 2016, the goal is to end the global TB epidemic by implementing the End TB Strategy. Adopted by the World Health Assembly in May 2014, the strategy serves as a blueprint for countries to reduce the number of TB deaths by 90% by 2030 (compared with 2015 levels), cut new cases by 80% and ensure that no family is burdened with catastrophic costs due to TB.

3.2 TUBERCULOSIS

TB is caused by *Mycobacterium tuberculosis*, which most often infects the lungs. The mode of spread and actions to prevent the spread of TB are discussed below.

3.2.1 Mode of spread

TB is usually spread from person to person through the air by droplet nuclei (<5 microns) that are produced when a person with pulmonary or laryngeal TB coughs, sneezes, talks or sings (DoH 2014:8). Droplet nuclei, which are small particles 1–5 um in diameter containing 1–5 bacilli, are highly infectious. They are so small that air currents normally present in any indoor space can keep them airborne for up to four hours. These droplets are small enough to reach the alveolar spaces within the lungs where the organisms replicate. Factors that determine the likelihood of transmission include the number of organisms expelled into the air, the concentration of organisms in the air (determined by the volume of the space and its ventilation), and the length of time for which an exposed person breathes the contaminated air (DoH 2014:8).

One cough can produce 3 000 droplet nuclei and a sneeze up to one million droplet nuclei. The infectious dose of TB is 1–10 bacilli. The most infectious cases are those with smear-positive pulmonary TB with 3+++ on smear microscopy. Smear-negative pulmonary TB cases are much less infectious. Individuals with latent TB infection are not infectious as they do not have replicating bacteria and cannot transmit the organism (DoH 2014:8).

Transmission generally occurs indoors, in dark, poorly ventilated spaces where droplet nuclei stay airborne for a long time. Direct sunlight kills tubercle bacilli but they can survive in the dark for several hours. People most at risk include children <5 years of age and the elderly. People with suppressed immunity are more likely to develop active TB than those with normal immunity. 50–60 % of HIV-positive people infected with TB will go on to develop active disease. Immunosuppressive conditions such as silicosis, diabetes mellitus and prolonged use of corticosteroids and other immunosuppressive drugs also increase the risk of progression to active TB (DoH 2014:8).

3.2.2 Actions to stop the spread of tuberculosis

The key to stopping the spread of TB is to treat patients who are coughing up live TB bacilli as soon as possible. Apart from the public health imperative, effective treatment reduces individual morbidity and mortality. For treatment to be effective, it is crucial that the correct drugs are given for the correct period of time. The aim of TB treatment is to cure the patient of TB, decrease transmission of TB to others, and to prevent the development of MDR/XDR-TB, relapse, complications or death (DoH 2014:40). A study conducted by Bagchi, Ambe and Sathiakumar (2010:223) in Mumbai, India revealed that about one fifth of the patients were non-adherent to TB treatment due to travel-related factors, smoking, alcohol and skipping medication due to a lack of adequate supply.

The findings of a study conducted by Yassin, Datiko, Tulloch, Markos, Aschalew, Shargie, Dangisso, Komatsu, Sahu, Blok, Cuevas and Theobald (2013:3) revealed that TB is one of the major causes of morbidity and mortality in Ethiopia. Despite the introduction of the DOTS strategy in the 1990s and its expansion to most health facilities by 2010, the number of notified cases in Ethiopia is still low compared to the estimated number of cases. Community-based interventions made TB diagnostic and

treatment services more accessible to the poor, women, elderly and children, doubling the notification rate and improving treatment outcomes. Taking services to the community by introducing mobile injection services to identify, treat and manage TB also improved notification rates.

Prompt initiation of effective anti-TB treatment increases the probability that a patient with HIV infection who develops TB will be cured of this disease (Bayeja & Rewari 2004:201-202). TB treatment also quickly renders patients non-infectious, with a resulting reduction in the amount of *Mycobacterium tuberculosis* transmitted to others, and it minimises the patient's risk of death from TB. Therefore, clinicians must immediately and thoroughly investigate the possibility of TB when a patient infected with HIV has symptoms consistent with TB. Persons suspected of having concurrent TB disease should immediately be started on the appropriate treatment, ideally with DOTS, and placed in TB isolation as necessary. Patients with TB and unknown HIV-infection status should be counselled and offered HIV testing. HIV-infected patients undergoing treatment for TB should be evaluated for antiretroviral therapy. Most patients with HIV-related TB are candidates for the concurrent administration of anti-TB and antiretroviral drug therapies.

Health care providers, administrators, and TB controllers must strive to promote coordinated care for patients with TB and HIV, and to remove existing barriers to information sharing between TB-control programmes and HIV/AIDS programmes (Bayeja & Rewari 2004:201-202). TB-control programmes are responsible for setting TB treatment standards for physicians in the community, for promoting the awareness and use of recommended TB infection-control practices, and for enforcing national and local health department requirements concerning TB case notification and the early reporting of drug-sensitivity test (DST) results. Because of the complexity of managing HIV-related TB disease and the serious public health consequences of mismanagement, care for persons with HIV-related TB should be provided by, or in consultation with, experts in the management of both TB and HIV disease.

3.3 PRIMARY HEALTH CARE RE-ENGINEERING

Community-based health services have recently been undergoing a process of formalising and strengthening as part of a broader strategy of PHC revitalisation in South Africa (National DoH 2011). In the National DoH's PHC re-engineering strategy, community-based outreach functions have been prioritised for greater investment and systems development. Outreach functions include intensified household assessment and support, better referral to and integration with PHC facilities, and community mobilisation around priority health needs. Each health ward will have a number of PHC outreach teams, linked to local health facilities, and staffed by a combination of community health care workers (CHW) and professional staff.

In an article by National DoH (2011) on PHC re-engineering, the author indicated that if CHWs were part of a team that was trained, supported and supervised with a clear mandate, both in terms of what they were expected to do as well as the catchment population for whom they were responsible, their role would contribute to better health outcomes.

The integration of community-based systems will bring greater standardisation of monitoring and evaluation, and systems of supervision of CHWs. The National Health Information Systems Committee of South Africa is currently finalising a framework, indicators and tools for the monitoring and evaluation of outreach teams. This will include the integration of data elements into the District Health Information System (DHIS) and prototype tools for local supervision. Effective management of integrated community-based system services at such a large national scale requires strong monitoring and evaluation, and supervision systems (Leon & Schneider 2012:2).

The success of community services has been linked to good-quality supervision and management (Rowe, De Savigny, Lanata & Victora 2005:1). Whilst monitoring and evaluation of community health care work is considered crucial, it also remains a weak link in many CHW programmes, including those in South Africa. CHW programmes tend to be on the periphery of the health services and this, together with poor governance and accountability mechanisms, may be contributing to the inadequacies of monitoring and evaluation (Lehmann & Sanders 2007:6).

A recent survey by Ogunmefun, Friedman, Mothibe and Mbatha (2011:2) of community-based home care services revealed that most of the community organisations surveyed were struggling with basic challenges such as lacking formal office and computer equipment, as well as lack of access to water and electricity. These challenges could also impact negatively on any supervision system. There was a need to develop adequate monitoring and evaluation systems, and to examine the potential contribution of modern information technology to enhance these systems.

3.4 THE CONCEPT OF MOBILE CLINIC SERVICES

A pilot study conducted in British Columbia, Canada using a mobile health intervention at a TB clinic found that the majority of TB clinic patients in the study population owned a mobile phone, used text messaging regularly, and were receptive to receiving text-message communication from the clinic. Patients in the pilot study found the intervention helpful, in particular as a general reminder to take their medication and to report side effects promptly. The clinician valued the programme for the additional support that it provided to patients and for the opportunity it gave patients to report side effects, which could then be followed up on in a timely manner (Van der Kop, Memetovic, Smillie, Coleman, Hajek, Van Borek, Taylor, Alasaly, Johnston, Lester & Marra 2013:7).

In southern Arizona in the United States, the Mobile Health Program provides services to about 2 400 patients each year in areas where little or no health care services are available (Mobile Health Program 2014). No one is turned away, regardless of their ability to pay for services. The programme primarily provides services to the medically underserved or uninsured people of southern Arizona, and provides basic wellness and preventative care for people with acute and chronic conditions.

An evaluation of community-based interventions aimed at improving TB case notification in Kisarawe District in Tanzania yielded valuable insights about the potential outcomes of such interventions as well as about the inherent challenges that could compromise optimal programme implementation and effectiveness. After two years of implementation, the case-notification rate for smear-positive TB increased by 68 %, and the referral network contributed between 38 % and 70 % of these notifications (Colvina,

Mugyabuso, Munuo, Lyimo, Oren, Mkomwa, Makame, Mwangomale, Mahamba, Mueller & Richarson 2014:219).

The high incidence of TB and its significant financial burden make it imperative to find a successful and sustainable strategy to combat this disease. The fact that it affects lower socio-economic groups further compounds the problem. Gender inequality, social stigma, and poverty are also recognised as important barriers to successful TB prevention and control programmes (Arshad, Salam, Lassi, Das, Naqvi & Ghutta 2014:3). In light of the situation, DOTS provides a successful and cost-effective strategy to deal with the burden of TB. Community-based interventions coupled with DOTS seem to be an effective approach as they have the potential to maximise the outreach and minimise the costs. Community-based TB control also offers many lessons for the control of the HIV epidemic. With the emergence of HIV and the consequent TB resurgence, a comprehensive and equitable strategy is needed to stem the worsening double burden of these two infections in poor countries (Arshad et al 2014:1).

3.5 OLD METHODS OF MDR-TB TREATMENT

Given the complexity of MDR-TB treatment, many countries have employed hospital-based, centralised MDR-TB treatment facilities at regional referral centres. Most programmes hospitalise patients for the initial six-month intensive phase of the treatment to facilitate daily injections and to allow close monitoring of adverse events and adherence. In low-prevalence settings, centralised programmes can be advantageous because they concentrate on MDR-TB cases from larger regions and allow for management by trained experts. While this model may be appropriate in settings with a low MDR-TB prevalence, high-burden settings face additional challenges, including insufficient bed capacity to hospitalise all new MDR-TB patients, difficulty retaining patients if they are far from their families, and difficulty in monitoring and tracing patients upon discharge at the end of the intensive phase. As an alternative, community-based treatment models have been developed and have been shown to be effective in low HIV-prevalence settings (Brust, Shah, Scott, Chaiyachati, Lygizos, Van der Merwe, Bamber, Radebe, Loveday, Moll, Margot, Laloo, Fienland & Gandhi 2012:999).

According to the KwaZulu-Natal-DoH, until recently KZN province had a single, centralised MDR-TB treatment centre for the province (which has a population of 10 million and covers 92 000 km²). All patients were admitted for the intensive phase, after which they were discharged with a one-month supply of medication and were scheduled for monthly follow-ups for the remaining 18 months of treatment. Although this approach may have been adequate when case rates were low, in 2003 the treatment success rate for MDR-TB was only 44%. Since then, the MDR-TB caseload in KZN province has nearly doubled, from 1 854 cases in 2003, to 3 040 in 2007, placing further strain on the hospital-based model of MDR-TB treatment. Newly diagnosed MDR-TB patients were placed on 60–120-day waiting lists for an inpatient bed, during which time they remained without treatment, continued to transmit disease, and clinically deteriorated. Moreover, while the rate of HIV co-infection continued to rise, TB and HIV programmes remained separate, despite the known effectiveness of integrating HIV and drug-susceptible TB care in improving outcomes for both diseases (Brust et al 2012:999).

Paradoxically, therefore, the centralised, inpatient treatment model may be contributing to poor MDR-TB treatment outcomes and rising drug-resistance rates in high-burden settings. To address these challenges, an integrated, home-based MDR-TB and HIV treatment programme was implemented in a rural district of KZN province as a demonstration project (Brust et al 2012:998).

Until 2008 the treatment of drug resistant TB in KZN mirrored the WHO guidelines, according to which patients underwent prolonged hospitalisation in a centralised, specialist TB hospital, followed by monthly outpatient visits to the same institution. However, the overwhelming and escalating burden resulted in inconsistent guideline implementation. With limited beds at the centralised hospital, treatment initiation was often delayed by two to three months. When admitted, MDR- and XDR-TB patients were in mixed congregate wards for four to six months because of space limitations. Once discharged, the centralised hospital lacked the necessary personnel and infrastructure to address adverse side effects and the socio-economic demands of patients travelling from across the province. Consequently, of the 5 165 MDR-TB patients treated between 1994 and 2004, 67 % (of which 14 % defaulted and 19 % were not evaluated) had unsuccessful treatment outcomes (Loveday, Phil, Wallengren, Voce, Margot, Reddy, Master, Brust, Chaiyachati & Padayatchi 2012:209).

3.6 MDR-TB INJECTION TEAM

After identifying the need for alternative MDR-TB treatment models, the KZN DoH began piloting decentralised care in 2008 at four sites across the province, utilising regional district hospitals for initial hospitalisation and monthly outpatient follow-up. Furthermore, unlike the centralised model, district health care workers and community resources were recruited to strengthen outpatient follow-up. Although similar models of decentralised MDR-TB treatment have been successfully implemented in other countries, KZN is uniquely challenged as the epicentre of both the TB and HIV epidemics in sub-Saharan Africa (Loveday et al 2012:2).

MDR-TB is a significant health burden in South Africa, and it is particularly problematic in the region of KZN. MDR-TB is not susceptible to most first-line medications, and antibacterial treatment for resistant bacteria may take up to 24 months to complete. The majority of this treatment process occurs outside the confines of the MDR-TB ward — in the community. The 2008 pilot project set out to establish the feasibility of providing community-based care to MDR-TB patients in a rural area of northern KZN, and attempted to understand the multifaceted system of MDR-TB control. The findings revealed that home-based MDR-TB/HIV treatment in rural, resource-limited areas is feasible, safe and may lead to successful treatment outcomes for both MDR-TB and HIV (Loveday et al 2012:2).

In an study by Bateman (2015: 518) revealed in May 2005, Dr Moll from Church of Scotland hospital in the Tugela Ferry district received an alarming call from chief pathologist Dr Lynne Roux, saying that six of the sputum samples resisted every drug thrown at them – and that four other samples from Greytown and Durban had behaved identically. Their two MDR suspects were in the group. Provincial and national case finding began in earnest. By 2007, 60 KZN health facilities were identified as having patients with XDR- and MDR-TB, a survey of 19 of them a year later showing an average of 15% MDR-TB and 3% XDR-TB among confirmed TB patients. National data from across all nine provinces of South Africa in 2007 revealed 1 000 XDR-TB cases and 7 350 MDR-TB cases.

Community-based care is an essential component of the treatment of MDR-TB due to the lengthy treatment process and the potential for adverse side effects. Without a comprehensive system of community-based care, MDR-TB has the opportunity to proliferate and to amplify its resistance. Celone's (2013) project explores the roles, motivations, and skills of various community caregivers who are responsible for treating and overseeing MDR-TB patients in the community, such as the TB tracers, injection nurses, home assessors, and CHWs, who all play integral roles in managing MDR-TB. Participant observation and informal conversations with these hospital personnel allowed for a comprehensive understanding of the management of MDR-TB in the community, and to assess the obstacles to care posed by a rural environment (Celone 2013:8).

Celone's project led to the conclusion that a comprehensive, community-based strategy is necessary for the containment of MDR-TB and that significant funding should be allocated for strengthening MDR-TB control systems. This necessitates the provision of injections directly at the patient's home environment. Those who test positive for MDR-TB are hospitalised in the MDR-TB ward and are immediately started on injection therapy with either amikacin or kanamycin. This injection is administered to the patient six days a week for approximately two months in the hospital ward. Each month, patients must provide a sputum sample to test for the presence of bacilli. Typically the patient's sputum (mucus from the lower airways) will convert to negative after a period of two months on injections. According to the DoH policy, "patients who have negative sputum microscopy and who are clinically not too ill may be initiated on MDR-TB treatment as outpatients if access to daily injections can be organised" (Celone 2013:8).

Celone (2013) concluded that MDR-TB patients should be visited at home by a mobile MDR-TB team five days a week for the duration of the injectable phase of treatment. During visits, the team should administer injectable drugs, monitor side effects, provide health education, and assess household infection-control practices. This constant maintenance is essential, because the interruption of injection treatment may amplify the already resistant bacilli, leading to extensively resistant bacteria (Celone 2013:8).

3.7 PREPARATION OF STAFF FOR THE MDR-TB MOBILE INJECTION TEAM

As the MDR-TB MIT programme was a new service in Ugu Health District, nurses were not familiar with it and therefore a training programme was put in place by the centralised facility. The centralised DR-TB unit is also known as the “Provincial Centre of Excellence”. Each province has at least one hospital that is a specialised unit for DR-TB. This hospital will take a supporting and supervisory role for the MDR-TB outpatient programme in each province, and as the centre of excellence, provide technical advice to the decentralised MDR-TB sites (DoH 2011:17). New employees to the MITs are sent to the centralised facility for orientation and induction to the MDR-TB programme for two weeks.

After the assessment and initiation of MDR-TB therapy to the patients at the centralised or decentralised facility, patients may be referred to a satellite MDR-TB unit consisting of TB wards where they will continue to receive treatment and be monitored daily. The MITs return to the satellite facility and are placed in the TB wards for a further two weeks where they are taught management of MDR-TB patients to gain clinical experience. Thereafter they start with the mobile injection programme.

3.8 MANAGEMENT OF MULTI DRUG RESISTANT-TB

Despite the availability of effective drugs, disease and death due to TB are increasing in South Africa, fuelled by the HIV epidemic. The most serious aspect of the TB epidemic has been the emergence of drug resistant TB (DR-TB) in the country. DR-TB is a manmade problem caused by human error in the management of drug supply, patients, prescription of chemotherapy and patient adherence.

Anti-TB drugs kill the mycobacteria and also select for naturally resistant mycobacteria. In this way strains can become sequentially resistant to several agents and patients may also acquire further drug resistant strains through reinfection or superinfection.

Management of DR-TB involves sustained government commitment, accurate and timely diagnosis through quality-assured culture and drug-sensitivity testing, appropriate treatment utilising second-line drugs under strict supervision, an uninterrupted supply of

quality-assured second-line drugs, and a standardised recording and reporting system (DoH 2011:7).

The current National DoH policy (DoH 2011:5) dictates that all laboratory-diagnosed MDR-and XDR-TB patients be hospitalised in centralised MDR and XDR-TB units until they have two consecutive negative TB cultures taken at least 30 days apart. Consequently, patients are hospitalised for many months and waiting lists for patients to be admitted to the centralised units are long, delaying the initiation of treatment in some provinces for three or four months. In addition, several patients die before starting treatment. Of the approximately 9 070 cases of MDR-TB reported in 2009, fewer than 5 000 were started on treatment in the nine provinces. Of the 7 836 MDR-TB cases diagnosed in 2010, only 5 313 (71 %) were started on treatment. While this was an improvement on the 2009 data, the gap between the number of patients diagnosed and number started on treatment still needed to be narrowed substantially, since less than 50 % of the known MDR-TB cases during the periods mentioned were hospitalised (DoH 2011:5).

Previous estimates showed that up to 73 % of diagnosed cases of MDR-TB were admitted and started on treatment. The number of patients diagnosed with MDR and XDR-TB far exceeded the number of available beds in the province. It was expected that the number of patients diagnosed with DR-TB would increase in the future and thus the demand for beds would continue to increase. Patients would be put onto waiting lists, which would negatively affect treatment initiation, and infectious and untreated patients could expose family and community members to DR-TB bacilli. The policy prescribing that all drug resistant patients be admitted to specialise TB hospitals was not feasible and an adjustment to the policy was required. Consequently the National DoH proposed the decentralised management of patients with MDR-TB in 2008. In this way, it was hoped that patients would be diagnosed and treated much faster, thus increasing treatment coverage, reducing the transmission of the disease, making it possible for patients to be treated closer to their homes, and increasing the social acceptability of treatment. Patients who were willing to receive treatment in the community could access the available health services and commit to adhere to proper infection-control practices at household and community levels (DoH 2011:7). In a study conducted by Loveday et al (2012:5) the findings revealed that decentralised care for MDR-TB patients is more effective than care in a centralised hospital, as 54 % of

patients culture-converted at the decentralised site and only 24 % culture-converted at the centralised site.

The management of DR-TB in centralised specialised units had many challenges, including delays in treatment initiation due to long waiting lists for admission, which increased patients' risk of death and of transmitting DR-TB. Nosocomial transmission of MDR/XDR-TB occurs when infection-control measures are not implemented adequately, and there is substantial evidence that more than half of all XDR-TB infections are acquired in hospital (Basu, Andrews, Poolman, Gandhi, Shah, Moll, Moodley, Galvani & Friedland 2007:1500).

Refusal of hospitalisation, or absconding by some patients due to lengthy hospital stays, lack of recreational facilities in hospitals or patients' need to attend to their family responsibilities, posed further challenges. A study undertaken in KZN indicated that 70 % of MDR-TB patients' households are headed by females who cannot be admitted to hospital for long periods due to family responsibilities. Patients felt that monthly follow-up trips to the centralised hospitals for monitoring and medication are lengthy, arduous, costly and unpleasant, which contributes to poor adherence (DoH 2011:8).

Prolonged hospitalisation can result in nosocomial spread and greatly increases the overall cost of treating MDR-TB. A study conducted in Argentina by Burgos, Gonzalez, Paz, Gournis, Kawamura, Shecter, Opewell and Daley (2005:973) revealed that the only patient with documented proof of transmission of an MDR strain acquired the strain during an outbreak of MDR-TB at a hospital.

Burgos et al's (2005) Argentine study also reveals that patients with chronic MDR-TB can be treated successfully as outpatients outside referral centres and in resource-poor countries. The DOTS Plus model relies on CHWs supervised by nurses working in close collaboration with Argentina's successful National Tuberculosis Control Program. By moving treatment into the community, it is possible, without compromising the quality of therapy, to lower costs and reduce the risk of nosocomial spread of MDR-TB.

In a study on community-based therapy for MDR-TB in Lima, Peru, one outbreak accounted for nearly one fourth of the cases of MDR-TB in the country during a 43-month period. Most patients had nosocomially acquired disease, were infected with HIV,

and unless promptly and appropriately treated, died rapidly (Mitnick, Bayona, Palacios, Shin, Furin, Alcantara, Sanchez, Sarria, Becerra, Fawzi, Kapiga, Neuber, Maguire, Kim & Farmer 2003:119).

In Mitnick et al's (2003:127) study, it was shown that the DOTS Plus model had been expanded over a two-year period to cover much of Peru, and that the costs of therapy had continued to drop even as control over the distribution of second-line drugs had been enhanced. Successful community-based therapy for MDR-TB and potentially for HIV provides hope for the tens of millions of patients who are suffering from chronic infectious diseases in settings with limited health infrastructure.

3.8.1 Decentralised treatment for MDR-TB patients

In South Africa, decentralised treatment of MDR-TB patients is taking place since 2008 in an uncoordinated and unsystematic manner (DoH 2011:8). Formalisation of decentralised treatment with guidelines on implementation will optimise the chances of successful treatment, as treatment outcomes for MDR-TB patients in South Africa managed as inpatients are not good (DoH 2011:8). Between 1987 and 1989, Schaaf, Botha, Beyers, Gie, Vermeulen and Groenewald (1996:718) reported that in their study, 443 patients with MDR-TB, were identified over the 2-year period 1987 and 1988 in the Cape Province of South Africa. The 5-year outcome of the 343 (77%) patients that could be traced by questionnaire was evaluated retrospectively during 1992 and 1993. Of these, 240 (70%) were resistant to both isoniazid and rifampicin with or without resistance to other first-line antituberculosis drugs and 103 (30%) were resistant to isoniazid or rifampicin and/or other antituberculosis drugs. Mortality was 116 (48%) and 28 (27%) in these groups respectively with a significantly greater risk of death in the first group. Only 114 (33%) of all the MDR-TB patients were cured after 5 years, 50 (15%) were respiratory disabled and 44 (13%) were still bacteriology positive. Twenty-four (7%) patients were lost during follow-up.

A national study conducted from 1999–2001 and focusing on 671 patients reported that 67 (10%) had defaulted on treatment. Of the 67 patients who had defaulted, 27 (40.3%) had had positive TB culture sputum at the time of defaulting, and had therefore been infectious. This large proportion of positive TB culture among defaulters underscores the public health importance of minimising treatment default (DoH 2011:8).

