

**ASSESSMENT OF ACCESIBILITY AND USE OF A TUBERCULOSIS
SCREENING TOOL AMONG HEALTH CARE WORKERS IN HIV
CARE AND TREATMENT CLINICS IN DAR ES SALAAM REGION**

Rose Thomas Olotu

**Master of Public Health Dissertation
Muhimbili University of Health and Allied Sciences
October, 2013**

**ASSESSMENT OF ACCESSIBILITY AND USE OF A
TUBERCULOSIS SCREENING TOOL AMONG HEALTH CARE
WORKERS IN HIV CARE AND TREATMENT CLINICS IN DAR ES
SALAAM REGION**

By

Rose Thomas Olotu

**A Dissertation Submitted in Partial Fulfilment of the Requirements for the Degree
of Master of Public Health of
Muhimbili University of Health and Allied Sciences**

**Muhimbili University of Health and Allied Sciences
October, 2013**

CERTIFICATION

The undersigned certify that he has read and hereby recommend for acceptance by Muhimbili University of Health and Allied Sciences a dissertation entitled *Assessment of accessibility and use of a Tuberculosis screening tool among health care workers in HIV Care and Treatment Clinics in Dar es Salaam, Tanzania*, in (Partial) fulfilment of the requirements for the degree of Master of Public Health of the Muhimbili University of Health and Allied Sciences.

Prof. Phare G.M. Mujinja, BA (Hons), CIH, MA (Econ), MPH, PhD
(Supervisor)

Date: _____

DECLARATION AND COPYRIGHT

I, **Rose Thomas Olotu**, declare that this **dissertation** is my own original work and that it has not been presented and will not be presented to any other university for a similar or any other degree award.

Candidate's signature..... Date.....

This dissertation is copyright material protected under the Berne Convention, the Copyright Act of 1999 and other international and national enactments, in that behalf, on intellectual property. It may not be reproduced by any means, in full or in part, except for short extracts in fair dealing, for research or private study, critical scholarly review or discourse with an acknowledgement, without the written permission of the Directorate of Postgraduate Studies, on behalf of both the author and the Muhimbili University of Health and Allied Sciences.

ACKNOWLEDGEMENT

I would like to thank my supervisor Prof. Phare G.M Mujinja for his tireless supervision, support, guidance and inspiration towards the preparation, production and completion of this Dissertation. My gratitude also goes to Dr. Tumaini Nyamhanga, Dissertation Module Convener for MPH Degree Course for his support, and guidance towards completion of this study I would like to thank Mr. Makwaya and Dr. Elia Mbagha from the department of epidemiology and Biostatistics at MUHAS for guiding on statistical aspects.

Also my thanks go to the regional medical officer, Dr Judith Kahama, regional AIDS control coordinator, Dr. Hawa Kawawa and district medical officers for Ilala, Kinondoni and Temeke Districts for their support and permission to conduct this study.

I would like to thank the Centre of Disease Control for granting sponsorship of my study. I would also like to thank Dartmouth College of Medicine for their support on extra funding required for data collection.

I thank both the government and private hospitals authorities for granting permission to conduct this study at their respective health facilities and for the sincere support that was extended to me throughout my field work. My sincere thanks go to Alicia, Naomi and Shufaa for assisting me in data collection process. Furthermore, special thanks should go to all health care workers for their responses and cooperation in providing required information for this study.

I would also like to thank my MPH colleagues' class 2011/2012 for their academic support and encouragement while preparing this work. Special heartfelt thanks should go to my lovely daughter for her support and encouragement during the course work and dissertation phase of my studies.

Special thanks also go to my parents Mr and Mrs Thomas Olotu, my beloved sisters and brothers for their encouragement and support.

DEDICATION

I dedicate this dissertation to my wonderful family. Particularly to my understanding and patient husband, Emmanuel Bandora, who supported and encouraged me until the time I completed this work, and to our precious daughter Dorothy, who is the joy of our lives.

ABSTRACT

Background: The World Health Organization recommends countries to embark on intensified Tuberculosis case finding among People Living with HIV/AIDS (PLHA) by using a simplified clinical algorithm for Tuberculosis (TB) screening tool. Tanzania adopted the use of the screening tool in 2007. However, there is scant information on the extent of use and availability of the tool among health care workers who are using it to screen PLHA.

Objective: To assess the extent of use and accessibility of Tuberculosis screening tool in health facilities in detecting Tuberculosis cases among People Living with HIV/AIDS in Care and Treatment Clinics in Dar-es-Salaam.

Methodology: Explorative cross-sectional study was conducted among health care workers providing services to PLHA in Care and Treatment Clinics (CTCs). A total of 208 health care workers were enrolled in the study. A total of 200 patient's records files registered into HIV CTCs for the past 6 months prior the commencement of the study were assessed for correctness, completeness and consistency of filling TB screening tool, CTC2 card and patient clinical notes. Data was collected using structured face-to-face questionnaires; patients' files were also assessed using a check list.

Results: There was no statistically significant association between the respondents level of education ($p=0.62$), their professions ($p=0.91$) and working experiences ($p=0.88$) with the use of TB screening tool respectively. However training on the use of TB screening tool, those who are aware and respondents who were supervised all three yielded a strong relationship of using TB screening tool with statistical significant level of ($p = 0.001$). Majority of respondents (87 percent) reported that the TB screening tool was always accessible when they wanted to use it. About (75 percent) of those who reported to have had missed the tool, had missed it more than once. About (43 percent) of the respondents were not aware of the existence of an ordering system in the health facility. More than 85 percent of respondents reported to have had been supervised at least once. Despite the

supervision, (72 percent) of the respondents reported to had received feedback on the gaps in filling the tool. However a significant number of TB screening tools were not filled at all (135 out of 200).

Conclusions and recommendations

The tool has been used by the majority of the health care workers and in most cases has been accessible. Continual training to increase awareness and supportive supervision should be emphasized to improve the use of the TB screening tool to improve the detection rate of TB among PLHAs. More studies should be conducted to find a way of integrating the TB screening tool with the CTC2 cards, in order to reduce the amount of time spent on paper work.

TABLE OF CONTENTS

	Pages
CERTIFICATION	ii
DECLARATION AND COPYRIGHT	iii
ACKNOWLEDGEMENT	iv
DEDICATION	v
ABSTRACT	vi
TABLE OF CONTENTS	viii
LIST OF APPENDICES	xi
LIST OF TABLES	xii
LIST OF FIGURES	xiii
LIST OF ABBREVIATIONS	xiv
OPERATIONAL DEFINITIONS	xv
CHAPTER 1	1
1.0 INTRODUCTION	1
1.1 Background information	1
1.2 Statement of the problem	2
1.3 