At King Dinizulu Hospital (formerly known as King George V Hospital) in Durban, a treatment success rate of approximately 45 % and a defaulter rate of 15 % were recorded between 2000 and 2006. In a study conducted at Tugela Ferry in KZN from 2005 to 2007, the mortality rate among MDR-TB patients after one year's treatment was 75 %. A review of the 2007 cohort of MDR-TB patients by the National DoH showed a treatment success rate of 42 %, a defaulter rate of 9.6 %, a failure rate of 4.8 %, and a higher death rate of 20.4 %, with 5.1 % of patients having transferred out and 18 % remaining on treatment after two years (DoH 2011:8).

Participants in a national workshop on MDR-TB community care in July 2009 suggested that the period of stay of MDR-TB patients in centralised MDR-TB hospitals be reduced, arguing that the following decentralised units would ensure treatment closer to patients' homes: decentralised drug resistant units, satellite MDR-TB units and community-based units with the support of PHC services, including mobile teams and community caregivers (DoH 2011:8).

Community-based treatment models for MDR-TB have been successfully implemented in certain countries, but the South African situation is unique. When considering appropriate models the South African health services have to address the high burden of both HIV and TB, high TB/HIV co-infection rates and a high incidence of MDR-TB, as well as pockets of XDR-TB. The decentralised management of MDR-TB patients has been shown to benefit patients, as documented in the example of Peru, in Latvia and in some parts of South Africa, and improved cost-effectiveness has been shown as a result of the reduction of lengthy hospital stays in specialised hospitals (DoH 2011:9). In a study conducted by James, Brust, Shah, Scott, Chaiyachati, Lygizos, Van der Merwe, Bamber, Redebe, Loveday, Moll, Margot, Lalloo, Friedland and Gandhi (2012:1003), the results suggest that home-based MDR-TB/HIV treatment in rural, resource-limited areas is feasible, safe and may lead to successful treatment outcomes for both MDR-TB and HIV.

Effective treatment for DR-TB at different levels of the health care system will depend on clear expectations with specific functions for each level of the health care system and a clear referral pathway between these levels. This will facilitate support for

community-level facilities from experts in DR-TB at the centralised specialised hospitals in each province (DoH 2011:11).

3.8.2 Decentralised MDR-TB management

A well-functioning TB programme is essential to prevent the further development of DR-TB. A decentralised and de-institutionalised MDR-TB management system needs to be closely linked to the overall TB control and management programme and to the PHC outreach teams if it is to succeed. Health care workers in all facilities must increase case-finding activities in relation to drug-sensitive TB and they must recognise that patients who fail to respond to first-line therapy may be drug resistant and need to be managed quickly and appropriately. Linking MDR-TB management with the overall TB programme, especially at district and PHC levels, is essential to ensure treatment success for MDR-TB patients (DoH 2011:11).

In addition, linkages with all health services and facilities are necessary to minimise nosocomial transmission of DR-TB at these facilities and when TB patients are transported in patient transport vehicles. Health care workers need to be educated about the risk of nosocomial transmission and about which patients, such as those who are HIV infected or immunocompromised, are most vulnerable. Nearly 70 % of patients with MDR-TB are co-infected with HIV, making it important to integrate DR-TB services with those serving HIV-infected patients (DoH 2011:11). Every co-infected patient should have both conditions assessed and monitored, and repeat medication should be prescribed at each monthly appointment (DoH 2011:13).

A successful decentralised MDR-TB programme includes prompt and accurate MDR-TB diagnosis. Multi-disciplinary teams must be trained in MDR-TB management with adequate and effective mentorship and supervision. Guidelines/protocols for clinical management must be available and accessible. Uninterrupted supplies of second-line anti-TB drugs must be available, as well as ancillary drugs for managing side effects. Infection-control measures must be in place and there must be integration with local TB/HIV programme activities and PHC services. Patients who will receive treatment in the community must be carefully selected so as to comply with the treatment. The programme must be monitored and evaluated to check its effectiveness. Indicators must

be defined and operational research conducted, and resources must be dedicated to ensure the provision of specialised MDR-TB staff (DoH 2011:13).

An essential step in the decentralisation of MDR-TB treatment is that district health managers and health workers are apprised of the framework. It is essential to ensure that they will support its implementation. Effective DR-TB treatment, including highly active antiretroviral treatment (HAART) when indicated, requires the close monitoring of side effects and tight control of drug use, among other requirements (DoH 2011:13).

All MDR-TB patients who have not been previously tested for HIV or who are HIV negative on admission will be offered an HIV test. Those who are positive and eligible for HAART but are not on treatment will be initiated into treatment as soon as possible. All decentralised MDR-TB sites must be accredited as antiretroviral treatment sites, and DR-TB staff should be trained in managing HAART side effects. This policy framework has been developed based on previous experience in Peru and current efforts at outpatient MDR-TB treatment facilities in KZN and in the Western Cape (DoH 2011:17). Burgos et al (2005:972) demonstrated that within the context of an effective TB control programme, it was feasible to treat MDR-TB in HIV sero-negative patients with the use of appropriate intensive treatment regimens, largely within an outpatient approach, and achieve high cure rates comparable with those obtained for patients with drug-susceptible TB.

3.8.3 Drug resistant unit

Drug resistant unit is defined by the services they offer, more than the health professionals who work there. A drug resistant unit is a health care facility where health professionals have been trained to initiate and manage the treatment of drug resistant patients. A DR-TB unit may be a standalone hospital or a DR-TB ward in a general hospital or a drug resistant ward in a TB hospital or other specialised hospital.

The following staff are needed for this unit: a doctor, an operational manager, nurses, a pharmacist, a social worker, a dietician, a clinical psychologist, an occupational therapist, an audiologist, a physiotherapist, a data capturer, an administration clerk, general assistants, a housekeeper and a driver. Protection that is available for the staff should include an annual screening programme for TB such as a chest x-ray, and

annual re-training on infection prevention and control. Staff are medically examined free of charge if they have had a cough for two weeks or more. Encouraging and enabling health care workers to know their HIV status is a priority, which could be achieved by accessible, acceptable and confidential counselling and testing. N95 respirators must be made available to the staff to protect against the inhalation of TB bacilli (DoH 2007:16-17).

Hospitalisation of patients provides time for initiating DR-TB and HIV treatment, for monitoring the initial response to treatment and possibly adjusting medication, and for educating and counselling the patient on MDR-TB and HIV. Discharge planning involves assessing the household, and educating and counselling the family and other household members on DR-TB and HIV to optimise family support for the patient to encourage treatment adherence and implementation of household infection control (DoH 2011:17).

Ideally, patients with DR-TB must be cared for in hospitals equipped with negative-pressure isolation facilities, administrative hospital protocols to deal with such patients should be implemented such as an infection control plan, quality assurance, training of staff, patient education, and appropriate environmental protective measures such as natural or mechanical ventilation, filtration and ultraviolet germicidal irradiation, should be taken (South Africa 2007:9-14). Adequate ventilation (>12 air changes/h), obtained by opening windows and doors, is the most important and easily implemented measure other than diagnosing and treating infectious cases early and effectively, and separating suspected cases from other susceptible people such as children and HIV-infected individuals (Migliori, Dheda, Centis, Mwaba, Bates, O'Grady, Hoelscher & Zumla 2010:1061).

Cough etiquette is also a cost-effective intervention that needs to be implemented at all levels. A recent modelling study on infection-control outcomes estimated that half of anticipated XDR-TB cases could be averted by applying a combination of available strategies in developing countries (Migliori et al 2010:1061). Appropriate safety measures using negative-pressure category 3 cabinets, masks and gloves should be implemented.

3.8.4 Centralised MDR-TB management

Each province in South Africa has at least one hospital that is a specialised unit for DR-TB. This hospital takes a supporting and supervisory role for the MDR-TB outpatient programme in each province and, as the centre of excellence, provides technical advice to the decentralised MDR-TB sites.

All suspected drug resistant patients are referred to centralised drug resistant units for initiation of treatment. DR-TB cases from the geographic area around the unit are admitted. All XDR-TB cases are hospitalised until there are two successive negative TB cultures. All DR-TB outpatients are assessed when attending the clinic each month. DOTS is provided to all DR-TB patients attending the unit each day. The unit records all outpatients coming to the clinic in a daily outpatient register. All patients initiated on MDR-TB medication are recorded in an MDR-TB register and reports on MDR-TB initiations are forwarded to the provincial DoH monthly.

The following services are provided by the centralised drug resistant units, which includes providing ongoing training, support and supervision for the facilities in the province. All patients admitted at the centralised unit are provided with social support, rehabilitation, and educational and skills-building programmes that provide health education and counselling. A discharge plan is prepared for all patients and this ensures effective down-referrals. DR-TB patients are monitored post discharge until the completion of their treatment, and for two years post treatment completion. The rational usage of second-line drugs and ancillary drugs for the management of side effects is monitored. Functional clinical management teams are established and maintained, compiling monthly, quarterly, six-monthly and annual reports on the DR-TB patients started on treatment, their culture conversion and their outcomes. Technical assistance and capacity building for the decentralised DR-TB units and feeder clinics are provided on the management of DR-TB and on arranging patients' evaluations at provincial patient-review committees (DoH 2011:17).

A patient is regarded as having defaulted treatment if s/he has missed treatment for two consecutive months. Every effort should be made to recall patients who abscond or interrupt treatment for a day or two, to persuade them to resume treatment. A home visit must be conducted to find out why the patient has defaulted after two days and to

ensure that treatment is resumed promptly and effectively. The situation should be addressed in a sympathetic, friendly, and non-judgmental manner. Every effort should be made to address the patients' concerns or reasons for interruption or abscondment to prevent it from happening (DoH 2013:94).

3.8.5 Administrative and management responsibilities

District or sub-districts have administrative and management responsibilities in ensuring effective services for treating DR-TB in the area. The primary function of the district office is to trace all confirmed DR-TB patients and refer them to the DR-TB hospital. The availability of drugs for the patients at the clinics or district hospitals must be ensured. An efficient patient-retrieval system for patients who default on DR-TB treatment must be established, and arrangements for transportation must be made for patient evaluation and follow-ups at the DR-TB hospital. Disease outbreak teams must be appointed to conduct six-monthly contact-screening programmes for all close contacts of confirmed DR-TB patients for two years. Household assessments by the Social Worker must be conducted prior to discharging patients from DR-TB units. The District office must monitor and evaluate the performance of the DR-TB programme. Patients' post discharge care must be planned and the district office must ensure ongoing psychosocial support for patients, and must increase awareness and education about DR-TB in the communities they serve (DoH 2011:18).

3.8.6 Satellite MDR-TB units

Satellite MDR-TB units exist to complement the bed capacity of decentralised sites. They are essentially transitional and should be capacitated to become decentralised sites. The functions of satellite MDR-TB units include admitting all MDR-TB cases referred from centralised or decentralised DR-TB units. Patients are monitored for side effects. Patients with XDR-TB, severe adverse events and complicated disease are referred to the centralised DR-TB site. Satellite units ensure monthly follow-up and DOTS for all DR-TB patients attending the unit. All patients admitted to hospital are educated and counselled. A discharge plan is prepared and effective down-referrals are ensured. Patients can be discharged to the community and continue receiving treatment either from the mobile team or their nearest PHC facility (DoH 2011:22).

3.8.7 Primary health care approach

PHC facilities should play a significant role in providing injectables at the clinics and providing DOTS to all DR-TB patients in the area. This must be integrated with the treatment of other TB and HIV patients. Patients who have access to a PHC clinic should utilise the health facility for their daily injection and DOTS. The facility-based staff monitor side effects and adherence, provide education on the disease and monitor household infection-control practices. Minor side effects such as nausea, vomiting and diarrhoea should be managed by the nurse at the facility, but the patient will be referred to the decentralised DR-TB unit for management of more serious side effects. In addition the nurse at the facility should be responsible for contact tracing and serve as the link between the decentralised DR-TB unit and MDR-TB patients treated at the facility. PHC facilities treating MDR-TB patients will be supported by the nearest decentralised DR-TB unit or the centralised DR-TB unit or provincial centre of excellence if it is closer to the facility (DoH 2011:23).

The functions of PHC facilities include identifying high-risk groups, screening and testing symptomatic high-risk groups, and tracing patients with a confirmed diagnosis of DR-TB. Notifications are submitted to the district TB co-ordinator. The initial counselling and education of the patient and family are provided and, when indicated, the patient is prepared for hospital admission. PHC facilities coordinate referrals to the centralised and decentralised drug resistant units, follow up on all DR-TB cases attending a clinic, and provide DOTS. The PHC facilities also screen close contacts and follow up on patients who have started community-based treatment or patients who are post discharge from the hospital. In addition, the PHC facilities trace treatment interrupters, collect monthly sputum samples and samples for other routine tests, monitor treatment side effects and ensure the referral of patients with XDR-TB, severe adverse events and complicated disease to the centralised DR-TB unit (DoH 2011:23).

Contact tracing and monitoring is an important role of the PHC facilities through the mobile teams and DOTS supporters. Measures for contact tracing and monitoring include listing and examining all contacts and testing those with symptoms in accordance with existing TB protocols, and re-testing contacts with symptoms for TB and drug sensitivity six-monthly for two years. MDR-TB patients are continuously

screened for signs and symptoms, and HIV counselling and testing are offered to contacts (DoH 2011:24).

DOTS supporters may be community caregivers, community DOTS volunteers, or family members. Family members should be used only as a last option because they may be coerced by other family members, making them less objective as community caregivers. Patients and their DOTS supporters will be trained in the natural history of MDR-TB and HIV as well as in basic infection control, such as cough hygiene and the basic principles of isolation, MDR-TB medications, common side effects and the role of HIV in TB infection. Family planning during MDR-TB treatment will be encouraged. Community caregivers will provide ongoing daily support to MDR-TB patients who are treated on an outpatient basis. If the patient is on HAART, the patient and treatment supporter will receive literacy training according to current practice. This will be given by staff trained in MDR-TB and integrated TB and HIV care. In addition, education of the patient, household supporter and possibly even treatment supporter should be provided at the individual patient's home by the mobile MDR-TB unit (DoH 2011:25). In a study conducted by Celone (2013:16), the findings revealed that there is a great need for medical facilities and personnel for the treatment and surveillance of MDR-TB patients, as many MDR-TB treatment centres remain overcrowded, understaffed and simply unable to care for all infectious-disease patients. Therefore, community support structures must be in place to maintain patient adherence to therapy during the long arduous treatment regimen. If the management of MDR-TB in the community is not a priority, patient non-compliance may result in the development of XDR-TB.

The functions of community-level services include providing DOTS to all DR-TB patients in the area, providing patient, family and community education on TB, monitoring treatment side effects and referring to the nearest health care facility when required, and maintaining appropriate records (DoH 2011:26). A study conducted by Mitnick et al (2003:119) revealed that community-based outpatient treatment of MDR-TB can yield high cure rates, even in resource-poor settings.

DR-TB treatment should be monitored closely through daily DOTS and the recording of patients' taking drugs and receiving injections. Sputum for smear microscopy and culture should be collected every month for the duration of the treatment. Depending on where the patient is receiving care, daily DOTS and recording of patients taking drugs

and receiving injections will be done by the decentralised DR-TB site, mobile team or the satellite unit administering medication. Sputum collection and the monitoring of smear microscopy culture and drug-sensitivity testing results will be conducted at the decentralised DR-TB site. Adverse effects should be monitored continuously by the facility where the patient is receiving treatment or the mobile team and DOTS supporters. Adverse effects will be assessed using a checklist and, where necessary, reported without delay to the supervising unit. Adverse effects must be treated aggressively in order to enhance treatment adherence. Details of the patient's HIV status and HAART, including the commencement date and treatment regimen, must be recorded in the patient's notes. The clinical and laboratory evaluations should be conducted monthly (DoH 2011:33).

Mobile teams should decrease the risk of contracting DR-TB by adhering to the following infection-control measures: wearing an N95 respirator; keeping home visits or clinical evaluations brief, and whenever possible conducting these outside or in well-ventilated room with as much distance as possible from the patient; educating the patient on cough hygiene and avoiding close contact; providing the patient with a surgical mask when close contact is required; collecting sputum outside; and observing prescribed infection-control precautions (DoH 2011:34).

When transporting DR-TB patients, the following infection-control measures should be observed: using compartmentalised vehicles in which the airspace of the driver is separate from that of the passengers, opening windows in the vehicle, providing surgical masks for patients, providing N95 masks for the medical staff and driver, and educating patients (DoH 2011:34).

Regular monitoring of patients with DR-TB enables clinicians to monitor whether the patient is responding to treatment. Monthly monitoring is necessary during the injectable phase. Bi-monthly monitoring can be done during the continuation phase. Data detailing each step in the patient's treatment journey and where it is taking place should also be captured (DoH 2011:36).

The decentralised DR-TB sites should be responsible for keeping the DR-TB registers up to date, collecting data and capturing data on the electronic DR-TB register. All satellite sites, PHC clinics or mobile teams that treat DR-TB patients should provide

data to the decentralised site. The decentralised site must collate and analyse all data from the district and send this to the centralised DR-TB unit and the provincial directorate. The province will submit data to the National DoH. The provincial DoH in turn should provide feedback to the decentralised sites and all teams that will be managing MDR-TB outside the TB institutions (DoH 2011:36).

In 2005, large numbers of patients with MDR-TB and XDR-TB were identified at a rural hospital in Tugela Ferry, KwaZulu-Natal. Systematic surveillance undertaken at the hospital between January 2005 and March 2006 revealed that, of 542 patients with positive sputum TB culture results, 221 (41%) had MDR-TB and 53 (10%) had TB caused by *M. tuberculosis* strains with resistance to all 6 drugs tested (isoniazid, rifampicin, ethambutol, streptomycin, ciprofloxacin, and kanamycin). From January 2005 to March 2007, a total of 433 patients with MDR-TB, including 239 patients with XDR-TB, were identified at the Church of Scotland Hospital in KwaZulu-Natal (Gandhi, Moll, Sturm 2006:1575).

3.8.8 Case finding

Routine culture and first-line drug-sensitivity testing (DST) should be conducted for new TB patients who remain smear-positive after two months of treatment or who become positive after five months of treatment; for all newly diagnosed re-treatment TB patients; and for symptomatic individuals from known high-risk groups, including health care practitioners, laboratory workers, prisoners, mine workers and HIV-positive individuals in high MDR-TB prevalence areas.

First-line DST should include testing for isoniazid and rifampicin. Ethambutol and streptomycin should not be included routinely as this does not change the management of the MDR-TB patient. Previously treated TB (retreatment) patients may have had DST results in the past that may no longer reflect the resistant pattern of the strain they have at the time of MDR-TB diagnosis. DST should therefore be performed again in all patients who have received TB treatment since the date of their last DST result. Gastric aspiration or induced sputum should be considered for young children to obtain specimens for confirmation of diagnosis. Children with TB disease who are close contacts of patients with MDR-TB may be started on MDR-TB treatment until it is confirmed that they do not have MDR-TB (DoH 2014:32).

3.9 MDR-TB MOBILE INJECTION TEAMS AS PART OF COMPREHENSIVE HEALTH SERVICES

Community-based care is one of the essential steps in the treatment of MDR-TB due to the lengthy treatment process and the potential for adverse side effects. Without a comprehensive system of community-based care, MDR-TB has the opportunity to proliferate and to amplify its resistance (Celone 2013:1). An effective treatment regimen for a patient who presents with MDR-TB typically lasts between 18 and 24 months. Those who test positive for MDR-TB are hospitalised in the MDR-TB ward at the centralised site and immediately started on injection therapy of either amikacin or kanamycin. Typically the patient's sputum will convert to negative after a period of two months of injections and thereafter the patient will be discharged and allowed to return home. This necessitates the administering of injections directly at the patient's home. MDR-TB patients must be visited at home by a mobile team five days a week for the duration of the injectable phase of treatment. During visits, the team will administer injectable drugs, monitor side effects, provide health education and assess household infection-control practices. This constant maintenance is essential because the interruption of injection treatment may amplify the already resistant bacilli, leading to extensively resistant bacteria.

3.10 CONCLUSION

This chapter has presented a literature review on various topics related to MDR-TB management, the introduction of community-based rural treatment of MDR-TB patients, case finding in rural communities, and mobile MDR-TB injection teams.

CHAPTER 4

RESEARCH DESIGN AND METHODOLOGY

4.1 INTRODUCTION

The aim of this chapter is to describe the research design and methods that were applied to explore and describe the experiences of the MITs caring for MDR-TB patients in Ugu District, KZN.

4.2 RESEARCH DESIGN

A qualitative paradigm was adopted for this study. The methodology that underpins this study is the qualitative method of descriptive phenomenology.

4.2.1 Phenomenology

Phenomenology focuses on the meaning of the lived experiences of humans, and a phenomenological approach was therefore considered most appropriate for conducting this study (Marshall & Rossman 2006:44). The phenomenological method was employed for this research because the researcher sought to learn about the “essences” of ENs and TBAs experiences. The qualitative data gathered through this approach emphasises people’s lived experiences and is fundamentally well suited for locating the meaning people ascribe to the events, processes and structures of their lives.

4.2.1.1 Development of phenomenology

The phenomenological movement began around the first decade of the 20th century. This philosophical movement consisted of three phases: the preparatory, German and French phases. The preparatory phase was dominated by Franz Brentano (1838–1917) and Carl Stumpf (1848–1936). Stumpf was Brentano’s first prominent student and through his work demonstrated the scientific rigour of phenomenology. Clarification of the concept of intentionality was the primary focus during this time (Spiegelberg

1965:52) intentionality means that consciousness is always consciousness of something (Streubert Speziale & Carpenter 2011:75).

Edmund Husserl (1857–1938) and Martin Heidegger (1889–1976) were the prominent leaders during the German phase. The concepts of essences, intuiting and phenomenological reduction were developed. Essences are elements related to the ideal or true meaning of something, that is, those concepts that give common understanding to the phenomenon under investigation. Essences emerge both in isolation and in relationship to one another, and represent the basic units of common understanding of any phenomenon (Streubert Speziale & Carpenter 2011:75).

Intuiting is an eidetic comprehension or accurate interpretation of what is meant in the description of the phenomenon under investigation. The intuitive process in phenomenological research results in a common understanding about the phenomenon under investigation. Intuiting in the phenomenological sense requires that researchers imaginatively vary the data until a common understanding about the phenomenon emerges. Through imaginative variation, researchers begin to wonder about the phenomenon under investigation in relationship to the various descriptions generated (Streubert Speziale & Carpenter 2011:76).

Phenomenological reduction is a return to original awareness regarding the phenomenon under investigation. It begins with a suspension of beliefs, assumptions and biases about the phenomenon under investigation. Isolation of pure phenomenon versus what is already known about a particular phenomenon is the goal of the reductive procedure. The only way to really see the world clearly is to remain as free as possible from preconceived ideas or notions. As part of the reductive process, phenomenological researchers must first identify any preconceived notions or ideas about the phenomenon under investigation. Having identified these ideas, the researchers must bracket or separate out of consciousness what they know or believe about the topic under investigation. Bracketing requires researchers to remain neutral with respect to belief or disbelief in the existence of the phenomenon. Bracketing begins the reductive process and must continue throughout the investigation. Essentially researchers set aside previous knowledge or personal beliefs about the phenomenon under investigation to prevent this information from interfering with the recovery of a

pure description of the phenomenon. Bracketing must be constant and ongoing if descriptions are to achieve their purest form (Streubert Speziale & Carpenter 2011:77).

Bracketing requires the researcher to remain neutral with respect to belief or disbelief in the existence of the phenomenon (Streubert Speziale & Carpenter 2011:77). The researcher thus had to first identify any preconceived ideas about the MIT challenges. Then the researcher had to suspend any knowledge she might have about the MIT's experiences to prevent this information from interfering with the recovery of a pure description of the phenomenon (MIT experiences). This would allow the "truth" to show itself and would determine the trustworthiness of the results.

Gabriel Marcel (1889–1973), Jean-Paul Sartre (1905–1980) and Maurice Merleau-Ponty (1905–1980) were the predominant leaders of the French phase of the phenomenological movement. The primary concepts developed during this phase were embodiment and being-in-the-world. These concepts referred to the belief that all acts are constructed on foundations of perception or original awareness of some phenomenon (Streubert Speziale & Carpenter 2011:77).

Phenomenology is a science whose purpose is to describe particular phenomena, or the appearance of things, as lived experiences (Streubert Speziale & Carpenter 2011:73). There are two schools of phenomenology: descriptive phenomenology and interpretive phenomenology. Descriptive phenomenology is the type that forms the framework for this research.

4.2.1.2 Descriptive phenomenology

Descriptive phenomenology was developed by Husserl (1962), whose philosophy emphasised descriptions of the meaning of human experience. Heidegger, a student of Husserl's, moved away from his professor's philosophy into interpretive phenomenology. Husserl emphasised interpreting and understanding, not just describing human experience. The focus of phenomenological inquiry then is the meaning of people's lived experience in regard to a phenomenon (descriptive phenomenology), and how those experiences are interpreted (Polit & Beck 2004:253). Descriptive phenomenological study often involves the following four steps: bracketing, intuiting, analysing and describing.

Bracketing refers to the process of identifying and holding in abeyance preconceived beliefs and opinions about the phenomenon under study. Intuiting requires the researcher to become totally immersed in the phenomenon under investigation, and is the step in the process whereby the researcher begins to know about the phenomenon as described by the participants. It occurs when researchers remain open to the meanings attributed to the phenomenon by those who have experienced it (Streubert Speziale & Carpenter 2011:8; Polit & Beck 2004:254).

Phenomenological analysing involves identifying the essence of the phenomenon under investigation based on data obtained and how the data are presented (Streubert Speziale & Carpenter 2011:82). Researchers extract significant statements, categorise them and make sense of the essential meanings of the phenomenon. The descriptive phase aims to communicate and bring to written and verbal description the distinct, critical elements of the phenomenon which occurs when the researcher comes to understand and define it (Polit & Beck 2004:254).

Descriptive phenomenology provides the framework for this study as it is aimed at describing and gaining a rich understanding of the lived experiences of ENs and TBAs from the MITs with MDR-TB outpatients.

4.3 RESEARCH METHODOLOGY

4.3.1 Population and sampling

Population and sampling are discussed below.

4.3.1.1 Population

Research population refers to all elements (individuals, events or circumstances) that meet the sample criteria for inclusion in a study. It is sometimes referred to as the target population (Burns & Grove 2007:806). The research population for this study is comprised of ENs and TBAs working in an MIT at two hospitals in Ugu District in KZN. There are four teams in Ugu District. Two teams are based at the decentralised site and two teams at the satellite site. Ugu District is found in the lower South Coast of the

Province of KZN, its estimated population is 733228, and its neighbouring districts are eThekweni and Harry Gwala. Ugu is one of the 11 districts of KZN province of South Africa. The seat of Ugu is Port Shepstone (Ugu Health District 2016:1).

4.3.1.2 Sampling

Sampling is an important aspect of research methodology and is essential for the general conclusions that the researcher draws (Miles & Huberman 1994:27). The most important aspect of sampling is that the study must yield findings that inspire confidence and the selection of an appropriate population is paramount.

A census approach was used for this study, as it is a study of every unit, everyone or everything in a population. It is known as a complete enumeration, which means a complete count. In this study all ENs and TBAs from the MITs were included. The advantage of a census is that it provides a true measure of the population with no sampling errors. Benchmark data may be obtained for future studies and detailed information about small sub-groups within a population is more likely to be available. The disadvantages are that it may be difficult to enumerate all units in the population within the available time, there may be higher costs, and it generally takes longer to collect, process and release data than from a sample (Australian Bureau of Statistics 2013:1).

Purposive sampling was used as the participants were selected for the purpose of describing an experience in which they have participated (Streubert Speziale & Carpenter 2007:29). The participants' active involvement in the inquiry helps those who are interested in their experiences or cultures to better understand their lives and social interactions. Purposive sampling involves the conscious selection by the researcher of certain participants, elements or incidents in the study. In purposive sampling, qualitative researchers select information-rich cases or those cases from which they can learn a great deal about the central focus (Burns & Grove 2007:352). Purposive sampling is a non-probability sampling method in which the researcher selects participants based on personal judgment about which ones will be most representative or informative (Polit & Beck 2004:729).

With regard to sample size, the researcher adhered to the rule that the number of participants in a qualitative study is adequate when saturation of information is achieved in the study areas. Saturation of data occurs when additional sampling provides no new information, that is, when no new themes or essences have emerged from the participants and the data is repeated. It usually involves a small sample (Streubert Speziale & Carpenter 2003:68).

The final sample consisted of three ENs and four TBAs in the MDR-TB mobile injection teams who had worked at two MDR-TB hospitals for two years. To ensure anonymity, these hospitals are referred to as “Hospital A” and “Hospital B”. The three ENs were all male, and the TBAs consisted of three males and one female.

4.3.1.3 Inclusion and exclusion criteria

To be eligible for inclusion in the study, participants had to comply with the following criteria. They needed to

- have had at least six months’ working experience with MDR-TB patients in an MIT in Ugu District
- be an EN registered with the South African Nursing Council and must have an annual practising certificate
- or, be a TBA
- be willing to participate
- be based at the decentralised or satellite site

4.3.1.4 Ethical issues related to population and sampling

The researcher ensured that the following ethical issues related to population and sampling were maintained:

Protecting the rights of the participants

Informed consent means that participants have adequate information regarding the research, are capable of comprehending the information, and have the power of free choice, enabling them to consent to or decline participation voluntarily (Polit & Beck

2004:151). Prior to each interview, the researcher explained the purpose of the study and informed the participants of their right to withdraw at any point. The purpose of recording the interviews on audiotape was explained and included on the consent form and the participants were requested to sign a consent form.

The psychological consequences of participating in a study are usually subtle and thus require close attention and sensitivity. The researcher conducted the interviews and avoided or minimised psychological harm by phrasing questions carefully, by having debriefing sessions that permitted participants to ask questions or air complaints after the data had been collected (Polit & Beck 2004:144). In this study no referrals to health, social or psychological services had to be made for the participants.

The general guideline is that the degree of risk to be borne by those participating in the research should never exceed the potential humanitarian benefits of the knowledge to be gained. The researcher had selected a significant topic that had the potential to improve patient care, thus satisfying this requirement for ensuring that the research is ethical (Polit & Beck 2004:146). There were minimal risks to the ENs and the TBAs. Minimal risk is defined as risks anticipated as being no greater than those ordinarily encountered in daily life or during routine physical or psychological tests or procedures. Qualitative researchers thus must remain sensitive to potential risks throughout the research process (Polit & Beck 2004:144).

Protecting the rights of the institutions

Letters were written to the hospital managers from both hospitals (Annexure D) to request permission to conduct the study, and permission was granted. A copy of the research proposal and a copy of the permission letter from the research and ethics committee of the Department of Health Studies at UNISA were attached (Annexure A). Thereafter permission was obtained from the operational managers to interview the ENs and the TBAs (Annexure D). The participants were interviewed at a time convenient for them so as not to disrupt the routine of the mobile team. The hospitals' names have not been published, and they are referred to here as "Hospital A" and "Hospital B", with one neighbouring institution referred to as "Hospital C". The research results will be disseminated to the managers of the respective hospitals.

Scientific integrity of the research

The researcher at all times strove to maintain objectivity and integrity in conducting this scientific research. This implies the following: adherence to the highest possible technical standards; always indicating the limits to findings; indicating the methodological constraints that determine the validity of such findings; and at the conclusion of a research study, reporting the findings fully, and not misrepresenting the results in any manner. To the best of their ability, researchers should disclose details of theories, methods and research designs that might be relevant to interpretations of research findings (Mouton 2001:240).

4.3.2 Data collection

Data collection focused primarily on conducting in-depth individual interviews with participants who met the inclusion criteria. Interviews involve verbal communication between the researcher and the participant, during which information was provided to the researcher (Burns & Grove 2005:396). During interviews for qualitative studies, the researcher and the participants are actively engaged in constructing a version of the world (Burns & Grove 2005:24). The in-depth individual interview was chosen for its ability to elicit in-depth accounts of the participants' lived experiences, and to therefore achieve one of the primary goals of this study: to obtain a deep, mutual understanding of their lived experiences with caring for MDR-TB outpatients.

The in-depth individual interview allows flexibility and makes it possible for researchers to follow the interests and thoughts of the participants (Holloway & Wheeler 2010:89). Van Manen (1990:64-65) provides suggestions for guiding a phenomenological interview to produce rich descriptions of the experience under study, stating that one should:

- Describe the experience from the inside, as it were, almost like a state of mind: the feelings, the mood, the emotions.
- Focus on a particular example or incident of the object of experience: describe specific events, an adventure, a happening, a particular experience.
- Try to focus on an example of the experience which stands out for its vividness or as it was the first time.

- Attend to how the body feels, how things smelled, how they sound, etc.

Holloway and Wheeler (2010:352) describe three advantages of interviews: they can be a flexible technique that allows the researcher to explore issues in depth; they provide mechanisms to ensure that questions are understood clearly by the participants, and in this way can enhance the validity of the research; and they provide opportunities for the researcher to seek clarification of meaning from the participants. There are, however, also various disadvantages to using interviews as a method of data collection. Holloway and Wheeler (2010:352) caution that individual interviews can be time consuming and costly, that power dynamics can affect the content of the data collected, that researchers can introduce bias into the interview, that researchers therefore need specific interview skills to collect quality data, that research safety can be an issue, and that researchers may collect powerful data that affects them personally.

The researcher conducted the interviews and the research participants responded freely in narrative form, using their own words and thus sharing their own perspectives with the researcher. Questions were not asked in a pre-planned and rigid manner. They were also not raised in a predetermined sequence, but the researcher ensured that all relevant topics were covered and that the research focus was kept in mind. The researcher also probed the responses to encourage participants to elaborate further upon their responses where additional information was required or where responses were vague.

The in-depth individual interviews were conducted in an office at the selected institutions. These offices were situated away from the MDR-TB wards, which offered privacy and protection against possible interruptions. The room was adequate for recording the interview. The interviews took place at a time most suitable for the injection team (in the mornings before normal working hours) so as not to disrupt their normal routine.

4.3.2.1 Data collection process

The interviews were tape-recorded, and were transcribed by the researcher word for word as soon as possible, in order to strengthen the credibility of the research (De Vos, Strydom, Fouché & Delport 2005:299). The interviews were conducted by the

researcher in English. This was followed by reading and re-reading the verbatim transcriptions. As the researcher became immersed in the data, significant statements were identified and extracted. Computer software (Microsoft Office Word) was utilised for efficient data storage and retrieval.

4.3.2.2 Ethical considerations related to data collection

The participants provided written consent to be included in the study. The interviews lasted approximately one hour and were conducted at mutually acceptable times and dates. The privacy and anonymity of the participants and the institutions were respected throughout the research process. The interviews were conducted by the researcher in an office that was away from the wards with the door closed to avoid any disruptions during the interview. The participants had provided a pseudonym prior to the interviews and not their actual names to ensure anonymity and during the interviews the pseudonyms were used.

4.3.3 Data analysis

Qualitative data analysis occurs concurrently with data collection, and therefore the researcher attempted to simultaneously gather, manage and interpret a growing set of data. A researcher's goal is to obtain authentic insight into the participants' experiences (Burns & Grove 2007:376), and data therefore includes the shared interpretations of the researcher and the participants. During interpretation, a researcher offers his or her interpretation of what is occurring. As the study progresses, relationships among categories, participants, actions and events begin to emerge (Burns & Grove 1999:370). Interpretation involves going beyond the descriptive data, and attaching significance to what was found, offering explanations, drawing conclusions, extrapolating lessons, making inferences, building linkages, attaching meanings, imposing order and dealing with rival explanations, and disconfirming cases and data irregularities as part of testing the viability of an interpretation (Patton 1990:423).

Data analysis requires that researchers dwell with or become immersed in the data. The uniqueness of each participant's lived experience must be preserved while permitting an understanding of the phenomenon under investigation. This begins with listening to participants' verbal descriptions and is followed by reading and re-reading the verbatim

transcriptions to ensure accuracy, and to come to a better overall understanding of each participant's experience. As researchers become immersed in the data, they may identify and extract significant statements (Streubert Speziale & Carpenter 2011:92).

Descriptive phenomenology provided the framework for this study as it is aimed at describing and gaining a rich understanding of the lived experiences of the MITs. Giorgi's method of data analysis was used, which involves the following steps (Giorgi 1985:19).

- Reading the entire description of the experiences to get a sense of the whole.
- Re-reading the description.
- Identifying the transition units of the experience.
- Clarifying and elaborating on the meaning by relating constituents in the concrete language of the participant.
- Transforming concrete language into the language or concepts of science.
- Integrating and synthesising the insight into a descriptive structure of the meaning of the experience.

Giorgi situates himself within the perspective of the French Existential Phenomenological philosopher Merleau Ponty, who thinks that phenomenology is best understood in the light of the phenomenological method, which he says has four principal characteristics: it is descriptive, it uses the reduction, it searches for essences, and it is focused on the intentionality. Giorgi takes these characteristics as the basis of his work and method (Giorgi 1985:42-43).

The first characteristic refers to the idea that the analysis and interpretation has to follow the concrete and naive description given by the participants instead of giving an explanation from the theoretical standpoint of the researcher. The phenomenological method should be descriptive because the phenomenological researcher wants to avoid any kind of premature analysis or explanatory constructs (Giorgi 1985:47). The second characteristic, the reduction, refers to the idea of taking the meaning of any experience exactly as it appears or is presented in consciousness Giorgi (1985:48) emphasises this point when he affirms, "whatever presents itself to consciousness should be taken precisely with the meaning with which it presents itself, and one should refrain from

affirming that it is what it presents itself to be". The third characteristic is the search for essences, in which psychologists look for the invariant and unchangeable characteristics of the particular phenomenon under study. Giorgi clarifies that psychology is very interested in both essences that are context related and meaning structures that are situated in specific situations (Giorgi 1985:50). Finally, the fourth characteristic is the notion of intentionality, which refers to the intentional act by which every human being is related to the world and objects. The intentionality is placed in the human consciousness, which, in turn, means that consciousness is always consciousness of something.

However, before following these steps it is necessary to clarify that, the researcher has to read and reread the interviews in order to catch the sense of the whole of it, trying to understand the meaning of the experience in terms of the standpoint of the participants, and not in terms of the researcher's theory about the topic under study. Then, the researcher has to follow the experience of the participants looking at her/his intentionality, instead of putting her/his own intentionality in the experience of the participants.

In this study the entire description is read to get a sense of the whole. The only goal here is to understand the language of the describer in order to grasp a sense of the whole of the participant's experience. Giorgi (1985:11) comments, "the general sense grasped after the reading of the text is not interrogated nor made explicit in any way. Primarily, it serves as a ground for the next step".

This is important, as phenomenology is holistic and focuses initially on the "Gestalt", that is, the whole. Once the Gestalt has been grasped, researchers attempt to constitute the parts of the description, to formulate and differentiate between "meaning units" — as the parts are labelled (these parts have to be relevant) — and to centre on the phenomenon under study. It is important that these units are not theory laden, but that the language of everyday life is used to describe them. When the relevant parts of the interview have been illuminated, the researcher actively transforms the original data and expresses the insight that is contained in them, and highlights common themes, which are illustrated by quotes from participants. Giorgi advocates making the implicit explicit, and using a concrete situation as an example to demonstrate a theme or insight. The researcher integrated the transformed meaning units into a consistent statement about

the participants' lived experiences across individual sources. This is called the structure of experience. In other words, it is the essence of the experience (Holloway & Wheeler 2010:223). Refer to section 5.3 for formulated tables on experiences.

4.4 MEASURES TO ENSURE TRUSTWORTHINESS

To enhance the trustworthiness of this research, Marshall and Rossman (1995:201) observe that all research must respond to canons that stand as criteria against which the trustworthiness of the project can be evaluated. Lincoln and Guba (1985:290) propose four alternative constructs that more accurately reflect the assumptions of the qualitative paradigm: credibility, transferability, dependability and confirmability.

4.4.1 Credibility

Credibility refers to the extent to which those who read a research report can believe and accept the research findings to be true (Lincoln & Guba 1985:301). One of the best ways to establish credibility is through prolonged engagement with the subject matter. Prolonged engagement is essential for building trust and rapport with the participants, which in turn makes it more likely that useful, accurate and rich information will be obtained (Polit & Beck 2004:430). The researcher had been working with the mobile injection programme since the inception of the mobile teams. Bracketing was therefore applied (see sections 4.2.1.1 and 4.2.1.2).

Another way to confirm the credibility of findings is to see whether the participants recognise the findings of the study to be true to their lived experiences. These activities are called a member check (Lincoln & Guba 1985:314). The member check, whereby data, analytical categories, interpretations and conclusions are tested with participants from whom the data was collected, is the most crucial technique for establishing credibility. If researchers are to be able to purport that their reconstructions are recognisable to audience members as adequate representations of their own realities, it is essential that they be given the opportunity to react to them (Lincoln & Guba 1985:314; Polit & Hungler 2004:433).

The purpose of this procedure was to have those people who have lived the described experiences validate that the reported findings represent their lived experiences

(Streubert Speziale & Carpenter 2007:38). The researcher did member checks with the participants' feedback. A summary of the interview was given to the participants for approval to ensure that data had been correctly stated and that nothing had been added or deleted. In this way, data saturation became more obvious. The researcher met individually with each participant to provide them with a summary of the interview for approval, and to ensure that the participant recognised the findings of the study to be true to their lived experiences, that data had been correctly stated, and that nothing had been added or deleted. The participants checked categories that emerged from the data, and after the themes were finalised the researcher discussed the interpretation and conclusions with them.

The in-depth interviews yielded data that resulted in thick descriptions of the lived experiences of ENs and TBAs at the two hospitals in Ugu District. The research participants' lived experiences were described, including their emotions, thoughts, perceptions, meanings and interpretations.

4.4.2 Dependability

The dependability of qualitative data refers to the stability of data over time and over various conditions (Polit & Hungler 1995:430). The criterion of dependability is met once researchers have demonstrated the credibility of the findings (Streubert Speziale & Carpenter 2007:49). The transcribed interviews and data analysis process were scrutinised by an external reviewer, namely the supervisor. The study was found to be dependable as the researcher had not encountered any changing conditions in the phenomenon chosen for the study, as well as no changes in the design was created.

4.4.3 Transferability

Transferability refers to the probability that the study findings have meaning to others in similar situations (Streubert Speziale & Carpenter 2007:49). The researcher provided a rich and thorough description of the lived experiences of the teams in narrative form. Should other health districts implement mobile MDR-TB injection teams, then the findings in this study and recommended guideline may be utilised.

4.4.4 Confirmability

Confirmability is a process criterion. Researchers document the confirmability of their findings by leaving an audit trail, which is a recording of activities over time that another individual could follow. The objective is to illustrate as clearly as possible the evidence and thought processes that led to the conclusions. Doing so meets the criterion of confirmability (Streubert Speziale & Carpenter 2007:39). In this research, confirmability was ensured by establishing an audit trail through keeping the interview transcripts, data reduction and analysis products, materials relating to intentions and dispositions, and drafts of the final report.

4.5 CONCLUSION

This chapter has described the research design, research method and data analysis, with an emphasis on Giorgi's method of data analysis and on measures to ensure trustworthiness.

CHAPTER 5

ANALYSIS, PRESENTATION AND DESCRIPTION OF THE RESEARCH FINDINGS

5.1 INTRODUCTION

In the previous chapter the research problem, method and design were discussed. This chapter presents the research findings. The purpose of this phenomenological research study was to promote the functioning of the mobile injection team by designing and recommending an MIT guideline based on the lived experiences of the team members.

The following research questions were formulated in order to achieve the purpose of the study:

- What are the lived experiences of the MDR-TB mobile injection teams in Ugu District?
- What type of MDR-TB injection team guideline should be recommended?
- What support do the MIT need?

5.2 DATA MANAGEMENT

Data were collected using census sampling from four ENs and three TBAs working at the selected MDR-TB hospitals in KZN, through individual interviews. Census sampling involved selection of all participants from the MIT that met the eligibility criteria. The participants were selected based on their eligibility criteria as explained in Chapter 4 (section 4.3.1.3) of this study and all MIT members were eligible for the study. The interview dates and times were arranged with the participants prior to the data-collection dates. The interviews were conducted in the mornings before the teams left the institutions, in order to avoid disrupting their normal working routine. The participants provided written consent to be included in the study. Separate interviews with the seven participants were conducted by the researcher at mutually acceptable dates and times in a private office away from the main MDR-TB wards, and each interview lasted approximately one hour. Confidentiality was maintained by replacing the names of the

participants with their designations, and the hospital's names with "Hospital A" and "Hospital B" (with a neighbouring hospital referred to as "Hospital C").

The researcher's central question was: "What are your experiences in the Ugu District MDR-TB mobile injection team?" During the interview the researcher asked the following probing questions so that participants could elaborate on or clarify their responses (refer to Annexure G):

- "Tell me more about your experiences in the mobile injection team."
- "Tell me about the challenges that you are faced with."
- "What support is available at your institution for the team?"
- "What are your needs to promote this service?"

Interviews were tape-recorded and transcribed by the researcher verbatim. Interviews were terminated when all seven participants had been interviewed and data saturation had been reached.

5.3 DATA ANALYSIS

Data was analysed using Giorgi's method of data analysis (1985:19). This method involved the following steps:

- Reading the entire description of the experiences to get a sense of the whole.
- Re-reading the description.
- Identifying the transition units of the experience.
- Clarifying and elaborating on the meaning by relating constituents in the concrete language of the participant.
- Transforming concrete language into the language or concepts of science.
- Integrating and synthesising the insight into a descriptive structure of the meaning of the experience.

The researcher formulated a table to facilitate such a method of analysis, and to show the clear progression from natural meaning to concrete language, the language of

science, and revelatory themes (Table 5.1). The following table is a sample of selected comments from selected participants.

Table 5.1: Natural meaning, concrete language, language of science and revelatory themes

NATURAL MEANING UNITS	CONCRETE LANGUAGE: Central theme, i.e. the issue which dominates the unit, in the participants' own language	LANGUAGE OF SCIENCE	REVELATORY THEMES
TBA 2: “here in Ugu District there are lots of people who got MDR”	Lots of people with MDR in Ugu District	Many people are being diagnosed with MDR-TB in Ugu District	There has been an increase in the number of MDR-TB cases in Ugu District
EN 1: “when we started it was a little bit difficult”	Starting was difficult for the participants	Difficulties were experienced at the commencement of the programme	The initiation of the programme was difficult for the participants
TBA 1: “Eh ... I’m experiencing working in a team firstly I’m experiencing eh... eh... teamwork and I’m experiencing eh... education skills like educating people education, educating people about different topics concerning health eh... working with eh... people, sick people eh... ah... and especially teamwork with the team that we are working with”	Teamwork and health education skills	Working as a team and utilisation of skills	Teamwork is important Education skills Working with people (community) Working with sick people

The intentionality of the study is as follows:

- Feeling undervalued.
- Lack suitable resources to do their job; including vehicles, job descriptions, uniforms, rural allowances, road infrastructure.
- Fears experienced; violent patients, gangsters, dogs, snakes, contracting TB themselves, walking alone, vehicles being stolen.
- Communication challenges.
- Service needs.

5.4 RESEARCH RESULTS

5.4.1 Themes and sub-themes

The following is a sample of themes that emerged from the findings of this study (Table 5.2).

Table 5.2: Themes and sub-themes

THEMES	SUBTHEMES
<p>5.4.1.1 Theme 1: Perceptions held by the team</p>	<p>5.4.1.1.1 <i>Subtheme 1.1: Increase of MDR-TB cases in Ugu District</i></p> <ul style="list-style-type: none"> • Teamwork is important • The poor are susceptible to contracting TB <p>5.4.1.1.2 <i>Subtheme 1.2: Initiation of the programme was difficult</i></p> <ul style="list-style-type: none"> • Patients' appreciation of the programme • Patients respond well to treatment • Obtaining patients' correct physical addresses • TB management requires family involvement • Providing health education and counselling • Privacy and confidentiality • Nursing care provided is recorded

THEMES	SUBTHEMES
<p>5.4.1.2 Theme 2: Challenges</p>	<p>5.4.1.2.1 <i>Subtheme 2.1: Lack of appreciation by management</i></p> <ul style="list-style-type: none"> • Lack of support from management during pregnancy • Lack of job descriptions and performance agreements at the beginning of the programme • No rural or danger allowances • Lack of availability of resources • Services must be provided even on public holidays • No uniform allowance for the TBAs • Feeling of being undervalued • Lack of support • Lack of leadership and direction • Distribution of condoms • Delay in compensation for working on public holidays <p>5.4.1.2.2 <i>Subtheme 2.2: Great distances from the hospital</i></p> <ul style="list-style-type: none"> • Access to patients when it is raining • Lack of proper road infrastructure • Vehicles not suitable for gravel roads • Cleanliness of the vehicles is the teams' responsibility • Inappropriate vehicles for the transfer of patients to their homes • Transportation of patients is not allowed • Vehicles not monitored all the time • Travelling is part of the job <p>5.4.1.2.3 <i>Subtheme 2.3: Fear of violence</i></p> <ul style="list-style-type: none"> • Violent patients • Fear of gangsters in the community <p>5.4.1.2.4 <i>Subtheme 2.4: No other services are provided apart from injections and the distribution of condoms</i></p> <ul style="list-style-type: none"> • Inadequate ventilation in rondavels • Family support is important during treatment • Management of contacts • Accepts difficult situations • Exposure to dogs and snakes

THEMES	SUBTHEMES
	<ul style="list-style-type: none"> • Contracting of TB <p>5.4.1.2.5 <i>Subtheme 2.5: Poor socio-economic conditions</i></p> <ul style="list-style-type: none"> • Patients on oral treatment cannot be monitored properly • Lack of treatment compliance • Patients have a right to refuse treatment • Lack of adherence to treatment leads to re-hospitalisation • Attending to patients at their homes is time consuming • Fear of walking alone • The in-service training provided is general and not specific to the outreach teams' services • Many patients allocated to one team • Community assistance <p>5.4.1.2.6 <i>Subtheme 2.6: Communication challenges</i></p> <ul style="list-style-type: none"> • Challenges with communication • Kanamycin ampoules can be a challenge • Changes in the allocation of vehicles in the mornings cause delays • Colleagues scared of contracting MDR-TB
<p>5.4.1.3 Theme 3: Support/non-support</p>	<p>5.4.1.3.1 <i>Subtheme 3.1: Support</i></p> <ul style="list-style-type: none"> • Support from the wards • Training is important • Partnership with NGOs • Meetings are held with managers • Supervisors are helpful <p>5.4.1.3.2 <i>Subtheme 3.2: Non-support</i></p> <ul style="list-style-type: none"> • Washing of vehicles • Staff safety • Lack of further development
<p>5.4.1.4 Theme 4: The needs in promoting this service</p>	<p>5.4.1.4.1 <i>Subtheme 4.1: Health education of the community</i></p> <ul style="list-style-type: none"> • Support provided for patients experiencing side effects

THEMES	SUBTHEMES
	<ul style="list-style-type: none"> • Diagnosing patients is faster with GeneXpert <p>5.4.1.4.2 <i>Subtheme 4.2: Team:patient ratio</i></p> <ul style="list-style-type: none"> • Additional teams are needed to prevent the spread of TB • Request for two additional nursing staff <p>5.4.1.4.3 <i>Subtheme 4.3: Needs for this service</i></p> <ul style="list-style-type: none"> • Request for training • Specific types of vehicles

The researcher read through each interview and obtained a sense of the whole. An important and initial aspect of data analysis is phenomenological reduction, which involves bracketing. Bracketing is essential since it is only once this has been accomplished that more specific investigations can begin. The reality of the world of the mobile injection team was neither confirmed nor denied. It was bracketed. This was the stance which was adopted for the purposes of the study and was maintained as far as possible throughout the analysis of the data. The researcher conducted each of the interviews personally, which helped enormously to “get a sense of the whole”. In addition, the researcher read each transcript several times to gain a deeper familiarity with the words and the order in which they had been spoken. Obtaining a deeper familiarity with the participant’s words assisted the researcher in understanding and presenting the lived experiences of the MIT. This proved to be useful at a later stage, when handling the large amounts of data and associated paperwork. Care was taken throughout to ensure that the researcher engaged with the words of the participants, with no attempt being made to interpret the meaning.

The first step of the analysis was to try to determine the natural meaning units as expressed by the participants. This stage was achieved by reading and re-reading the transcripts, and then identifying areas of the interviews which highlight the participants’ lived experiences in relation to the phenomenon under investigation. Once the central meaning units, as expressed by the participants, had been established, they were

expressed using concrete language, after which they were expressed using scientific language, and then as revelatory themes, as shown in Annexure G.

5.4.1.1 Theme 1: Perceptions held by the team

The following sub-themes and categories emerged from this theme:

5.4.1.1.1 Subtheme 1.1: Increase of MDR-TB cases in Ugu District

Participants indicated that there had been an increase in the number of MDR-TB cases in Ugu District. Team members stated that many people have been diagnosed with MDR-TB:

EN 1: “here in Ugu District there are lots of people who got MDR.”

- **Teamwork is very important**

Participants felt that going out together and supporting each other had taught them the importance of teamwork.

TBA 1: “Eh ... I’m experiencing working in a team. Firstly I’m experiencing eh... eh... teamwork and I’m experiencing eh... education skills like educating people education, educating people about different topics concerning health eh... working with eh... people, sick people eh... ah... and especially teamwork with the team that we are working with.”

- **The poor are susceptible to contracting TB**

The participants indicated that the patients who were attended to by the outreach teams live in deeply rural areas and in poor living conditions and circumstances. Some live in overcrowded homes. These poverty factors contribute to the spread of TB.

TBA 2: “... most of them they are from the poor families ... some of them they are living in a one room maybe four or five of them.”

5.4.1.1.2 *Subtheme 1.2: Initiation of the programme was difficult*

The programme commenced with only two patients. The participants revealed that directions to their homes had to be obtained by interviewing them in the wards.

EN 1: “When we started it was a little bit difficult ... but we started with say about two patients from who were discharged from the hospital ... so we interviewed them, so we got the directions and then we started the programme.”

TBA 1 “... if it’s a client for the first time ... we see them in the hospital before they are discharged they are leaving tomorrow...”

- **Patients’ appreciation of the programme**

The participants indicated that patients seemed to appreciate the mobile injection programme, as they no longer had to travel by taxi to the clinic. This reduced the patients’ travel costs and saved them time and energy, as receiving treatment at home meant that they no longer had to stand in long queues for the entire day to receive treatment.

EN 1: “They were happy because they getting their treatment closer to home than going to, travelling to the clinics, standing in queues and maybe they are not strong enough so they appreciate the programme ...”

TBA 3: “Patients are happy that they are getting treatment at home.”

- **Patients respond well to treatment**

The teams are supposed to inject patients on a daily basis as prescribed by the doctor, and to provide health education. Based on their monitoring of the patients, the teams deemed the MDR-TB treatment to be effective.

EN 3: “... We inject the patients and the patient are responding well with the treatment and when we give them health education they do what we are telling them to do. What I learnt out there is MDR treatment is working cos immediately the patient takes the medication, the patient gets well. The patient when he takes

the medication, well, she gets healed or he gets healed ... cos MDR treatment can do wonders.”

- **Obtaining patients’ correct physical addresses**

Most of the patients live in deeply rural areas with poor road infrastructure and no street or road names. The participants emphasised that obtaining the correct directions was therefore very important for ensuring access to the patients and the continuation and monitoring of their treatment.

EN 1: “Sometimes they give wrong directions that is why it is preferable to take them physically to their home ...”

TBA 3: “Patients give us incorrect addresses then we have to look for the patient’s house.”

- **TB management requires family involvement**

Participants expressed the importance of working with the patients’ families. Therefore, health education of the family commences on the day the patient is taken home from hospital.

EN 1: “So we explain to them we have to gather the family there, give health education everybody on the same page that’s when it happens and all that stuff so when we arrive they call everyone that is in the family sit down with them. We have a talk, health education talk, talk about MDR-TB, HIV, oh all the relevant health education.”

EN 2: “The relatives they always good yah because I think they understand cos we did do health education to them before. For the first day starting the injection to the patient if we did eh and health education they don’t have a problem ... Yes. Instead they helping us get the patient. They helping us if the patient refusing to get injections, they helping us, the family they do help us ... On a daily basis or for the first thing the whole family we start the meeting with the health education so that they can understand what is happening then asking the patient, the patient, is observing the patient that there is no side effect and checking the

treatment, the oral treatment because they do have oral treatment at home ... Yes sometimes like the neighbour will come and ask the questions like how much are we safe, if what we have to do to make ourselves safe, like sometimes, we get some of the patients like at school, like at work, going to school, attend the patient at school some of the patients take to work, they do ask how much they are safe and what to do to protect themselves.”

TBA 1: “Ehhhh ahhh I, I, I collect family you are visiting and giving health education to them ehhh health education differently in daily basis. On the other day I talk with ehh like TB I educate them with TB: how can they prevent themselves in contracting TB and ehh make sure that the patients that we are visiting is taking TB treatment, their treatment correctly ... And I write down what I’ve done to that family and give them ehh ehh that ehh form and sign that I’m educating them and other thing I, I, I, I, I ask the patient that everything is going well and they take their treatment correctly and daily.”

EN 3: “Yah, the first day we take the patient to the community or to the family. We explain to them that the patient is now free from, it’s what can I put this, they can stay with the patient now, yah he’s not infectious now so they understand. We teach them that he can or she can stay with them. We health educate, we make sure that they clear ... Yes, we support them and health educate them that if you don’t inject then, if you don’t take your treatment you’ll die and then (laugh) and they become scared and they say ‘okay I’m injecting now, okay that’s fine your’l can do your job’, yah ... Yes, cos I make sure that I get along with them and I told them, I tell them look after the patient to encourage the patient so that she or he will get well.”

EN 4: “We have to involve them, the whole family even then, even if he got he also gonna need support of family support so we might, so we need to educate the family as well.”

- **Providing health education and counselling**

In their responses the team members emphasised the importance of patients living a productive and healthy life.

TBA 3: "... as TB Assistant give them health education also doing counselling. It depends on the condition of the patient because some of patients they didn't disclose, their, they didn't disclose their status like whether in most cases they are taking MDR-treatment also they are HIV positive, you understand, so I have to do counselling if there is a need. Even if the patient is not, is not HIV positive due to isolation and discrimination within the family, I have to educate them to tell them to do ventilation because they can't say if somebody is infected with MDR should stay alone, should be far away from other people, instead they have to be given, but the patient make sure that he is near the airway you understand, I'm doing things like that. I have to educate not the patient only the whole family. They used to ask questions, even the patients sometimes used to report to us say that 'they are discriminating me, they want me to have my own plate', you understand and things like that. Also I tell them that beside MDR thing to exercise also to make garden, lots of exercise, yah for nutrition purposes."

EN 3: "We give them health education, ahh we inject them, we teach them how to plant, how to plant vegetables, we teach them how to take the treatment correctly and what we are I've learnt about the patient that ahh they are responding well everything that we told them they do."

TBA 2: "I educate them like telling them because there is someone here in this home who got TB, make sure early in the morning open the windows and clean up."

EN 4: "Okay, we first greet the patient talk to, educate the patient if it's a new patient we gonna, we gonna ask questions. We gonna talk to the whole family or whoever is available at that time and then we gonna have to screen them. I give sputum mugs to them, tell them how to cough and then we come and collect them. We basically give them health education every now and then about the importance of taking ehh the tablets, the dangers of defaulting and ventilation. We educate them on different topics but we change them every now and then so that it doesn't become boring and sometimes we actually educate them and tell them to tell us about that certain topic so that we will know that if the patient really understands what we always teaching and if that patient really practise what we always educate them on."

- **Privacy and confidentiality**

The participants expressed the need to ensure the privacy of the patients during treatment. This also requires patient information to be kept confidential.

EN 1: “We are, we ask for a place that room, special room that we are going to work with it to use. The patient will identify the room then give health education, opening of windows, ventilation, hygiene, hygiene is most important knowing in rural areas.”

- **Nursing care provided is recorded**

All nursing care rendered during a patient interaction is recorded in the patient’s file. This serves as evidence of the quality of nursing care provided to the patient. The administering of injections is recorded, the condition of the patient is noted, and any changes in the patient’s condition or side effects experienced by the patient are recorded.

EN 3: “We record everything that we do, we record. We record whether the patient taken the medication. When we inject, we record patient is injected. We, we record the patient that he’s well today everything we do we record when the ... patient is changing like when he is having a side effects we record ...”

5.4.1.2 Theme 2: Challenges

The following sub-themes and categories emerged from this theme:

5.4.1.2.1 Subtheme 2.1: Lack of appreciation by management

TBA 1 stated that the work done by the team members is not appreciated by management. When there is only one patient to be seen and their work for the day has been completed early, it sometimes appears to members of the management team who see them that they are not doing their work.

TBA 1: “But it seems as if the job that we are doing is not appreciated eh eh eh management of the institution because sometimes when we like, if we ... we left with one patient so on that day we finished early to inject patients because we have one patient. If one of the management see us in the areas where we go or where we are, it seems as if we are not doing anything because we finished early working ...”

The team members stated that they are overworked and that management does not fully appreciate the fact that the team must go out daily from Monday to Friday to administer injections, regardless of the weather. When it rains, the poorly constructed roads quickly become muddy and slippery, and it is easy for vehicles to get stuck. The transport officer has stated that the mobile injection teams should not take their vehicles into muddy areas because the vehicles will get stuck, yet management insists that the teams must go out each day. When vehicles do get stuck, then the community members have to be asked to assist, as no assistance is provided by the transport officer or management.

TBA 1: “I think we are oppressed sometimes, somehow, somewhere because if, if we are going out like if it’s raining ehh the, the, the management insist that the patients must inject, must get injections daily ... hence the transport officer eh said ehhh if, if don’t go to the muddy area or where you will get stuck cos there is no towing the vehicle in the institution so we end up confusing which is which ... if you go and get stuck you have to ask some people in that area and push the car and ... you supposed to give them money.”

- **Lack of support from management during pregnancy**

TBA 1 believed that travelling on the bumpy gravel roads in the rural areas caused her to have a miscarriage. This was another example of how the team members felt discouraged by management’s lack of understanding or appreciation of their working conditions.

TBA 1: “... I lost my pregnancy because the areas we are going because it’s very, very rural areas where we are going and there is a bumpy roads and the road structure is very, very bad so I end upping get a miscarriage. I think it’s through the job that I was doing at that time.”

- **Lack of job descriptions and performance agreements at the beginning of the programme**

There was fear of the unknown at the beginning when the team was unsure of what the job entailed, as they had no knowledge of the work to be done and there was no orientation provided for the programme. There were no job descriptions or performance agreements in place, and there was no prior information to draw on, as this was a new service being provided to the patients.

EN 1: "I think we didn't know what to do ... we didn't know what to expect it was a new programme so there were no prior information about it."

- **No rural or danger allowances**

The team indicated that they are faced with many challenges and dangers when it is raining, but no danger allowance is provided.

TBA 1: "There is mud and because we working in very, very deep rural areas eh where access to patients is a challenge to us, if it's raining ... With no rural allowance ... we putting our lives in danger with no any allowance ..."

- **Lack of availability of resources**

The participants indicated that there were not enough materials and supplies. Necessary equipment like temperature probes and HB (haemoglobin) machines were not provided, even though the team members sometimes encountered ill patients. The use of a stethoscope was not understood by the EN as there was no stethoscope to check the blood pressure of patients. Patients have to be transferred to their local clinic for basic treatment and for further management due to inadequate supplies and equipment.

EN 2: "We transfer them to the clinic because we don't have enough material ... what we have is injection sets injection, syringe, needle, injection, cotton wool, hibitaine spray and the thing that we have is ehh the machine what I can say ..."

glucose test ... and ... a stethoscope. I don't see for us what is the use of a stethoscope. We don't have ehh temperature probe, No HBs. And we can have a patient like that. They have to be checked their BP regularly so they just go to the clinic."

- **Services must be provided even on public holidays**

Outreach services are provided five days a week from Monday to Friday. Should a public holiday fall during the week, then the services still have to be provided, and team members are required to be away from their children and families.

TBA 2: "They want to stay with me but since I'm working (on public holiday) I supposed to go to work."

EN 4: "Christmas I'll be working with my patients."

Services must be provided daily, from Monday to Friday. When it rains and the roads are impassable, and if services are not provided, reports must be submitted, with statements written to explain why patients were not given their injections. The ward matrons discipline the team members if their patients are not injected, and the transport managers get angry with the teams if their vehicles get stuck. The participants stated that they therefore carry cooler boxes and walk through the rain and mud to patients' homes, rather than having to face such criticism or potential disciplinary action, even though they are not provided with protective clothing.

TBA 3: "If you couldn't be able to go there, we write statements to Matron why we didn't go there because it's raining. We told them that it's raining of which we won't be able to see those patients. Then one day Matron said we have to go there and stuck and phone and say you stuck. You can't say you didn't see that road so if you can't see patients then Matrons they fight with us. If you go there if you stuck transport management is fighting with us, so for the sake of our kids we have to go there and hear that. We have to walk, yes carrying cooler box, injection bucket, sharps bucket and all things like that, big as well. You have to go there or if we don't make it, we write statements to management. Also if we stuck we write statements to transport officer. Yes I'm expected to do the work if I can't

go to work I write a statement. If I ask for an equipment like for protective clothes as I'm driving there nobody is willing to be on my side."

- **No uniform allowance for the TBAs**

Protective clothing is provided for the team at Hospital A but not at Hospital B. The ENs receive a uniform allowance but not the TBAs. When the TBAs asked to be allowed to go and purchase protective clothing during working hours, management refused their request. Although the TBAs do not get a uniform allowance, they are expected to wear uniforms at Hospital B, and if they are not in uniform, then they have to write statements to the Matrons to explain why. They therefore have to purchase uniforms at their own expense.

EN 1: "We have to provide yourself because we did enquire about that protective clothing ... but they say that it is nurses then that we say uniform allowance."

TBA 2: "At the moment no, nothing because even now we waiting for raincoats. On Tuesday it was raining, heavy rain."

TBA 3: "We as TB Assistant we don't get, you understand. One day raining, it started to rain while we were here at work; we asked the management to permit us to go to town to buy raincoats with our money. They refused to allow us to go there to buy raincoats. They wanted us to go there without umbrella, without raincoats because we as TB Assistants we don't get uniform allowance. Even now I'm wearing uniform; I don't suppose to wear uniforms. I have to wear whatever that I want to wear because I don't get uniform allowance. Instead I will write a statement if I'm not wearing uniform ... I have to buy with my own money."

- **Feeling of being undervalued**

A participant indicated that he does not feel valued by management. He feels like a doormat that is walked upon all the time.

TBA 3: "So bad like they don't value the work that I am doing, like sometimes I feel like eh a doormat. I used to say if you are uneducated in most cases people who are educated they take advantage of you."

- **Lack of support**

The participants stated that when the teams have faced problems or challenges, they have communicated with the Operational Manager, who reports the matter to management. There have been delays in responses from management, and when no feedback is given to the team then the matter lapses. The teams have requested that management accompany them to see the circumstances and conditions that they face, but there has been a lack of management support.

TBA 2: “They don’t give us the support because you also ask to go with us when you are going to the, when you are going to the patient then but since, since, since I’m started here in June nothing accompanied us when we are going to the patient.”

TBA 3: “Actually I can’t say there is support as such except the department that I’m working in because colleagues it should be Operational Manager they understand the situation that we face whatever matter that you report to them, they report to management sometimes it used to delay from the management because management is the umbrella of everything in the hospital so if it’s up there I can report to my Operational Manager and forward the matter to them. If they don’t take anything further then it will lapse like that.”

- **Lack of leadership and direction**

There is no specific supervisor for the outreach team at present. Previously there was an Operational Manager who used to manage the team but she has since left and has not been replaced. The participants would like a professional nurse to be specifically allocated to supervise the outreach teams.

EN 1: “Yes, we have an OPM here. She was quite enthusiastic about the outreach when we have problems in terms of assistance she was helpful but I think in future it will be because I think the supervisors got our department got eh the ward and all that stuff I think if, if can be maybe professional nurse who will be there just to specifically to support the outreach I think it will be, it will be much better that can be improved.”

EN 2: “I think eh they only just ehh leave us here just go out and work ... Actually our Operational Manager right now worked last month so right now we don’t have, I think right now we report to the OPM. Sometimes this is the truth but right now we don’t have an OPM.”

- **Distribution of condoms**

On days when there are only a few patients to be seen, and if they are not under pressure with other tasks, the teams distribute condoms to taverns and stores on the way to patients’ homes. This has become part of what the team does.

TBA 1: “... we see our patients, go and inject them, especially if we are passing through places like taverns and stores we, we, we give condoms to stores or taverns when patients are few.”

- **Delay in compensation for working on public holidays**

The participants indicated that they are required to work on public holidays but that there are delays in the payment of public holiday claims. They feel that they need to be compensated timeously for the holidays worked.

TBA 3: “Also like if we work on public holidays to make sure that they pay us in time as they supposed to. Unlike to work on public holidays and not getting paid.”

“To pay us on time because as we work on public holidays because we are straight shift. We don’t supposed to work on public holidays instead they have to regard us as overtime but sometimes we follow them with letters asking for the payment so if they can pay us properly.”

5.4.1.2.2 Subtheme 2.2: Great distances from the hospitals

The outreach injection teams often have to travel more than 90 kms from Hospital B as its administrative area is extensive. A very large area initially had to be covered because services were only provided from Hospital B, but now there is a team from Hospital C which meets them halfway.

EN 1: “Cos we are going up to Harding side, yeah, but they at the beginning it was ... it was no team in [Hospital C], but now because we have a team in ehh [Hospital C] hospital so we are meeting each other halfway, so it’s better now.”

“The patient that is most far maybe it’s about eh ... 60 or 50 kilometres from the hospital.”

“... cos we were going up so it was at the beginning yey it was a lot, the patient that was most far was about 90 kilometres from [Hospital B] and it’s not the only patient. You via along, you go patient ... you start from Izingolweni part go up to, up to Ngeli, there to the west side it was, it was in the beginning it was far.”

TBA 3: “On daily basis I am driving plus or minus 450 kilometres because our patients are all over ... we used to start from Port Edward to Harding and close to Sisonke municipality the whole area, you understand ... Yes, when you go to Kwanyuswa, Lake Eland also I go to Qobeni, Kwamache and go straight to Gcilima when you go to Port Edward so they are scattered all over.”

Certain areas are not accessible by vehicle at all, and the teams have to walk as far as 10 kilometres in order to reach a patient’s home.

TBA 3: “... sometimes you have to park that vehicle and walk plus or minus 10 kilometres to reach the patient because even the car won’t be able to go to the premises whether it’s raining or not raining.”

EN 2: “We have to walk yes distance yes sometimes about eh more than 500 metres or close to a kilometre, just walking under the under the raining weather.”

- **Access to patients when it is raining**

When it rains, the roads often become muddy and impassable, and as a result patients do not get their injections.

EN 2: “... rain is falling, is falling for four days then for the four days the patient is not getting injections.”

TBA 1: “Eh eh, eh like if it’s raining ... There is mud and because we working in very, very deep rural areas eh where access to patients is a challenge to us, if it’s raining.”

- **Lack of proper road infrastructure**

In the deeply rural areas, there is no proper road infrastructure. The roads are bumpy and the vehicles supplied are unsuitable for such bad roads. If it rains, these vehicles often get stuck. At times the teams have to walk to patients’ homes because there are no roads at all. Various risks to personal safety are associated with walking in these areas, and so both team members leave the vehicle and walk up the hill to the patient’s home.

EN 1: “Mostly on gravel road (laugh) 90–95 % of our roads are gravel roads. I think only 5 % still on the national road, the N2. Once you branch to the patient, it is gravel road. Some you cannot call them gravel road you just travel on the grass.”

TBA 3: “It’s a big area you understand, so now I know I can’t reach that patient because sometimes you have to park that vehicle and walk plus or minus 10 kms to reach the patient because even the car won’t be able to go to the premises whether it’s raining or not raining ...”

EN 2: “... the car that we use it’s when the rain is falling very much so you driving on the gravel so we get stuck on the gravel road you can’t go anyway you can’t get to the patient ... Sometimes we have to leave the car and take a long distance on the way so we may fall in danger again.”

TBA 1: “...especially if it’s raining and I think that we have to get support from our management ...”

TBA 2: “Most of the time yah, I drive on the gravel road.”

EN 4: “It’s not roadworthy and the cars that we are using ai are not 4x4’s. They are just ordinary vans ... We do go on tar but the tar is very short. It’s very short because our actual patients, they live in the farms so the roads there, they not proper. We have to leave the car very far and then walk, even if it means walking

up the hill but the roads they are not nice, especially when it's raining you find that the car can be stuck."

- **Vehicles not suitable for gravel roads**

The team members indicated that the vehicles they are provided with are not suitable for driving in mud, and are therefore useless, as they are powerless. They suggested that 4X4s should be provided, as sometimes they have to drive completely off-road. When it rains the roads become impassable, the patients' homes cannot be reached, and therefore they are not able to visit the patients. Government vehicle regulations indicate that government vehicles are not allowed to be towed by simply anyone when they get stuck. The team members indicated that they have been stuck about five or six times. They have taken pictures and videos on these occasions, yet they expressed concern that management has not adequately acknowledged or understood the bad road conditions. When they do get stuck, nobody from the institution is prepared or willing to go there and help them. They therefore have to request help from the community. The concern that arises then is that should there be any damage caused to the vehicle in the process of being assisted, then the team members would be considered responsible for it.

EN 1: "And the vehicles that we are using, they to put it, they are just useless bakkies. Yes because you can only drive them if the weather is okay. If it's raining even if it is drizzling they don't move on grass. We've been stuck for I don't know for about ten times been stuck on the mud."

EN 2: "Another thing is ehh the car that we use it's when the rain is falling very much so you driving on the gravel so we get stuck on the gravel road you can't go anyway you can't get to the patient. Sometimes we have to leave the car and take a long distance on the way so we may fall in danger again. It's always stuck on the even in, even on the grass when it's wet it just stuck so I think the 4x4 cars will be better. I think since we started like my team since we started ehh the programme 2012 I think maybe more than five or six but so many times we got stuck. Sometimes the community do help us and sometimes we call the transport and they do some means. They try to tow us yeah but on that space the community do very big yes in fact they do help us when we stuck."

EN 3: “Yeah the challenges that we are facing is with firstly the cars that we are going with are not roadworthy, they can’t deal with the, the sand and the mud.”

EN 4: “Is the, the gravel that we going through. It’s not roadworthy and the cars that we are using ai are not 4x4’s they are just ordinary vans. We do go on tar but the tar is very short. It’s very short because our actual patients, they live in the farms so the roads there, they not proper. Even sometimes you can’t even go inside that patient’s house. We have to leave the car very far and then walk, even if it means walking up the hill but the roads they are not nice, especially when it’s raining you find that the car can be stuck, one instance we got stuck cos of the road and the car we using, the van, still didn’t have much power for us so we got stuck but then luckily for us the community came and then they helped us.”

TBA 1: “We are working in very deep rural area, sometimes if it’s raining we can’t go to the, to some patients due to the vehicles that we are using. It is not suitable for the area that we are visiting. Yes this vehicle is powerless. It can’t afford to go to the area that we are going, yes, and the other thing is that we are facing with we are putting our lives in danger ehh of poor road structure just, snake bites and dog bites as I am ... a victim of dog bite. I think we are oppressed sometimes somehow, somewhere because if, if we are going out like if it’s raining ehh the, the, the management insist that the patients must inject, must get injections daily hence the transport officer eh said eh hh if, if don’t go to the muddy area or where you will get stuck cos there is no towing the vehicle in the institution so we end up confusing which is which because we if, if you go and get stuck you have to ask some people in that area and push the car and have you supposed to give them money because we have to go to the patient’s home and inject the patient.”

TBA 2: “The rest are due to cars because sometimes at times you are driving a car which is not roadworthy.”

TBA 3: “Our vehicles are not good enough for deep rural areas of which sometimes we get stuck and we’ve been asking the management to give us at least 4x4 cars of which when it’s raining it’s difficult for us to go and reach all patients especially when it’s raining due to the road. Yes actually several times in such a way that even in my phone also in my videos I have got all the pictures where we used to stuck and when we’re stuck there nobody is willing to go there and help us. Instead we ask the community. Should you ask the community to

come and assist you, you have to be, you will be in for any dent in the car because they say it's government car you must not tow it anybody."

- **Cleanliness of the vehicles is the teams' responsibility**

Vehicles become dirty due to travelling on gravel roads. The participants explained that washing vehicles was the teams' responsibility as there was no-one else allocated to wash them.

EN 1: "We washing the cars. When we started the programme we were washing the cars ourselves when we come back we have to wash the cars in the morning because quite eh ... even in the hospital the most dirtiest cars because they go on gravel roads every day so we were washing ourselves."

TBA 4: "We have to wash the cars ourselves."

- **Inappropriate vehicles for the transfer of patients to their homes**

The teams transport patients to their homes when they have been discharged from the hospital. This is necessary for the teams to see exactly where the patients live. The patients have to sit in the back of a bakkie¹, but this method of transporting a patient is inappropriate.

EN 1: "Sometimes we have to transport them ... Sometimes they come with us we put them in the back of the bakkie ..."

EN 3: "We take the patient from the hospital when the doctor from [Hospital B] discharged the patient we take the patient they, they we took the patient with us then we dropped the patient at home. We take the cell numbers and all that we contact the patients."

- **Transportation of patients is not allowed**

Patients are transported with the teams' government vehicles, even though this is not allowed. The bakkie is too small and inappropriate to transport patients, as it is not an

¹ "Bakkie" is a South African term for a small, two-seater pickup truck with an open rear body and low rear sides.

ambulance and lacks proper medical facilities. When a patient's condition has changed at home, the team informs the doctor, who generally orders the team to bring the patient back to the hospital for assessment and management. In order to assist the patient and to save the patient's life, the team has to bring the patient back to the hospital, even though transporting a patient in a government vehicle is not permitted and could result in a case being brought against the team. There is a physical risk for the patient in being transported in the back of an open vehicle, and a legal risk to the team members.

EN 2: "If the patients they go out and they discharged from the ward, we used to transport them with the government vehicles so we know that if anything should happen we'll be in trouble. If the patient is weak, can't get the transport himself so we just bring him back the, the government vehicle. Actually this is a very high risk that we doing because the cars that we use is ehh we, we using this eh two it's a two seater car so we put them at the back of the van so I know that it is not allowed but sometimes we are forced to do that. But if there is something that is happening it will be our, it will be our responsibility cos maybe we can have the case for that."

TBA 3: "So sometimes he supposed to come back to hospital with those patients of which because the car that we using is just a small bakkie. We have to take the patient and sit at the back of the bakkie. Sometimes they are unable to sit they have to lie down, you understand. Of which transport officer indicated that to take a patient in the bakkies, it's illegal of which you do understand but if the doctor tells us to come with the patient we've got nothing to do because if patient dies, if he died at home we will feel that we are in for it, you understand. You take that risk because the one who is above transport officer told us that okay it's fine you can use the bakkie although it's illegal. Should anything happen, the creator of the programme will be in for it because it was supposed to give you 4x4."

- **Vehicle not monitored all the time**

Government vehicles must be monitored at all times. If the driver leaves the vehicle unattended and something happens to the vehicle, then the driver is responsible and accountable for the vehicle. Because the teams travel into deeply rural areas and do not know the communities, they have to lock the vehicle and walk to patients' homes because not all areas have suitable roads for the vehicle to travel on. Walking alone is

not safe, but neither is looking after a vehicle alone. Therefore both team members go to the patient's home, leaving the vehicle locked. At times the vehicle is visible, but not always, and in these cases the vehicle is not monitored when they walk to a patient's home.

EN 2: "This is a very big challenge because transport policy eh it says you must eh the government vehicle must have someone, because if there is something if we, we can find something stolen from the car, maybe one have to look for the car or we can't go together so one has to go and one has to look for the car because if everything can be stolen in the car it will be a case for us, a big case, so we have to be aware of that yes, yes we have to be aware of that. The car sometimes we do go together if the car will be visible so if we can a little on the basis of that."

EN 3: "Nobody looks after the vehicle when we are gone. Just lock the doors and go to the patient."

TBA 1: "No one, no one look the vehicle."

- **Travelling is part of the job**

Travelling is an inherent requirement of this job. There is a great deal of travelling to patients' homes, as the homes are scattered throughout the administrative area with houses sometimes as far as 110 kilometres apart.

EN 1: "Yah, yah, the travelling there is lot of travelling."

EN 2: "KwaNywuswa, yes, so it can look like there are only seven patients but you travel far away you travel I think per day we use about 250 kilometres, 250 kilometres travelling because of the areas."

TBA 1: "Some of the houses like that cos we are working in the rural area most of the houses we visited houses are very scattered and far from the roads."

TBA 2: "I'm telling the patient see here if you going to SASSA [South African Social Security Agency] or if you going to Dr Lachman inform us so we cannot

drive from [Hospital A] to your house and we can be able to give you a form where a nurse can sign if the nurse is injecting you.”

5.4.1.2.3 *Subtheme 2.3: Fear of violence*

- **Violent patients**

At times the team is faced with violent patients and frightening situations. One participant indicated that a sangoma had tried to hit him with a sjambok and that at another time a patient had been carrying a knife with him. Another participant indicated that the patient released dogs to prevent the team from giving him injections. When they returned to the hospital, this was reported to the doctor.

EN 2: “Sometimes the patients they, if they don’t want if they don’t want injections anymore they just leave dogs for you so that you can’t get in and they can’t get injections.”

EN 4: “That patient didn’t give me ... gave me a hard time cos each and every time we go there maybe he is going to have a knife you see, he wasn’t totally, he wasn’t totally right upstairs if I can say cos you can never know what he can do.”
“The sangoma was not that violent but then she had a sjambok she actually tried to hit me with the sjambok just then I closed the window.”

- **Fear of gangsters in the community**

The team indicated that the job is very strenuous due to the roads that they travel on, the distances that are travelled, the number of patients that have to be seen, and unpredictable weather. They stated that they are not protected as they are exposed to many dangers, which include gangsters in the community. When they see the gangsters the team members continue walking or run away from them.

TBA 1: “It’s a very strenuous job that we are doing because we are not protected at all. We exposed many dangers out there to the community cos there are gangsters there in the areas that we are working we are visiting yes ... we continue walking, run away from that gangsters.”

5.4.1.2.4 *Subtheme 2.4: No other services are provided apart from injections and the distribution of condoms*

The community does not understand why the team fails to assist when there are other medical emergencies. People see a nurse and a government vehicle in the community and expect to receive help. When people request assistance, the team has to tell them that they give injections only. The bakkie does not have any first-aid kit to assist in times of emergency. The team does, however, distribute condoms when patient numbers are low and they are not under time pressure.

EN 2: “Aio no. People are shouting ‘hey you nurse, come here, get me injection’ but it’s like cursing that thing that will never go will make you uncomfortable. ‘Hey you nurse this, hey you nurse this’, because we are just working in the community. Like maybe they were fighting or maybe someone is injured, maybe someone needs, how can I say, they will say here is the government car help us but the only thing we have is the injection for kanamycin for MDR so we can’t do anything and this car they need we need maybe we need to call the ambulance because we can’t just get someone who is injured so if he dies here, it will be, we have to answer some questions so we can’t do that. Yes, so they saying ‘why you not helping us, you are useless. Here is a person is, is injured you can’t help here, you are useless’. I remember the other day we were passing the accident so there were police there SAPS there so they stopped us and say for help and we say no we got no help. They say ‘your’l are useless’ ... well sometimes people see us useless.”

- **Inadequate ventilation in rondavels**

Health education is provided for patients in order to advise them on things such as keeping windows open and having adequate ventilation at home, but most patients in deeply rural areas live in rondavels. Some rondavels do not have windows, and in the ones that do have windows, the windows are often kept closed.

TBA 3: “Some of them they stay in rondavels whereby there is no window. Some of them there are windows in their houses but stays unopened; unable to open because you see some houses with no plan whereby they just put a window for

the light to come in where they push away the curtain not for ventilation, yes, it depends.”

- **Family support is important during treatment**

At times the teams do not feel welcome by the patients’ families. Family members sometimes do not support the patients, and discriminate against them, because the family members do not understand the patients’ condition and changes in behaviour. Family members also sometimes fight with the patients. The families therefore require health education in order to encourage family understanding and support for the patients.

TBA 1: “(laugh) sometimes if, if you visit the patient, you see that this family is not eh eh I am not welcomed in this family but because we have to do the job then you end up asking a patient to talk in the family that eh eh we our, our mission is to give them eh eh to give that patient eh a better life and to get better life ... Even if you came, you see that they are not supporting the patient. Yah some of them there is a discrimination. We try to talk about to, to, to, to, to explain that the this kind of TB is cured is curable so they have to support the patient in order to get better.”

EN 4: “Some families are not supportive. Towards the patients, some families will just don’t care because sometimes when a patient, when the patient is sick they seem to be very moody, so sometimes the family they do not understand that this patient is sick so even if you become, there must at least tolerate him until he finishes his medication. He is gonna be alright eventually so you find that sometimes the family just fight a lot. They thought okay wow I cannot sit in the same room with this person cos he got TB. But with educating them they started they start understanding TB ... They become co-operative. They need family support a lot because I believe every sick person needs family support whether it’s TB or family support is always for, for recovering of the patient for the patient to recover.”

- **Management of contacts**

Screening of the family and children must be done as part of contact screening. Sputum samples are collected and sent to the laboratory for testing, and if any samples test positive for the TB bacilli then these contacts are referred to the doctor for initiation of treatment.

EN 1: “There must be aware that we will be visiting the patient daily from Monday to Friday to give the injections most of the time. Most of our patients are from the ward they are already converted so they are low, yes in terms of cough eh of course infection but we, but with the children especially the children we have to send them to the clinic in order to be screened, send the patient back to the clinic but luckily most of the time we find that the people, the patient before had MDR had TB so she was already attending the clinic so the contacts have been screened at the clinic and all that stuff. That’s the main thing that when we start with the patient, yes, yes.”

TBA 1: “Yes and other thing is that I, I, I, I if the patient is newly diagnosed and I, I, I ask the family if they want to check if ever they contracted TB or not and I do contact screening in that family then I came back with the result if they, they, they want to check themselves. Yes, I take the sputums and collect it and bring it to the hospital and they take that sputum and send it to the labs. After that if the results are in the hospital then I check the results and then give it to the family. If there is a member of the family that is infected then we refer that patient to the nearest hospital.”

- **Accepts difficult situations**

TBA 1 stated that she has to accept the work situation as there is nothing else she can do. She has received counselling for her miscarriage and she puts God first now.

TBA 1: “Mmmh because I have nothing to do eh I, I, I counsel myself that it’s only God knows because I have nothing else, yah. Yes, I received counselling (for miscarriage) because I made an appointment with a psychologist. It helped me, it helps me a lot. (laugh) Yah. I put God first in all what I’m doing because I haven’t nothing else I can do, yes.”

- **Exposure to dogs and snakes**

The team members stated that they sometimes encounter dogs and snakes. One TBA was bitten by a dog and had to receive medical treatment. Walking through long grass increases the risk of the team members being bitten by snakes.

EN 2: “We came along with a lot of problems outside there, like when you walk outside it’s a danger of dogs and the patients themselves. Sometimes the patients they, if they don’t want, if they don’t want injections anymore they just leave dogs and leave the dogs for you so that you can’t get in and they can’t get injections so the other way, the patients fright to get out of the injections. Yes, because what’s the I remember one of the patient when I said we were at the gate, ‘just fetch us the dogs, we are scared of them’ so there are many dogs they said ‘no they know you now they won’t bite you’ but when you get inside the dog will, yes, yes, yes I think my partner he was wearing a risk he was trying to defend when the dogs tried to attack him but the patient said ‘no aih no never mind the dog will never’.”

EN 3: “Like we go, when we go, we go to the patients sometimes go on a high grass ... Yah the snake can come and bite us.”

TBA 1: “While we are walking in the bush there is a, a, a I didn’t see the dog from where we are walking that I hear the dog bite my leg and then I was very, very traumatised so we phoned our supervisor and the supervisor said if we are finished with work, finished injecting the patients we have to visit the nearest clinic there then we finished injecting patients and go to the nearest clinic. The nearest clinic gave me a referral letter to go and go to the hospital because the injection is in the hospital yes then we go to the hospital. It was ehhe round about half past four and the nearest hospital is far from the clinic then we go there, we arrive there then it was a changeover of the doctors and the staff and the morning staff we supposed to come the night staff. So we wait for the doctor that is going to come in the afternoon and then I see the doctor. The doctor injected me and gave me ... antirabies and a paper that shows me the dates follow ups ... was scared and I was traumatised. I have to drive the car in that situation.”

TBA 2: (Laugh) “One day I was just walking to the patient, a big snake just run away from us. Yah some of other patients have got a lot of dogs of like yah eight

dogs. Before you get inside the premises yah we supposed to stand and call Siya otherwise we can't get there ... also having a risk of dogs, snakes and also MDR."

- **Contracting of TB**

There are people in the communities who have TB, and it is often not clear whether they may in fact have MDR or XDR-TB. N95 masks are provided by the institutions for use by the teams. However, the team members feel that although N95 masks are provided, contracting MDR-TB is easy because they visit infected patients daily.

EN 1: "Could be that the people out there have TB and they didn't know drug susceptible TB or MDR - TB."

EN 1: "Yeah because we use masks, yah when we go into their houses and then the N95 we use N95 from, they are supplied from the hospital so we give injection in the rooms identified."

EN 2: "So we have a N95 mask."

TBA 2: "I think it can be easy for us to get MDR since we are injecting the MDR patient every day."

5.4.1.2.5 Subtheme 2.5: Poor socio-economic conditions

The participants commented on the poor living conditions and standard of nutrition in the community. Some patients survive on child support grants. Poverty-related factors cause them to default on taking their medication. Often they have no money to travel to the clinics to pick up medication or there is no food available for them to eat. Health education is provided on nutrition but not all types of food are available to them. Instant high-protein porridge supplement is given to patients in certain situations.

EN 1: "Yes, uthi the conditions, the living conditions are bad because these are the poorest of the poor that we mostly we deal with so even with nutrition at least they've got a grant. We give them advice to they must buy nutritious food sometimes we got a supplement, nutritious supplement from the dietician we got the most weak patients, we give them."

EN 2: “Yes there is porridge and peanut butter. We do have at OPD. There are some things like milk.”

EN 3: “Yes sometimes, most of the time the patient doesn’t have some nothing to eat but we thank God that ehh the government gave them the grant.”

TBA 3: “Patients default to take treatment due to poverty at home because I can give them instant porridge, they can’t eat instant porridge for the whole month ... find that nobody is working within the family. They survive with eh child support grant for two kids, family of five maybe.”

- **Patients on oral treatment cannot be monitored properly**

Monitoring of patients on oral treatment is not easy because patients take the medication daily, at any time of the day. Pill counts are performed to establish if patients are taking their treatment.

EN 3: “Sometimes it’s not easy to do that cos when maybe you come they said they already take the medication sometimes, yes. Sometimes the other ones take afternoon so it’s not easy to monitor the patient whether they take pills cos the other one I was suspecting that the other one does not take the medication, the medication I always checked the pack whether he took today I was counting them.”

- **Lack of treatment compliance**

The participants stated that patients need to be motivated to take their treatment. Patients are at times difficult and make a lot of demands on the teams and argue with them. At times difficult partners of female patients argue with the team and interfere with their work. Patients also often use traditional medicine from the sangomas and at times the team found the role of the sangoma and traditional medicine to be obstructive.

EN 1: “Yeah, they are, there are difficult patients there are very, very different and very difficult patients. I remember the other one, we could not find him at home, another issue that we can’t give them the exact time that we will be at your

house at 10 o'clock so we tell them that they must be at home from the morning till we've left whether we reach their house at 10 o'clock or 12 o'clock or they must be there till he has received his injection so you will find some others that are drinking so a person in the community when you get at home he is not there. He is in taverns. We have to travel around looking for him and he will say tomorrow."

EN 2: "Yes, we do cos sometimes when it's Monday we get the patient that is drunk 'we don't want to get injections no I'm not interested today just come tomorrow'."

EN 3: "The sangoma, ehh she chased us away with the sjambok and saying that we want to infect his son with the HIV. I think she was possessed or something or she was mentally ill then yah we phoned the police then they and we came to report to the hospital and we go to the social worker, they sort, they sort all the thing out. The other day we were going with the other colleague ehhh the man swore at us yah. And he wanted to beat us without doing nothing."

EN 4: "The boy does not need the injections in fact she actually said that this injection here has HIV in it. In fact we inject HIV it yah she said that. We went there on Friday and then we were told, we were told our patient is not there. He is gone to Port Shepstone to get his ID and then we tried phoning that patient unfortunately his phone was off."

TBA 2: "Hai so far we don't have defaulters. The only thing is our patients they don't understand. You talk and talk, 'do not smoke, do not drink alcohol', hey they drinking, they are smoking now and then. Most of them just putting a knife, a big knife in front of you, yah, one Kathi Miya, when you getting inside putting big knife, putting two quarts of Black Label, crushing dagga aibo, 'stop this thing because you got MDR-TB'. 'No guys don't worry that is my life'. We happy by the time Dr Lachman discharged him."

TBA 3: "Yes some of the patients are so difficult in such a way that if you go there and inject them they used to fight with us as if maybe it's our choice to inject them, you understand. Sometimes they even let the dogs out for us, that's wrong. Also I do remember there was a patient at Izingolweni area. We used to visit. It was a female patient. The boyfriend used to fight with us because it's me and my colleague the EN that I'm working with is a male you understand. Like

even if my colleague is injecting patients, as a health worker, I used to stand outside for the privacy. ... My colleague was injecting a female patient and the boyfriend used to be tense with us. One day he was fighting with us 'why each and every time we are visiting his girlfriend' then we told him it's for injection purposes. Instead he was fighting why [Hospital B] sent you as males. 'There are lots of nurses there, female nurses and I am not comfortable each and every day my girlfriend is taking off clothes for you' then I said then if it's about taking off clothes it's something else. The only thing that, that we are looking for is the bums for injection only and we don't take even five minutes to inject the patient instead he was fighting with us in such a way that the community members interfered. They said 'no'. This person is aggressive, the boyfriend is so violent then we reported the matter and said the best way is for your girlfriend is to go on daily basis to the local clinic and get injections. Bear in mind that the patient will take the queue unlike us, we come inject and go, nobody is going to say come first here the patient is number 50 and there are people who came before the patient."

"Ehh besides that one, there is a man I think round about fifty, fifty plus also was aggressive to us like after being diagnosed with MDR started injection at home because all beds were full in hospital both at [Hospital A] and [Hospital B]. ...he said 'no, no, no, no, no I told your colleague to be here at nine o'clock on daily basis. Should he fail to come here at 9 o'clock, he must come back after three because I've got two wives with two homes so if I'm not here you will find me' of which those two homes are far away from each other."

"Because you are a newly diagnosed patient you still waiting for the bed. Then I reported to doctor in OPD. Fortunately enough the bed was vacant. He was admitted. We went there to tell him you supposed to come for admission he said to us 'what you doing to me is the same like you raping me. I'm seeing you as a rapist. Why you rape me?'. He used that word because we telling him to go to hospital saying 'it's like you raping me. You can't tell me to go to hospital' then I said to him I told you long time ago that you waiting for the bed. Should the bed be available you will go to hospital so that's what I'm telling you. Tomorrow you'll go to hospital or after I finished with all patients I'll come and pick you and go to [Hospital B]. Then he was admitted. Then also even in the ward he was fighting with the patients, also was fighting with the nurses."

- **Patients have a right to refuse treatment**

The participants explained that patients are given medication and the importance of adherence to treatment is explained to them. However, there are patients who default on their treatment. These patients are referred to the doctor. Defaulters are traced and the team transports the defaulters to hospital.

EN 1: “If the patient has problems and is defaulting we arrange with the doctor. We agree to bring back the patient to the hospital, most of the time they are admitted.”

EN 4: “Some patients will tend to just maybe go to Durban without telling us and then not come back that same day, maybe they will go for a day then they will have to miss the injection for that day, for that particular day cos even if he is in Durban or she is in Durban, he don’t carry the, their medication so that’s why we always tell that if they going somewhere like now since it’s holidays they must inform us for her so that we can like make arrangements for them.”

TBA 1: “We get the defaulters after we finish injecting them. If we finish then they stop taking their oral treatment.”

TBA 3: “Yes, we do trace defaulters. ... So now to make things easy for us on their discharge we go with them so that they will show us where they stay so that if they default we’ll be able to know where they stay. So after they are discharged from injection, we keep on visiting them just to see us that we are still coming ... if I go to visit them once a week on continuation phase they become so scared of defaulting because my main purpose is to make sure that they don’t default because they will be seeing me in order to control the defaulters, we do things like that. I used to say if you failed to take treatment correctly I have to send you back to hospital till you finished your treatment for two years.”

- **Lack of adherence to treatment leads to re-hospitalisation**

Some patients don’t want to comply with treatment. They have to be brought back to hospital for readmission.

EN 1: “Patient some of them they run away when they see you coming: (Laugh) ... Yah ... there was a boy the taxi conductor so we find him ... he will be in the taxis but that patient took back to the hospital, he was readmitted to the hospital.”

TBA 2: “He don’t want to listen he just telling you on Friday ehh you guys you are working heh. If you want to take the leave, take a leave, listen here on Friday I won’t be here I’m going to Port Shepstone. ‘No Kathi that is we going to come to Port Shepstone and inject you’, ‘guys I’m taking my own leave’. And driving from here to lapha to St Faiths for mahala and come back on Monday you don’t find him but not interested why you didn’t inform us that you not going to be here on Monday?”

- **Attending to patients at their homes is time consuming**

The participants stated that patients’ homes are spread far apart and driving is a bit strenuous on gravel roads. At times the teams travel up to 220 kms per day. It is travelling that takes up the bulk of their time, rather than patient contact. The patient contact sessions are very short.

EN 1: “Even there are patients you will find that they are one patient in your route she or he is too far but you have to drive two hours, one hour to the patients and one hour from the other patient so it’s preferable the patient on the, on the same line because you find you spend a lot of time to go and see one patient who so patient those that you can’t reach with these vehicles, you can’t reach so with those patients it’s very difficult. We have to walk sometimes we have to walk especially when it’s raining we have to walk. We have to do maybe about five or ten minutes’ walk to the house of the patient so with those patients even the doctor say okay eih this one we have to recall to the hospital at times it becomes a bit strenuous yes.”

EN 3: “We travel maybe sometimes we travel 200 and something kms a day.”

EN 4: “I would say it’s very far these places, if I can add the kilometres ... plus minus 120 to 200.”

TBA 1: “It’s very, very, very far and they are very scattered ... sometimes hence it’s plus minus 200 kms.”

TBA 2: “When I’m coming back here, it’s almost 210 or 220 it depends on where is the patient because sometimes we travel from here to St Faiths and you don’t find the patient there, the patient is there in Marburg and you supposed to drive from St Faiths to Marburg to inject the patient.”

TBA 3: “They are scattered all over.”

- **Fear of walking alone**

The team indicated that they fear for their safety and security. At times there are no roads leading directly to patients’ homes, so they have to walk to the houses alone as the vehicles cannot reach them. Usually both the team members leave the vehicle and go to the patient’s home.

EN 1: “Yah when we walking sometimes we leave the TB Assistant there in the vehicle and you walk alone cos especially those are critical these days those are most important.”

EN 2: “We have to walk, yes distance yes, sometimes about eh more than 500 metres or close to a kilometre, just walking under the under the raining weather.”

- **The in-service training provided is general and not specific to the outreach teams’ services**

The teams attend the daily in-service training in the wards. The topics covered are not specific to the activities of the outreach teams, and the participants have therefore requested a manager for their department who would be able to structure an in-service training programme for the month that would cover topics specifically for the teams.

EN 1: “The routine in-service that they do in the wards other than that nothing specifically for the outreach.”

EN 3: “Yes we get in-service education in our department every day ... Ahhh we cover all topics about hand washing, TB, HIV, MDR ehh taking the treatment correctly all those about, yes.”

TBA 1: “Ehh every every morning there are some ehh health talks ehh in my department.”

TBA 2: “Yes, yes, yes, every day we do in-service.”

TBA 3: “Actually, not specific for the programme. Actually Sr Singh is the one who was assisting us like giving us in-service training in what we are going to experience also was asking us to collect information and all experiences so we will be able to work on it.”

- **Many patients allocated to one team**

The participants indicated that at times there are many patients allocated to a team and it becomes a lot of work for them. Patients are not allocated evenly per team, so sometimes one team will have two patients while another has 12 patients. The participants feel that someone needs to be in charge in order to allocate patients correctly and fairly to each team.

EN 1: “Sometimes there can be eight or nine, 10 or sometimes even two so (laugh) I think that’s another challenge for outreach. I think it will be better if really there was somebody who is stationed there who is running the whole programme in terms of outreach because sometimes you find that in your route you’ve got three patients and then the people who are using the other routes maybe they have 12 patients. I think, I think that is a problem. It should be patient-driven rather than allocated route. ... Those who have three there should be people who can go add three this side and look at the logistical problems directions so let’s add here, add here. You will find that big area but few patients sometimes small area but many patients ... you can have only five patients but those patients they are maybe 45 minutes or one hour apart that’s five patients and then you have a big problem. You are driving here from there sometimes you have 10 patients you will find all those patients within a 20 km radius so it’s easy to attend to those 10 because they are within 20 kms radius than the five you have to from one to one you have to 45 minutes from one to one hour from, yah, there is that problem and I think with time yah it’s quite tiring this side cos I can see I am little bit tired when I started it’s quite a strenuous, quite a strenuous drive going every day being in the motor vehicle the whole day yah it’s quite a strenuous job to be honest weather conditions, hot, cold have to walk so it’s not an easy job.”

EN 2: “Mmmh team we got seven patients ... yes so it can look like there are only seven patients but you travel far away you travel I think per day we use about 250 kms, 250 kms travelling because of the areas.”

TBA 3: “It depends now we’ve got seven patients. Previously we used to have 15 patients and above but it depends because some of them, they on continuation phase, you understand. Like if discharged from the ward it goes to outreach team, yes some of them they continue with on continuation phase, it depends, today there may be seven, tomorrow there may be ten, yah,”

- **Community assistance**

The participants stated that the community assists the teams when their vehicles get stuck. At times the community members request payment for the assistance provided. On one occasion the community’s tractor was used to tow them out, and the Operational Manager paid for the towing. The team members take pictures and videos when they are stuck.

EN 1: “Sometimes we have to call the people from the community to help with the cars. Sometimes you have to hire a tractor. We got, got the tractor from the community and they pulled it out and then they charged the money but Sr Singh from the hospital organised that cash so we paid the owner of the tractor. Yeh but we’ve not paid them yet. We try to ask for assistance and they then they help yes. Another time the hospital eh had to organise a breakdown so it’s the roads are terrible and the vehicles are not conducive for the conditions.”

EN 2: “Sometimes the community do help us and sometimes we call the transport and they do some means.”

TBA 3: “Instead we ask the community. Should you ask the community to come and assist you, you have to be, you will be in for any dent in the car because they say it’s government car you must not tow it anybody. Management is the one who is in charge of the cars. What they told me that showing you the photos. He said ‘as much as you show me the photos it’s good that the community members helped you but if there is a dent in the vehicle you will be in for it because government cars and you must not tow by anybody’.”

5.4.1.2.6 Subtheme 2.6: Communication challenges

- **Challenges with communication**

The participants related how initially the teams had experienced challenges in relation to communication. They had used their own cellphones to communicate with patients, and call backs were used to communicate with the supervisor. Team members had made several requests to their supervisors to purchase cellphones for them. The institutional cellphone was then used but the phone could only be used by one team at a time, because there was only one cellphone. Cellphones were then donated by Johns Hopkins for each team, which improved communication a lot. The R50 airtime provided per month was inadequate, but at least the teams could communicate with their patients. At times there are network challenges because of the geographical areas they have to drive into.

EN 1: “Yah we got cellphones that were allocated to us by the hospital. They give us about R60 of airtime. So if we encounter a problem then we phone the supervisor and the transport officer so that they can know that we have a problem, try to assist yes. No, no it was quite a struggle to get them (cellphones) to be honest. They were donated by a lady from an NGO from overseas I don’t know the lady was Jean I don’t know the lady Jean she is from John Hopkins or the other research but ... the lady is Jean, she is from America she donated the phones but the hospital is paying for the airtime, I think about, I think about a year from when we started I think about a year when we started to ask for then we got the cellphones yes.”

EN 2: “We have to use our own airtime because if we don’t use our own airtime that means we don’t find the patient so the patient will miss the injection.”

EN 3: “We were using our own cellphones and airtime. Yes, the institution provide us with cellphones. Now we can contact the patients.”

EN 4: “We don’t find the patient we have to phone the patient and tell the patient that we here so R25 airtime per month it’s I think it’s not enough. So now the cellphones have arrived cos we sharing one cellphone as a team and there is two

teams and that was a huge challenge cos it meant that we have to use our own airtime so if the other team is using the cellphone that means we have to use our own cellphone and no one will replace that airtime, but now our supervisor and the management we've got our new phones now it is making our lives, our lives more easier."

TBA 1: "Cellphones, they gave us cellphones. If we want to make a follow up with the patients we are visiting we use the institutional cellphone and yes something like that."

TBA 3: "Sometimes like if we are stuck in deep rural area whereby there is no signal to communicate with the hospital, sometimes you have to leave the vehicle and climb the mountain whereby you will get the network and phone the hospital to come and assist. We do have cellphones ehh two cellphones on our team which was donated by people from John Hopkins ..."

At times patients fail to communicate with the team. Some patients cannot be contacted, and they miss injections when they are not at home. Patients often forget to tell the team that they are going to SASSA (South African Social Security Agency). Then the team has to travel to SASSA to give the patient injections.

EN 4: "It's not all the patients that have cellphones. Even though that we do have cellphones but sometimes we can't like communicate with the patient so unfortunately for that day since the patient is not there and they don't know where the patient is unfortunately, the patient will miss the injection for that day."

TBA 2: "They've got a cellphones and if you try and phone the patient you are going to voicemail. No when it's bad like the patient is forgetting to tell you that he is going to SASSA to collect grant. And then you travelling every day driving from here to St Faiths and the patient went to SASSA without his form then he is going there. We go to the patient's house, 'where is the patient?' He is gone to SASSA to apply for grant and you supposed to drive from the patient's house to SASSA to inject the patient otherwise, the form is on the patient, can be easy to take his form and go to SASSA and getting injected at his nearest clinic."

- **Kanamycin ampoules can be a challenge**

Kanamycin ampoules are not user friendly. The ampoule is poorly manufactured and cannot be opened properly, and when it is broken the medication spills. When kanamycin dries, it is like superglue. This was reported to the supervisor, but the supervisor has no authority over issues related to the supply of medications.

EN 4: “Those kanamycin sometimes you can’t even open them properly or if you break them the whole thing just breaks and it splashes. I’ve, I’ve spoken to my supervisor about it and then unfortunately she said it’s the company that is making it is, is the institution cannot change that cos it’s the actual company that is making it, kanamycin, that got the tender that is doing yah so it’s a bit of a challenge that is something she cannot change. It doesn’t break. You keep trying, it just splashes and then when that thing dries up it is like superglue.”

- **Changes in the allocation of vehicles in the mornings cause delays**

Trip sheets are completed the day before a trip to make it easier for the following day. The vehicle is packed and ready for the following morning but a problem often arises in the morning on the day of a planned trip. There is a shortage of vehicles, and this results in changes in the allocation of vehicles. New trip sheets need to be completed, the vehicle has to be unpacked, and the supplies need to be put into another vehicle. This results in delays in leaving in the morning, and patients having to wait and also experiencing delays in their planned activities for the day. Patients may miss their injections for the day if they have already left their homes when the team arrives.

TBA 2: “The problem with the trip sheet, we sign a trip sheet today. And you put the registration of the car you will be using tomorrow, you found that you not using this car, you supposed to start afresh again and sign another trip sheet because you are not using the car that you had written yesterday.”

EN 4: “Some of the challenges that we are faced with is that the facility is short of cars. For some time you find that you write a trip sheet, meantime the laundry will need that van, particular van for that day and eh I think in the morning we gonna take all our stuff, our weight, our scale and everything to put in another car. It kind of delays us, it delays us to go and do our work in the morning, if we gonna take

everything, changing cars can actually be a bit of a delay. We travelling as well cos sometimes patient needs to go to other places. They know at this time, they know what time to expect us cos if we not there at that time chances are you may not find the patient there cos you wait there, they say they waited so much for us and then you don't come and then ... We always tell them before you do anything else you must just wait for us and then we inject them. After you have completed a trip sheet, you have to write another trip sheet cos you won't be using that vehicle that you thought we gonna use the next morning."

- **Colleagues scared of contracting MDR-TB**

Other nursing staff do not come to the MDR-TB ward, because they are afraid of contracting MDR-TB. Even matrons do not come to the MDR-TB ward, which is called "the Titanic" by other staff, as they say it is about to sink.

TBA 3: "You will never see any nurse in general wards coming here. Even if they come here they come to somebody they just stand there, they say 'we are so scared of MDR'. MDR is your own thing in such a way they used to say here in MDR we are in Titanic. We are in Titanic and this Titanic is about to sink, you understand, because if you working in this department it's like you walking on a grave. Even yourself as a health worker at any time you will be infected. You will die because they are not yet in serviced about MDR. They fail to understand that here in MDR; yes I do understand patients are here with MDR but most of them they started in main Outpatient department. They worked, they admitted in the wards, afterwards they have been diagnosed in the wards and sent to MDR and instead they don't want to even to come and learn some of the things about MDR itself ... Yes. Even Matrons themselves they hardly come to MDR. They hardly come to MDR but they go to general wards."

5.4.1.3 Theme 3: Support/non-support

5.4.1.3.1 Subtheme 3.1: Support

- **Support from the wards**

The participants stated that there is a certain degree of support for the teams from the wards. In-service education is provided in the wards, so the teams go to the wards in the mornings to attend these sessions. Supplies are able to be obtained from the wards; for example, when there is a patient with a wound, bandages may be obtained from the ward. The supervisor consults medical resources and uses them to provide information and support to the team.

EN 2: “Maybe if sometimes, if like, if like bandages when there is a patient with a wound so we can go to the ward and ask it from the ward so we get some bandages stuff for dressings.”

TBA 2: “But they gave us help like they are calling us and check our health education book and if you are not doing in the health education book they remind us ‘aeibo guys make sure that your’l are doing health education to the community’.”

TBA 3: “The only support that we get is only in the ward.”

- **Training is important**

The participants spoke about how training is important for the teams to stay updated on and knowledgeable about the MDR-TB programme. One team member attended TB/HIV training when he first started the programme, but no further training was provided. The teams needs continued professional development.

TBA 1: “Ehhh in terms of trainings, yes, in last year or last of last year we attended a training a TB/HIV training at Ugu District that helps us very much because we understand more about TB.”

EN 3: “I went to the training for HIV and MDR but it was it was only one day, not enough for me that is why I say I need more on MDR so that I can be sure or

even if community there if they ask me questions so that I can tell them about the whole MDR.”

- **Partnership with NGOs**

There is one team at Hospice. Hospice is a non-governmental organisation that assists the DoH in its fight against TB. The government’s utilisation of partners such as Hospice assists in managing and reducing MDR-TB in the community.

EN 1: “We have quarterly meetings where there is Dr Lachman and all the teams. The teams there is Ugu team, Mr Shazi who is the coordinator and then we will decide on the route and Hospice too, so we decide on the route, so those routes then we that have been dedicated to the patient that resides from those routes there will be allocated, that’s how it goes because we will find that eh but with Hospice I think that, I think that Hospice I don’t know how they came to the programme, I think it will be much better if it can be all the team, it can be teams from the DoH rather than utilising Hospice because sometimes we don’t how Hospice works.”

- **Meetings are held with managers**

The participants mentioned that meetings are held monthly at the institution and quarterly at the district office. Challenges and ways to improve the services are discussed.

EN 1: “Yes, I think quarterly, yes they are quarterly, Mr Shazi, Dr Lachman and, and all the teams then all the supervisors ... there are monthly meetings in the wards but, but most of the time you find the monthly meetings are not specifically for the outreach it is for the MDR.”

EN 3: “Yes, we have meetings once a month. We normally have a meeting and we always give the challenges that we are facing, yes, and they discuss to the management.”

EN 4: “We have our meetings and then we find our flaws and our supervisor and the management always advise us, okay, this is what we do, this is how we can

improve on our services, cos we do have flaws that still to be polished so we always have that support. Yes, we do have policies but the 2014 TB guidelines are like I still like to get my, read the TB guidelines the 2014 one.”

- **Supervisors are helpful**

When there are problems in the community or with patients, they are reported to the supervisors, who assist in solving them.

EN 1: “Yah if there is something you speak to your supervisor so far, yes and try to sort it out.”

EN 3: “Yah, when we report to our supervisor they attend us when we are having a problem. When we having a problem they attend us and they help us we they help us with that problem that we are facing.”

5.4.1.3.2 *Subtheme 3.2: Non-support*

- **Washing of vehicles**

There is now a new private company at Hospital B that washes the cars used by the outreach teams, so now washing of vehicles is no longer the responsibility of the outreach teams.

EN 1: “But with time then the hospital organised ehh ... the private company to that is washing the cars so now we no longer washing the cars now.”

- **Staff safety**

At Hospital A protective clothing has since been supplied for the teams. Rain suits and gum boots are provided.

TBA 1: “They give us protective clothing like rain suits and gum boots, yes.”

- **Lack of further development**

Orientation and in-service education were provided at the beginning of the programme, but this has not been adequate. The daily in-service training provided is general in nature, and must be made appropriate to develop the team members in the specific skills they need to perform their daily tasks. Re-orientation is important to keep the teams focused on their objectives.

EN 1: “I won’t say that it’s much but much development we been doing all that we have been doing from the word go. It’s a routine thing, I haven’t seen any personal changes on how we work we are doing just the same thing patients, yes.”

EN 1: “In-service education, yes, yes, we had in-service orientation and when we came here ... 2012, yah that was 2012.”

5.4.1.4 Theme 4: The needs in promoting this service

The following sub-themes emerged from this theme:

5.4.1.4.1 Subtheme 4.1: Health education of the community

Health education is required for the patients, as well as for their relatives and neighbours. Their neighbours are often uncomfortable or fearful, as they need to take measures to protect themselves. The community must therefore be involved, but at times there are misunderstandings over what MDR-TB actually is. Community members see the staff from the DoH visiting repeatedly, and they are not sure what is wrong with the patient.

EN 2: “Some of the things patient like the community when each and every day we come to visit the patient they are asking so that the patient sometimes they don’t feel comfortable ... I think maybe that if the community must be health educated by the MDR this will help maybe, help those community, yeh, the community to be given some health education. Yes, sometimes like the neighbour will come and ask the questions like how much are we safe, if what we

have to do to make ourselves safe ... they do ask how much they are safe and what to do to protect themselves so.”

- **Support provided for patients experiencing side effects**

Patients experience side effects from their medication and need to be supported during this time to continue taking their treatment. Side effects occur at the beginning of treatment for about a month, and thereafter go away, but patients need to be supported during this time.

EN 3: “Patients have the side effects, most of them they have the side effects, others are vomiting, others they have running stomach, cramps, yes but we always tell them this will pass. Sometimes it only takes one month then it go away.”

“We advise them to continue with the treatment not stop using the treatment continue until you are better cos when they when a person is sick when immediately they take the MDR treatment and the person is getting well and then they always tell us that now I’m feeling well although I’m having those side effects I’m much better.”

- **Diagnosing patients is faster with GeneXpert**

GeneXpert testing is more effective in diagnosing patients with TB quickly. With GeneXpert, clients know their results within five days and know whether they have susceptible TB or MDR-TB. Treatment can be initiated more quickly and the patient put on the road to recovery.

EN 1: “So the MDR especially with the GeneXpert after maybe I won’t say it’s MDR increasing. It depends on because now we are diagnosing it more so now we’ve got this GeneXpert in which is early diagnosis because the number of patients increased when gene expert most it’s TB it’s better now it’s the number of people that is but ... It’s when you are not converting when they start to when the patient is not converting now maybe it’s MDR until they doing the culture with GeneXpert from, from day one they can say that this patient need to be put on MDR.”

5.4.1.4.2 Subtheme 4.2: Team:patient ratio

Participants were of the opinion that a maximum number of patients should be determined for each team. They felt that, considering that patients' homes are far apart and are scattered in deeply rural areas, and taking into account travelling time and distances travelled from the institution, there should be a maximum number of patients per team to attend to.

EN 1: "Yah, and another thing in fact eight should be the maximum, eight patients for one team."

EN 2: "Like right now there are seven but sometimes you get 11 sometimes there are less than that, it depends on when they are discharged."

- **Additional teams are needed to prevent the spread of TB**

One EN indicated that MDR-TB is spreading, and that more teams are required to provide injections to patients to prevent its spread.

EN 1: "Yah, I think MDR, MDR is spreading. It is spreading even with the numbers when we started you will find that you find that the eh the two when we said that the team there was a team not my team it was from [Hospital B] it's [Hospital B] I am going upwards to [Hospital C] area, [Hospital B] catchment area as well as [Hospital C] area catchment area you will find that team now that area three teams that are both [Hospital B] and are doing that area as well as [Hospital C]."

- **Request for two additional nursing staff**

The team indicated that instead of having a TBA whose job description is limited, there should be a Professional Nurse or another EN who would be able to perform the TBA's job and the EN's job, especially when the TBA is not on duty.

EN 1: "I think it would have been better if the department in future will, if they employ for outreach I think if it's two staff nurses instead of a TB Assistant

because I think the role of a TB Assistant becomes, becomes minimal. I think that if it can be two staff nurses or even if the department is well financed, if they can a professional nurse and an **EN**, but if they can afford, not afford the professional nurse I think the salary is not that far different, if it can be two staff nurses because sometimes it helps when, when the other one is not at work at least if there is two staff nurses I think that is another thing that I was thinking about. Can still continue because the problem is if that staff nurse is not there then we can't continue or the hospital have to ... the wards have to reschedule find a, a, a but with a staff nurse but everything and everything has started a TB Assistant can do staff nurse will do but with the, but with the opposite it doesn't go well is another thing that they have to consider."

5.4.1.4.3 Subtheme 4.3: Needs for this service

There are certain requirements for improving this service: 4x4 vehicles, uniforms, raincoats and gumboots, more airtime, first-aid kits and first-aid training, relevant in-service training and workshops on new developments, a panic button, a list of numbers for emergencies, numbers on speed dial, teams consisting of one male and one female, mobile clinic vans where patients who are encountered away from their homes can be given injections, raincoats and TB guidelines.

EN 2: "The first thing is the 4X4 cars, phone and ah ... uniforms must have like raincoats because we scared to just wear a raincoat because we know that it's not part of uniform so we can't just wear some boots when it's raining. We just need cars besides cars the protective clothes and the airtime must be more than that R25. Okay I think we also need ah something like ehh workshop actually last ... workshop by 2011 before we started the programme so the last that we had was something like a workshop so I think it's also important we also need a know more about MDR-TB. Yes and to have those answers to patients because they are always asking so if there is also what to do like this, we have to know side effects, we have to know all those side effects, adverse effects so that when they ask so that we can have answers ... and also not for MDR only because most of the patients is on ARV's but we have to know our work not only MDR because we have to know about them too. No and bandages like maybe, maybe if we can have first-aid kit maybe first-aid kit can help."

EN 3: "I was thinking there is lots of uhhh hijacking of staff if we can I don't know whether if get something like a panic button, when we having a problem out there, something easy to contact the police or if we can have something like numbers of the police, ambulance like list of emergency numbers with us. That will make it easy or when we using cellphones when can press number maybe 1 then it will go to the police station or I don't know whether they have something like that we don't know. And like Matron like when we going out there I suggest that if we can go with male and female cos sometimes out there male people they took you see they take opportunity when we are going like two females sometimes they talk nonsense to us you see it's better if we go male and female together. To make it better. Mmmh like we said, like I said we can get the cars that are suitable for this the road that we are going. Okay, training, yes, Matron I was ehh thinking the other day we were going with the other colleague, we saw a man which was stabbed cos that I couldn't do nothing. I was not sure what to do cos even thought I have, I do first aid at the college yes, but I'm not sure if we can get a training on first aid like when the community is having a problem lets maybe we can help ... more trainings even if about first aid and MDR. Yes, cos we are not, we have little knowledge."

EN 4: "As the injection team, I will say suitable vehicles, suitable 4x4's and we also need cos now since it's summer, it's raining and sometimes it's raining and windy and an umbrella when it's raining and windy, carrying injections ehh it's a bit of a challenge. We need rain coats. We need something safe for shoes cos we can't use our shoes in the mud, the mud that we go through even our socks ended up being wet so we need something that can protect us from all of that. TB guidelines ehh what else. Proper vans you know like those mobile clinic I don't know how to like they can make it like the mobile clinic. Sometimes we find that a patient will not be at home maybe at a relative or somewhere we find them on the road and they say 'okay please inject me now here', we say 'no we it's too public, we cannot inject you here'. If we had those vans it was going to be much easier cos we gonna open the door and for the patient and inject them you find that you cannot just inject the patient out in the public. We must obviously respect their privacy as well."

TBA 1: "Ehh like in-service training ehh if there is something new concerning eee treatment ... we end up hearing about the patients that are not taking this because it changes now."

TBA 2: “If we can get a right cars it can be easy to get to get to our patient ...what more cos we got the cellphones we using our cellphones yah that is all. Maybe if we can get ehh uniform ... uniform okay ... If we can get 4x4 vehicles.”

- **Request for training**

The participants asked for more training to be provided in order to provide health education and quality services to the patients. If there is more training then they will be knowledgeable and would be better equipped to answer questions from the patients and community members. They would be able to support each other.

TBA 3: “If we can get a proper training, you understand, like we as TB Assistants is that if we can get a proper training... so if I can get proper training, relevant information I’ll be able to assist my colleague. While he is doing this sometimes in the family, some of the family of 15, while he is busy explaining this group, I will be explaining to this group because they’ve got different questions so and so will ask my colleague someone will be asking me this side you understand. At the same time while my colleague is busy giving them the information some of them they used to come to me and disclose to me ‘please if you come here don’t specify that I’m on ARV’s and nobody knows that I’m on ARV’s, you understand. Yes, then like when you come here I told my family that your’l are social workers’.”

- **Specific types of vehicles**

The participants suggested that specific types of vehicles such as 4X4’s be procured for the outreach services because when it rains their current vehicles get stuck in the mud. An EN suggested that they get mobile clinic vans which are suitable for attending to patients as they are fully equipped with a bed and curtains. This would be suitable when they go to patients’ homes and there is no suitable room to give the patient their injection. To ensure patient privacy and confidentiality, mobile clinic vans would be more suitable.

EN 1: “Yes, yes, it’s deep rural ... actually we need really 4x4 vans vehicles that can, van that can travel, can be drivable off the road because sometimes you

can't say you can't even go off the road, it's off the road, its grass then it's on gravel then we are off the road so with 4x4 it will be much, much easier.”

EN 2: “Yes, yes, because if we leave the patient and say that this is not allowed we have to trace the patient may be we can even not find the patient so this is a reason why I think even if we can get that may be eh double cab car that we can accommodate the patient.”

EN 3: “Yeah, the challenges that we are facing is with firstly the cars that we are going with are not roadworthy; they can't deal with the, the sand and the mud. If we can get the 4X4's. Proper vans you know like those mobile clinic I don't know how to like they can make it like the mobile clinic.”

TBA 1: “If, if eh at least the institution gave us ehh some vehicles like 4x4's.”

TBA 2: “We are using a Nissan vehicle but not a double cab one because I think if we can try to give us a double cab it can try to help us privacy because sometimes when it is raining you can't go right to the family to the patient's house so you supposed to call the patient to come to you and inject him on the road so there's no privacy there but if we can be able to use, if we can be able to get a double cab it can be better ... if we can get 4x4 vehicles.”

TBA 3: “Also if we can get 4x4 cars for deep rural areas.”

5.5 PRESENTATION AND DESCRIPTION OF RESEARCH FINDINGS

The following section presents and discusses the findings of the research.

5.5.1 Perceptions held by the team

The team indicated that the patient numbers for the outreach injection team had increased. When the programme initially commenced, it faced many challenges as this was the first time Ugu District had initiated mobile injection teams. The teams learnt that teamwork was very important.

When patients were discharged from inpatient care to the injection team, obtaining the correct physical address of the patient was important as the team would be visiting the

patient daily. Patients receiving outpatient care responded well to treatment and showed appreciation of the programme as they did not have to stand for long periods of time in queues at the clinic waiting for treatment.

The teams attend to patients who live in deeply rural areas, and the team members realised that the poor are susceptible to contracting and spreading TB. They found that providing health education and counselling to the patients and their families was key to preventing the spread of TB and the development of further resistance. Family involvement was found to be important for the patients to ensure treatment adherence and compliance. Family becomes involved during admission of the patient. Should the patient not want to disclose their TB status to their family, the patient would receive ongoing counselling and be referred to the Social Worker for further counselling and family intervention. The Social Worker also does a home visit.

During treatment by the injection teams, privacy and confidentiality were important and had to be maintained in order to ensure continuity of care. Patients identified a room in their homes where they would receive injections alone away from their family members and health education. Confidentiality was maintained as no information obtained from the patient during discussions and health education sessions was communicated to the family members. The teams recorded all the nursing care provided to the patients.

5.5.2 Challenges

The teams experienced many challenges as this was the first time that Ugu Health District had introduced and implemented the MDR-TB mobile injection teams.

The participants indicated that they felt there was a lack of appreciation and support from management for their work and their working conditions, particularly during the pregnancy of a team member. When they were first employed, because it was a new programme, there were no job descriptions and performance agreements in place that detailed the job that they were expected to do. In addition, the participants voiced concern over not having an operational manager to oversee the teams, which has resulted in a lack of leadership and direction. No specific in-service education is regularly provided for the teams, but only general information that they receive at the compulsory in-service training in the wards in the mornings.

There were multiple challenges in relation to travel and transport. The patients' homes are scattered in deeply rural areas, and are quite a distance from the hospitals, so travelling to patients' homes was very time consuming. Direct contact with the patients often lasted for only a few minutes, and when more patients were allocated to a team, patient contact decreased even further. Oral treatment could not be monitored with all the patients, as at times patients had taken their medication by the time the team had arrived; however, pill counts were performed to establish if patients had taken their treatment. In a study by Brust et al (2012:1003), it revealed that the rural landscape, poor roads and large distances between family compounds, injections teams arrive at patients' homes at different times each day — often after the patients' morning dose of oral medications.

The type of vehicle allocated to the mobile teams (a bakkie) was not suitable for the dirt and gravel roads that they had to travel on daily. On rainy days the poorly constructed rural roads become impassable, and the vehicles cannot reach the patients' homes, so the patients miss their injections for that day. When the roads become impassable, the patient is informed to go to their nearest clinic to receive the injections. At times the vehicles get stuck in the mud and the community is requested to assist, sometimes demanding payment for such assistance. The team members also complained about having to wash their vehicles after a long day on the road, as there was no company employed to do so.

Trip sheets posed a challenge as they are usually filled in the day before a trip, but often on the morning of a trip the teams would find that their allocation of vehicles had been changed by the transport department, and this caused a delay in the teams' schedule of visits. This showed lack of planning by the transport officials.

Patients had to be transported upon discharge from the wards to their homes, so that the mobile injection teams could see exactly where they lived, but the bakkies used by the teams were not suitable for the transportation of patients, as the patients had to sit in the open back area. A car could be allocated when a patient needs to be taken home and the patient could sit in the back of the car wearing a mask. In addition, the departmental policy does not allow patients to be transported using a government vehicle. Even so, teams were required to transport patients to their homes. If their

patients' condition changed, and the doctor to whom it was reported requested that the patient be brought back, then the teams would have to transport the patient back to the hospital.

Another situation that required the teams to break the rules was when they had to walk long distances to patients' homes in areas where their vehicle could not drive. Vehicle theft and safety was an issue. At times one team member stayed with the vehicle while the other went to see the patient. Government vehicles should always be monitored by their drivers, but for the sake of their personal safety, both team members would walk together and leave the vehicle behind.

Personal safety was a big challenge for the participants. The team members were afraid of walking alone in these rural areas and had to go together to support one another. Walking in these areas was a challenge as the team members had to wear sturdy shoes to walk the distances, and often wet-weather gear, but they emphasised that they did not receive a uniform allowance or danger allowance. When visiting patients the team members wore N95 masks to prevent them from contracting MDR-TB, but their fear of contracting this bacillus remained.

Some patients do not show appreciation as on the way to and from the patients' homes, the team sometimes came across dogs which the patients let loose to prevent the MIT from giving them injections. A TBA was bitten by a dog and had to receive medical treatment. This was treated as an injury on duty. The teams also feared gangsters in the communities and the violent patients that they sometimes had who wanted to fight with them.

Although the teams had to inject the patients daily, even on public holidays, some patients still refused to take their injections. At times they were told that the patient is in the tavern and would find the patient drunk. Sometimes patients' lack of adherence to the treatment would lead to their re-hospitalisation.

Other challenges for the teams had to do with resources and supplies. There were essential resources that were not available, like stethoscopes to monitor patients' vital signs and supplies like bandages or even a first-aid kit. The teams provided injection services only and no other services. When the patients or community members

requested assistance for minor ailments, the team could not assist and they would refer the community members or the patients to their local clinics for further management. Kanamycin ampoules were also a challenge to administer, as they are poorly manufactured and would often break when being opened. Any kanamycin that spills turns to superglue when in contact with the skin, but unfortunately nothing could be done to change the ampoules supplied to the DoH. A product complaint form had to be completed and submitted to the Provincial Medical Supply Service, addressed to the Chief Pharmacist for investigation and reporting to the manufacturer.

Communication initially posed a great challenge, because no cell phones were provided for the teams. Later on, however, cell phones were donated to the teams with R50 airtime, but signal and network challenges remained an issue.

The patients' home and family environments played a crucial role in their adherence to medication and their recovery. Where family support is received, the patient is more likely to adhere to the treatment programme, so the team members spent a great deal of time educating the families and encouraging such support. If the patient has not disclosed their TB status to their family, the patient would receive ongoing counselling from the time of admission and be referred to the Social Worker for further counselling. The Social Worker also would conduct a home visit.

The participants noted that most of the patients lived in poor socio-economic conditions, in rondavels with inadequate ventilation, and so the patients and their families required a lot of health education in order to prevent the transmission of MDR-TB to their family members. Contacts of the patient were traced and screened for TB, and patients who did not adhere to treatment were educated and counselled.

5.5.3 Support

The teams received support from their colleagues in the MDR-TB wards. They attend the wards' daily in-service training programme, and when the team requires supplies such as bandages, then the ward staff assist. At Hospital B the team was pleased to report that there was a private company that management had tasked with washing the vehicles. The management team had meetings with them monthly and with the district health team quarterly where they could air their challenges and receive

recommendations. The meetings were held in the mornings so that after the meetings the teams could go to attend to their patients. The team indicated that when they had had supervisors, the supervisors had been very helpful and had assisted them with their queries.

5.5.4 Needs to promote the service

The team indicated that they had unmet needs and requested training in MDR-TB management and care to further capacitate them and develop them in their field of work. They requested that management re-evaluate the team: patient ratio because when the team had many patients to see to, patient contact was minimal and the quality of care was not what it should be.

4x4 vehicles are specifically needed for use on gravel roads in deeply rural areas, as they are able to travel over difficult terrain even when it is raining and are less likely to get stuck when it rains. Should it rain and the roads are bad and the team cannot get to a patient, then that patient should go to their nearest clinic to receive their injection.

Additional outreach injection teams are required, as the MDR-TB outpatient numbers are increasing and the spread of TB needs to be prevented. More health education is required for the patients and community to prevent the spread of TB, and also for the team members' nursing colleagues, as nurses from other wards are afraid of contracting MDR-TB. The team also requested that they be compensated timeously when they work on public holidays, as there are currently delays in the payment of their public holiday claims.

5.6 CONCLUSION

In this chapter, the data collected on the experiences of the MDR-TB injection team from interviews conducted with four ENs and three TBAs was presented and analysed using Giorgi's method of data analysis. Data was grouped into four themes that emerged from the participants' narratives: perceptions, challenges, support/non-support and needs in promoting the service. There were 73 sub-themes collectively from the four areas. In the next chapter the development of guidelines for the team will be presented.

CHAPTER 6

DEVELOPMENT OF GUIDELINES TO ENHANCE THE UTILISATION OF MOBILE MDR-TB INJECTION TEAMS

6.1 INTRODUCTION

Following the presentation, description and analysis of data in the previous chapter, this chapter presents a set of guidelines that will enhance the utilisation of MDR-TB mobile injection teams. Guidelines have been defined as “*systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances*” (Fraser & Cooper 2009:1009). They are designed to help practitioners assimilate, evaluate and implement the ever increasing amount of evidence and opinion on best current practice. Clinical guidelines can assist healthcare professionals in making decisions about appropriate and effective care for their patients (Sign 50 2008: 2). The findings of this study formed the basis for the development of the guidelines. These guidelines are proposed specifically for MDR-TB mobile injection teams and for any new staff entering the teams.

6.2 THE PURPOSE OF THE GUIDELINES

Guidelines serve as a quality-improving strategy to support decision making within an organisation. They provide for good planning as they outline what is to be done and how to guide or set standards in determining a course of action (Fraser & Cooper 2009:1009).

The purpose of the guidelines was to:

- Enhance the decision making of managers and the MIT to improve the effectiveness and efficiency of the MIT.
- Provide a framework for the provision of MIT services in Ugu District.

6.3 THE DEVELOPMENT OF THE GUIDELINES

The process followed in this study for the development of the guidelines included logical reasoning. Logical reasoning is the “process and organization of ideas to reach a logical conclusion” (Polit & Beck 2008:13). Logical reasoning combines experience, intellectual faculties and formal systems of thought in solving prevailing problems. In science there are three systems of reasoning, namely inductive, deductive and abductive reasoning based respectively on induction, deduction and abduction (Polit & Beck 2008:13). These were used in the formulation of the guidelines.

Inductive reasoning is a process that starts with the details of the experience and creates a general picture of the phenomenon to provide a highly probable conclusion. The researcher used inductive reasoning to draw conclusions from the findings of the study and then summarised and combined these conclusions to form one concluding statement under each of them.

The deductive reasoning process also works from a general premise to a more specific situation (Brink, Van der Walt & Van Rensburg 2006:6). In the context of this study, because the guidelines were developed from the conclusions, recommendations were developed from the concluding statements and enriched with the relevant literature.

6.4 THE PRESENTATION OF THE GUIDELINES

The guidelines presented here are a synthesis of the conclusions drawn from the findings of the study, on the basis of which the researcher has recommended specific activities and procedures for implementation. Guidelines were formulated using themes based on the participants’ experiences.

The themes were as follows:

1. Teaching
2. Policy
3. Guidelines
4. Patient care
5. Patients referrals
6. Essential drugs
7. Emergency contacts
8. Equipment and supplies
9. Travel routes
10. Transport
11. Orientation of the MIT
12. Structure of the team
13. Allowances
14. Staff support

Table 6.1: Guidelines on activities and procedures for implementation

THEMES	TARGET GROUP	GUIDELINES	TIME FRAMES	EXPECTED OUTCOME
1 Teaching	Community members and patients	<ul style="list-style-type: none"> Provide more health education by the MIT to prevent the spread of MDR-TB in the community 	Daily	Prevention of spread of TB
	Community members	<ul style="list-style-type: none"> Conduct more awareness campaigns by MIT to explain to the community members about MDR-TB and preventative measures 	Monthly	Successful awareness campaign conducted
	Community members and patients	<ul style="list-style-type: none"> Strengthen the advocacy and dissemination of information about health care services offered by the MIT 	Daily	Health information disseminated
	Patients	<ul style="list-style-type: none"> Provide health education to patients by the MIT about compliance with medication and adherence to the treatment programme 	Daily	Treatment compliance
	Injection team	<ul style="list-style-type: none"> Educate patients and relatives by MIT on the avoidance of traditional medicine during treatment due to medication interaction 	Daily	Treatment adherence
	Community members and	<ul style="list-style-type: none"> Educate the community on MDR-TB, mode of spread and preventative measures must be 	Daily	Prevention of spread of TB

THEMES	TARGET GROUP	GUIDELINES	TIME FRAMES	EXPECTED OUTCOME
	patients	provided by MIT		
	Supervisor	<ul style="list-style-type: none"> Conduct in-service education to nurses on MDR-TB 	Monthly	Knowledgeable staff
	Staff	<ul style="list-style-type: none"> Design information, education and communication strategies and materials to create awareness of MDR-TB 	Monthly	Designed awareness information
	DOTS supporters	<ul style="list-style-type: none"> Train more DOTS supporters by TBA's in the community to strengthen health education to patients 	Quarterly	DOTS supporters trained
2 Policy	Management and injection team	<ul style="list-style-type: none"> Devise a system and monitor implementation of taking of oral treatment and pill counts Strengthen the use of N95 masks which is compulsory during interaction with patients Formulate and implement an Injury on duty policy Implement the policy on screening of contacts Implement and adhere to the Referral policy to clinics Develop and implement a specific policy on referral of patients to the multi-disciplinary team such as the social worker and dietician 	01/04/2016 Daily 30/04/2016 01/04/2016 01/04/2016 30/04/2016	Policies formulated and implemented

THEMES	TARGET GROUP	GUIDELINES	TIME FRAMES	EXPECTED OUTCOME
		<ul style="list-style-type: none"> Develop a Policy on documentation in patient records and ensure availability of a guide on documentation to the team 	30/04/2016	
3 Guidelines	Injection team	<ul style="list-style-type: none"> Ensure availability of TB, MDR-TB policy and guidelines 	01/02/2016	Available guidelines
	Injection team	<ul style="list-style-type: none"> Design a programme to role model the patients who received successful care and were cured 	29/02/2016	Developed programme
	Injection team	<ul style="list-style-type: none"> Develop a template to obtain the correct physical address of the patient for continuity of treatment 	01/02/2016	Developed template
4 Patient care	Patients	<ul style="list-style-type: none"> Involve family as family support is key to treatment adherence 	Daily	Family involvement
	Patients	<ul style="list-style-type: none"> Maintain privacy and confidentiality throughout treatment to ensure compliance and adherence 	Daily	Privacy and confidentiality
	Injection team	<ul style="list-style-type: none"> Record all nursing care provided to the patient, as the patient's progress must be monitored 	Daily	Quality nursing care
	Injection team	<ul style="list-style-type: none"> Introduce the team to patient, relatives and neighbours to prevent discrimination and promote 	On first day of visit by the MIT	Treatment adherence

THEMES	TARGET GROUP	GUIDELINES	TIME FRAMES	EXPECTED OUTCOME
		adherence to treatment		
	Management	<ul style="list-style-type: none"> Request for assistance of Emergency Medical Services (EMS) for repatriation of patients to their homes and from their homes when their condition warrants 	29/02/2016	Repatriated patients
	Supervisor	<ul style="list-style-type: none"> Develop a monthly health education programme for patients which must be implemented 	Monthly	Treatment compliance
5 Patient referrals	Social worker	<ul style="list-style-type: none"> Develop a procedure for referral of patients who have social problems to the Social worker 	29/02/2016	Successful referral
	Social worker	<ul style="list-style-type: none"> Involve the Social worker during inpatient care and Social Worker to conduct family visit to explain the condition and offer supportive care to the patient 	Daily	Home visit done
	Injection team	<ul style="list-style-type: none"> Report difficult, non-compliant patients who are experiencing problems, and violent and aggressive patients to the doctor so that patients can be assessed and treatment can be modified 	Daily	Continuity of care
	Injection team	<ul style="list-style-type: none"> Screen contacts and refer appropriately for further 	Daily	Case finding

THEMES	TARGET GROUP	GUIDELINES	TIME FRAMES	EXPECTED OUTCOME
		<p>management and do follow-up of referred clients to confirm if they were screened</p> <ul style="list-style-type: none"> • Screen and test all contacts and implement GeneXpert testing services for quicker diagnosis 	Daily	
6 Essential drugs	Pharmacist	<ul style="list-style-type: none"> • Complete product quality forms for kanamycin ampoules and other products that are not of good quality 	01/02/2016	Supply of quality drugs
7 Emergency contacts	Supervisor	<ul style="list-style-type: none"> • Obtain details for assistance by tow truck, police station, etc. in the communities being visited so that assistance can be requested timeously 	01/02/2016	Formulated list
8 Equipment and supplies	Supervisor	<ul style="list-style-type: none"> • Obtain a list of supplies and equipment required for the team. • Ensure minimum/maximum numbers are kept and check daily 	01/02/2016 Daily	Formulated list of supplies and equipment
	Supervisor	<ul style="list-style-type: none"> • Keep a first-aid kit in the vehicle 	Daily	First aid kit available
	Dietician, injection team	<ul style="list-style-type: none"> • Provide nutritional supplements for patients whose body mass index is less than 18 	Daily	Improved nutritional intake
	Management	<ul style="list-style-type: none"> • Monitor cellphone usage for all calls made to 	Monthly	Cost management

THEMES	TARGET GROUP	GUIDELINES	TIME FRAMES	EXPECTED OUTCOME
		establish need for patient contact and duration of calls		
	Management	<ul style="list-style-type: none"> Provide Personal protective equipment (PPE) to the teams 	Daily	PPE provided
	Management	<ul style="list-style-type: none"> Provide essential equipment, such as blood pressure monitors, HB machines and glucometers for the teams 	Daily	Available essential equipment
9 Travel routes	Injection team	<ul style="list-style-type: none"> Plan travel routes to patients' homes prior to leaving the institution 	Daily	Improved time management
10 Transport	Injection team	<ul style="list-style-type: none"> Maintain the cleanliness of the vehicles 	Daily	Vehicles clean
	Management	<ul style="list-style-type: none"> Request for appropriate vehicles, e.g. 4X4's or mobile clinic vans, to provide this service and specific vehicles for use by the MIT to prevent re-allocation of vehicles in the mornings 	29/02/2016	Procured vehicles
	Management	<ul style="list-style-type: none"> Identify a specific time for leaving the institution and communicate to the wards to prevent delays in the routine of the injection team 	01/02/2016	Improved time management
	Management	<ul style="list-style-type: none"> Identify and implement a set deadline for Fleet 	01/02/2016	Set deadline for

THEMES	TARGET GROUP	GUIDELINES	TIME FRAMES	EXPECTED OUTCOME
		management for the receipt of transport requests for the following day so that correct allocation of vehicles can be done to prevent delays for the team when vehicles need to be changed		transport requests
	Injection team	<ul style="list-style-type: none"> Complete trip sheets a day before to prevent delays of the team in the morning 	Daily	Completed trip sheets
	Fleet management	<ul style="list-style-type: none"> In-service team members on how to complete the trip sheet and vehicle check form and how to change a tyre 	15/03/2016	Capacitated staff
	Management	<ul style="list-style-type: none"> Develop a system of vehicle monitoring, such as the installation of a tracker system, especially when the team members have to walk kilometres to patients' homes and cannot monitor the vehicle 	29/02/2016	Vehicles monitored
	Management	<ul style="list-style-type: none"> Develop a system for washing of vehicles 	29/02/2016	Clean vehicles
11 Orientation of the MIT	Management	<ul style="list-style-type: none"> Complete a job description and performance agreement for all new staff entering the injection team services, and working on public holidays must be included in the job description 	On induction to the MIT	Signed job descriptions and performance agreements
	Management	<ul style="list-style-type: none"> Orientation new staff on the programme must be 	Within 2 weeks of	Orientated staff

THEMES	TARGET GROUP	GUIDELINES	TIME FRAMES	EXPECTED OUTCOME
		done comprehensively	employment	
	Management	<ul style="list-style-type: none"> Discuss and consider conditions for staff members who are pregnant 	29/02/2016	Employee wellness
	Injection team	<ul style="list-style-type: none"> Implement activities such as condom distribution or tracing of defaulters must be done when there are few patients 	Daily	Condoms distributed and defaulters traced
12 Structure of the team	Management	<ul style="list-style-type: none"> Implement a team: patient ratio to prevent work overload and work stress 	15/02/2016	Set team: patient ratio
	Management	<ul style="list-style-type: none"> Discuss category of staff allocated per team considering cost for human resources 	29/02/2016	Placement of staff
	Management	<ul style="list-style-type: none"> Request for additional teams to cover the large rural areas 	29/02/2016	Improved service delivery
	Management	<ul style="list-style-type: none"> Identify a co-ordinator to allocate patients per team 	15/02/2016	Effective service delivery
	Management	<ul style="list-style-type: none"> Identify and allocate a manager for the monitoring of the injection teams at the institutions. Managers need to be replaced if they are on leave and when they exit the institution 	15/02/2016	Supervised staff

THEMES	TARGET GROUP	GUIDELINES	TIME FRAMES	EXPECTED OUTCOME
13 Allowances	Management	<ul style="list-style-type: none"> Motivate for rural or danger allowance for the staff who are faced with many challenges in the community 	31/03/2016	Completed motivated letter
	Management	<ul style="list-style-type: none"> Discuss the issue of uniform allowance for TBAs or the provision of uniforms 	31/03/2016	Uniforms provided
	Management	<ul style="list-style-type: none"> Compensate the team members who work on public holidays timeously 	Monthly	Compensated staff
14 Staff support	Management	<ul style="list-style-type: none"> Encourage the psychological upliftment of staff, through referrals to support groups and an Employee Assistance Programme (EAP) 	Daily	Staff wellness
	Management	<ul style="list-style-type: none"> Identify, compliment and support staff for work well done 	Daily	Motivated staff
	Supervisor	<ul style="list-style-type: none"> Implement a specific in-service programme for the outreach services provided by the team 	Monthly	Capacitated staff
	Management	<ul style="list-style-type: none"> Conduct facilitated support visits to the teams 	Quarterly	Adequate supervision

6.5 CONCLUSION

This chapter has discussed the development of guidelines to enhance the utilisation of the mobile MDR-TB outreach injection teams. The guidelines have been developed in the context of the themes identified in Chapter 5. The guidelines address the need to enhance the contributions of the MDR-TB mobile injection team to patient care and the delivery of health services.

CHAPTER 7

CONCLUSIONS AND RECOMMENDATIONS

7.1 INTRODUCTION

This chapter summarises the study, presents the findings, discusses the limitations of the study and makes recommendations to enhance the utilisation of the MDR-TB mobile injection teams.

7.2 RESEARCH DESIGN AND METHOD

The methodology that underpinned this study was a qualitative method of descriptive phenomenology. Phenomenology focuses on the meaning of lived experiences of humans, and was therefore deemed most appropriate for conducting the study (Marshall & Rossman 2006:44). The sample included all ENs and TBAs who met the eligibility criteria. Purposive census sampling was used for this study as it is a study of every unit, everyone or everything in a population. All members of the outreach injection team were interviewed using unstructured interviews. Data was transcribed verbatim and analysed using Giorgi's method of data analysis.

7.3 SUMMARY AND INTERPRETATION OF THE RESEARCH FINDINGS OF THE STUDY

This study described the lived experiences of three ENs and four TBAs in the MDR-TB outreach injection team who had worked at two MDR-TB hospitals over two years. The three EN participants were male and the TBAs consisted of three males and one female.

The purpose of this study was to design an MIT guideline based on the experiences of the team. Individual interviews were conducted with the injection team and the participants expressed their perceptions of the MITs, which were transcribed verbatim. Thereafter the interviews were analysed using Giorgi's method of data analysis. Four broad themes were identified and 73 sub-themes. Using the experiences of the teams,

a set of guidelines for enhancing the utilisation and effectiveness of the MITs was developed, which identified activities and procedures for implementation.

Themes that emerged from the study were as follows:

7.3.1 Perceptions held by the team

The team members indicated that the initiation of the outreach injection programme had been challenging. With no prior knowledge of what was expected, the team commenced the programme in January 2012 with two patients. The team took the discharged patients home and went on a daily basis to the patients' homes to give them injections. The patient numbers steadily increased, indicating to the team that there was an increase in MDR-TB cases in the Ugu District of KZN. The team members felt that the patients showed an appreciation for the programme because they no longer had to wait in long queues to get their treatment. Health education was provided for the patients and their family members to ensure the prevention of the spread of TB, and also to ensure adherence to treatment. All nursing care provided to the patients when they were visited by the teams is documented in the patients' files.

7.3.2 Challenges

The team members related the challenges they had experienced since the beginning of the programme. They felt there was a lack of appreciation from management, and they described the transport challenges that they were faced with, which included unsuitable vehicles, getting stuck, delays in completing trip sheets, and a lack of proper road infrastructure, as most of the patients lived in deeply rural areas. Travelling to the patients' homes was time consuming, which resulted in the patient contact time being minimal. At times the team had to walk up to 10 kilometres to patients' homes to give them their injections and during those times their government vehicles were not monitored. At other times, when it rained, the vehicles sometimes got stuck and the community members had to be asked to assist.

Although patients generally adhered to treatment, there were difficult patients who became violent and a few who defaulted on their treatment and had to be referred to the doctor for further management. Family support was found to be very important to

ensure continued adherence to the treatment programme. Health education was provided for the families as well as for community members, who were curious as to why nurses were visiting the patients at home.

In addition, the team members feared gangsters in the community, dogs, snakes, walking alone to patients' homes, violent patients, and being infected by the patients. The participants explained the challenges and then indicated that they were not given uniform allowances, rural allowances or even danger allowances, yet the service had to be provided daily, even on public holidays.

They also felt unappreciated and undervalued by management. What they saw as a lack of support, leadership and direction had a negative impact on their morale, although they continued working for the programme as it was the only job they could find. On days when there were only a few patients, the teams distributed condoms to taverns, farms and shops in the community. They also screened and traced the contacts of patients infected with MDR-TB.

7.3.3 Support

At the beginning of the programme, the teams used to wash their own vehicles but later management from Hospital B employed a private company to wash the vehicles. There were also communication challenges, as the team members were not given cellphones and had to use their own cellphones to communicate with their supervisors. Such communication is important, as supervisors are helpful when there are issues with the patients, and they assist in resolving such issues. An NGO eventually donated cellphones for each team, which made communication much easier.

There are monthly meetings with management and quarterly meetings with the district office, at which the issues and challenges faced by the teams are discussed. The team members expressed their need for further training to ensure quality patient care, as training sessions specifically related to MDR-TB were provided only at the beginning of the programme and need to be more regular and consistent.

7.3.4 Needs to promote the service

The teams requested further training to ensure more effective service delivery. They also requested that a team:patient ratio be established, as when there are many patients allocated to one team, then patient contact time is minimal. 4x4 vehicles are required for the gravel roads, especially when it rains, as roads become impassable and ordinary vehicles get stuck. Additional teams are required because the number of MDR-TB patients is increasing, as diagnosis by GeneXpert is faster.

Health education for patients, relatives, community members and nurses must be strengthened to prevent the spread of TB and to ensure treatment adherence by patients with MDR-TB. Patients need to be supported during care as the treatment programme is lengthy and requires sustained motivation and commitment from patients. The needs described by the outreach team, if and when attended to, will improve service delivery to the patients in the community.

7.3.5 Integration of King's theory

After analysis of the interviews, the researcher applied the nurse-patient interactions to King's theory to determine whether goal attainment had been achieved, including positive coping techniques and patient satisfaction. Only one patient did not report positive nurse-patient transaction leading to goal attainment and positive coping strategies. This study has shown that through effective communication, a nurse and patient can work together to attain goals, independent of the patient's level of preparedness.

The nurse-patient transaction can effectively be applied to inpatient or outpatient settings, where the nurse and patient have the opportunity to set mutual goals that will help achieve patient satisfaction and effective nursing care. This study demonstrated that when the nurse's and patient's mutual reactions and interactions are congruent based on their individual perceptions, judgements and actions, attainment of the goal is possible.

7.4 CONCLUSIONS

It appears that the outreach MIT experiences many challenges in the community and with the patients allocated to the team. Their experiences with patients are generally positive, yet the challenges that they experience in providing their services outweigh these predominantly positive experiences with the patients. Therefore the team needs to be supported because although they receive support from management at times, it is insufficient. They do, however, receive support from their colleagues and from the wards.

7.5 RECOMMENDATIONS FOR FUTURE RESEARCH

Based on the findings, the researcher makes the following recommendations:

7.5.1 Ugu District mobile injection team

- The drafted guidelines should be implemented and reviewed.
- An intervention study should be conducted to compare the current future findings with findings on the utilisation of the mobile MDR-TB injection team after the recommendations and guidelines formulated in this study have been implemented.

7.5.2 Research in other health districts

Similar research is highly recommended in other health districts to understand the experiences of their injection teams, as this current research may not be generalised to the whole of KZN.

7.6 CONTRIBUTIONS OF THE STUDY

The study contributed towards the development of recommended guidelines in the effective utilisation of MDR-TB mobile injection teams. The study has addressed a very important scientific area whose information is still scarce in our region. Understanding the challenges that may compromise effective and efficient health provision is therefore

essential and this study has added insight to the subject in the studied area. In addition, the study falls in the area of national/local priority and global priority.

7.7 LIMITATIONS OF THE STUDY

These experiences are only those of the MDR-TB mobile injection teams from Ugu District, and cannot be generalised to other districts. The selection of participants was limited, and team members worked together and had similar experiences. Interviews were conducted in English, and although participants understand the language and it is the language used at work, the researcher suspects that using isiZulu may have yielded more information on their experiences.

7.8 CONCLUDING REMARKS

This chapter has outlined the conclusions reached in the study and the limitations of the study, and has made recommendations to improve the utilisation of the mobile MDR-TB injection team. It is envisaged that implementing the guidelines developed in this study will improve the utilisation of the team and in turn ensure effective service delivery and quality care to the patients in the community.

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WHO see World Health Organization.

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ANNEXURES

ANNEXURE A: ETHICAL CLEARANCE FROM THE DEPARTMENT OF HEALTH STUDIES, UNIVERSITY OF SOUTH AFRICA



**UNIVERSITY OF SOUTH AFRICA
Health Studies Higher Degrees Committee
College of Human Sciences
ETHICAL CLEARANCE CERTIFICATE**

HS HDC/246/2013

Date: 20 November 2013 Student No: 3397-332-6
Project Title: Experiences of mobile injection team for multi drug resistant-tuberculosis patients in Ugu District, Kwazulu Natal.
Researcher: Sitha Devi Arjun
Degree: D Litt et Phil Code: DPCHS04
Supervisor: Prof BL Dolamo
Qualification: D Cur
Joint Supervisor: -

DECISION OF COMMITTEE

Approved Conditionally Approved

pp J. Roets

Prof L Roets
CHAIRPERSON: HEALTH STUDIES HIGHER DEGREES COMMITTEE

pp M. Moleki

Prof MM Moleki
ACADEMIC CHAIRPERSON: DEPARTMENT OF HEALTH STUDIES

PLEASE QUOTE THE PROJECT NUMBER IN ALL ENQUIRES



**ANNEXURE B: LETTER SEEKING CONSENT FROM DEPARTMENT OF HEALTH
(PROVINCIAL/DISTRICT)**

I, Ms S.D Arjun, Assistant Nursing Manager employed at Hospital A would like to request permission to collect data on the research topic: Experiences of the mobile MDR-TB injection team in KwaZulu-Natal. Data will be collected from enrolled nurses who are providing outreach services to MDR-TB patients. The study and procedures have been approved by the University of South Africa (UNISA).

The study will contribute to the understanding of the life world of enrolled nurses. The research findings could be used by the nursing management to develop strategies to support the outreach team. It is envisaged that this would ultimately lead to improved patient care. This study will furthermore contribute towards the knowledge base of the nursing profession by documenting the nurses views on their working circumstances and their experiences with MDR-TB outpatients.

Researchers signature

Date

Contact number: _____

ANNEXURE C: LETTER OF APPROVAL: DEPARTMENT OF HEALTH



health

Department:
Health
PROVINCE OF KWAZULU-NATAL

Health Research & Knowledge Management sub-component
10 – 103 Natalia Building, 330 Langalibalele Street
Private Bag x9051
Pietermaritzburg
3200
Tel.: 033 – 3953189
Fax.: 033 – 394 3782
Email.: hrkm@kznhealth.gov.za
www.kznhealth.gov.za

Reference : HRKM 56/14
Enquiries : Mr X Xaba
Tel : 033 – 395 2805

Dear Ms SD Arjun

Subject: Approval of a Research Proposal

1. The research proposal titled 'Experiences of mobile injection team for multi-drug resistant Tuberculosis (MDR-TB) patients in Ugu District, KwaZulu Natal' was reviewed by the KwaZulu-Natal Department of Health.

The proposal is hereby **approved** for research to be undertaken at Dunstan Farrell and Murchison hospital.

2. You are requested to take note of the following:
 - a. Make the necessary arrangement with the identified facility before commencing with your research project.
 - b. Provide an interim progress report and final report (electronic and hard copies) when your research is complete.
3. Your final report must be posted to **HEALTH RESEARCH AND KNOWLEDGE MANAGEMENT, 10-102, PRIVATE BAG X9051, PIETERMARITZBURG, 3200** and e-mail an electronic copy to hrkm@kznhealth.gov.za

For any additional information please contact Mr X. Xaba on 033-395 2805.

Yours Sincerely



Dr E Lutge

Chairperson, Health Research Committee

Date: 12/03/2014

uMnyango Wezempilo . Departement van Gesondheid

Fighting Disease, Fighting Poverty, Giving Hope

ANNEXURE D: LETTER SEEKING CONSENT FROM THE INSTITUTION

Hospital A
Private bag X2
Hibberdene
4220

REQUEST FOR PERMISSION TO CONDUCT A STUDY

I, Ms S.D Arjun, a Doctoral student at UNISA, hereby request permission to conduct a study on: Experiences of the mobile injection team for MDR-TB patients in Ugu District, KwaZulu-Natal. Data will be collected from enrolled nurses and TB Assistants who are providing outreach services to MDR-TB patients. The study and procedures have been approved by the University of South Africa (UNISA).

The study will contribute to the understanding of the life world of enrolled nurses. The research findings could be used by the nursing management to develop strategies to support the outreach team. It is envisaged that this would ultimately lead to improved patient care. This study will furthermore contribute towards the knowledge base of the nursing profession by documenting the nurses' views on their working circumstances and their experiences with MDR-TB outpatients.

For further information, contact Ms SD Arjun at: Cell no. 0836888143 between 07h00-16h00 or email: arjunsd@vodamail.co.za

Researcher's Signature

Date

Contact number: _____

ANNEXURE E: LETTERS OF APPROVAL FROM INSTITUTIONS



health

Department:
Health
PROVINCE OF KWAZULU-NATAL

DUNSTAN FARRELL HOSPITAL
Private Bag x2 Hibberdene 4220
Portion of Mayo Farm
Tel.: 0396991465, Fax: 0396991477
Zibuyile.mthembu@kznhealth.gov.za

Enquiries: Ms. ZA Mthembu
Ref: DFH Research
Date: 06/03/2014

Ms. S.D. Arjun
P.O. Box 1776
KwaDukuza
4450

Dear Ms. Arjun;

RE: PERMISSION TO CONDUCT RESEARCH AT DUNSTAN FARRELL HOSPITAL.

I have pleasure in informing you that permission has been granted to you by the Facility to conduct research on “**Experiences of mobile injection team for MDR-TB patients in Ugu district, KwaZulu-Natal**”.

Please note the following:

1. Please ensure that you adhere to all the policies, procedures, protocols and guidelines of the Department of Health with regards to this research.
2. This research will only commence once this office has received confirmation from the Provincial Health Research Committee in the KZN Department of Health.
3. Please ensure this office is informed before you commence with your research.
4. The Facility will not provide any resources for this research.
5. You will be expected to provide feedback on your findings to the Facility.

Thanking you.

Sincerely;

Ms. Z.A. Mthembu
Acting Chief Executive Officer
Dunstan Farrell Hospital

uMnyango Wezempilo . Departement van Gesondheid

Fighting Disease, Fighting Poverty, Giving Hope



health

Department:
Health
PROVINCE OF KWAZULU-NATAL

MURCHISON HOSPITAL
Main Harding/ Kokstad Rd, Port Shepstone 4240
Private Bag X 701, Port Shepstone, 4240
Tel.:039 687 7311, Fax: 039 687 7497
www.kznhealth.gov.za

Enquiries: Dr O Dabibi
Extension: 106
04/03/2014

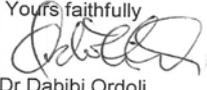
Ms. S. D. Arjun
University of South Africa (UNISA) Post-graduate student

Re: Permission to conduct a study at Murchison hospital

Your request for permission to conduct a study on the experiences of the outreach mobile injection team from Murchison Hospital for MDR-TB patients living in the community in UGU district is hereby given provisional approval.

The formal/final approval to embark on above study is subject to you securing KZN Health department research committee permission/approval.

Yours faithfully


Dr Dabibi Ordoli
Medical manager

**SENIOR MEDICAL SUPERINTENDENT
MURCHISON HOSPITAL
PRIVATE BAG 701
PORT SHEPSTONE 4240**

UMnyango Wezempilo. Department van Gesondheid

Fighting Disease, Fighting Poverty, Giving Hope

ANNEXURE F: CONSENT FORM

I am a student studying with the University of South Africa (UNISA). I am carrying out a research study entitled: Experiences of mobile injection team for multi drug resistant-tuberculosis (MDR-TB) patients in Ugu District, KwaZulu Natal. The study is undertaken towards the fulfillment of the requirements for the degree Doctor of Literature and Philosophy in Health Studies. The purpose of this phenomenological research is to explore and describe your personal experiences in the mobile injection team for MDR-TB patients.

Data for the study will be collected through individual interviews that may last approximately 60 minutes. The interview will be conducted in a place and time most convenient to you. Your participation to the study is voluntary. The interview will be tape recorded and transcribed verbatim. The researcher will handle all information collected with the utmost confidentiality and your participation will remain anonymous and no names will appear on the final report. You have a right to withdraw from the study at any given time without having to give an explanation. Your withdrawal from the study will have no repercussions.

Your participation is important in this research study as it could be used to develop a mobile injection team home assessment tool.

Thank you.

I accept participation.

Participant signature: _____ **Date:** _____

Researcher signature: _____ **Date:** _____

ANNEXURE G: TOPIC GUIDE

The central question:

“What are your experiences in the Ugu District MDR-TB mobile injection team?”

Probing questions:

- Tell me more about your experiences in the mobile injection team.
- Tell me about the challenges that you are faced with.
- What support is available at your institution for the team?
- What are your needs to promote this service?

NATURAL MEANING UNITS	CONCRETE LANGUAGE: Central theme i.e. the issue which dominates the unit , in the participants own language	LANGUAGE OF SCIENCE	REVELATORY THEMES
<p>EN 1: "Eh ... I have been with the outreach since January 2012, started January 2012 Yes. It's a long time, yes!"</p> <p>EN 2: "First when it started in 2012 January."</p> <p>TBA 1: "I started in December 2011."</p> <p>EN 3: "One year three months."</p> <p>TBA 2: "Over six months now."</p> <p>EN 4: "I've been with the outreach team, it's my sixth month now cos I started in the wards for two months, so I'm here for eight months, so I've been with the outreach team for six months."</p> <p>TBA 3: "We started the team on 2012 January ... On January 2011, 2012 we started the programme."</p>	<p>Start of the programme</p>	<p>Staff were employed in December 2011 and the injection team commenced in January 2012</p>	<p>All seven staff have six months or more experience with the injection team</p>

NATURAL MEANING UNITS	CONCRETE LANGUAGE: Central theme i.e. the issue which dominates the unit , in the participants own language	LANGUAGE OF SCIENCE	REVELATORY THEMES
1 PERCEPTIONS			
TBA 2: “here in Ugu District there are lots of people who got MDR.”	Lots of people with MDR in Ugu District	Many people diagnosed with MDR-TB	Increased MDR-TB cases in Ugu District
EN 1: “when we started it was a little bit difficult.”	Starting was difficult	Difficulty at commencement of programme	Initiation of the programme was difficult
TBA 1: “Eh ... I’m experiencing working in a team firstly I’m experiencing eh... eh... teamwork and I’m experiencing eh... education skills like educating people education, educating people about different topics concerning health eh... working with eh... people, sick people eh... ah... and especially teamwork with the team that we are working with.”	Teamwork and health education skills	Working as a team and utilisation of skills	Teamwork is important Education skills Working with people (community) Working with sick people

NATURAL MEANING UNITS	CONCRETE LANGUAGE: Central theme i.e. the issue which dominates the unit , in the participants own language	LANGUAGE OF SCIENCE	REVELATORY THEMES
2 CHALLENGES			
<p>EN 4: "... That patient didn't give me ... gave me a hard time cos each and every time we go there maybe he is going to have a knife you see, he wasn't totally, he wasn't totally right upstairs if I can say cos you can never know what he can do."</p> <p>EN 4: "... the sangoma was not that violent but then she had a sjambok she actually tried to hit me with the sjambok just then I closed the window."</p> <p>EN 2: "...Sometimes the patients they, if they don't want if they don't want injections anymore they just leave dogs for you so that you can't get in and they can't get injections ..."</p>	<p>Patient always having a knife</p> <p>Patients can be scary</p> <p>Release dogs to prevent you from giving them injections</p>	<p>Patients can be violent</p>	<p>Fear of being attacked by mentally unstable patients</p> <p>Fear of violence by patients</p> <p>Fear of being hit with a sjambok</p> <p>Experience of violence</p>
<p>EN 2: "... rain is falling, is falling for four days then for the four days the patient is not getting injections."</p> <p>TBA 1: "Eh eh, eh Like if it's raining ... There is mud and because we working in very, very deep rural areas eh where access to patients is a challenge to us, if it's raining."</p>	<p>When it rains, patients don't get their injections</p>	<p>Bad weather conditions result in patients not being injected</p>	<p>Access to patients when it is raining is a challenge</p> <p>Patients do not get their injections when it is raining</p>

NATURAL MEANING UNITS	CONCRETE LANGUAGE: Central theme i.e. the issue which dominates the unit , in the participants own language	LANGUAGE OF SCIENCE	REVELATORY THEMES
3 SUPPORT			
<p>TBA 3: “Actually I can’t say there is support as such except the department that I’m working in because colleagues it should be operational manager they understand the situation that we face whatever matter that you report to them, they report to management sometimes it used to delay from the management because management is the umbrella of everything in the hospital so if it’s up there I can report to my operational manager and forward the matter to them. If they don’t take anything further then it will lapse like that.”</p> <p>TBA 2: “... they don’t give us the support because you also ask to go with us when you are going to the, when you are going to the patient then but since, since, since I’m started here in June nothing accompanied us when we are going to the patient ...”</p>	No support from management	Lack of management support	<p>Lack of support</p> <p>Request for management to accompany them to see what the team faces</p>

NATURAL MEANING UNITS	CONCRETE LANGUAGE: Central theme i.e. the issue which dominates the unit , in the participants own language	LANGUAGE OF SCIENCE	REVELATORY THEMES
4 NEEDS IN PROMOTING THIS SERVICE			
<p>EN 3: “Patients have the side effects, most of them they have the side effects, others are vomiting, others they have running stomach, cramps, yes but we always tell them this will pass. Sometimes it only takes one month then it go away.”</p> <p>EN 3: “we advise them to continue with the treatment not stop using the treatment continue until you are better cos when they when a person is sick when immediately they take the MDR treatment and the person is getting well and then they always tell us that now I’m feeling well although I’m having those side effects I’m much better.”</p>	<p>Patients experience side effects that go away after a month</p> <p>Support to the patient to continue treatment even if they feel unwell</p>	<p>Patient must be supported</p>	<p>Support provided for patient experiencing side effects</p>
<p>EN 2: “Some of the things patient like the community when each and every day we come to visit the patient they are asking so that the patient sometimes they don’t feel comfortable ... I think maybe that if the community must be health educated by the MDR this will help maybe, help those community yeh the community to be given some health education.”</p> <p>EN 2: “Yes, sometimes like the neighbour will come and ask the questions like how much are we safe, if what we have to do to make ourselves safe ... they do ask how much they are safe and what to do to protect themselves so.”</p>	<p>Involve the community</p> <p>Misunderstanding of what MDR-TB is as they see the health department coming in again and again</p> <p>Health education is required</p> <p>Neighbours not comfortable as they need to protect themselves</p>	<p>Community involvement</p>	<p>Community must be health educated so that they understand</p>

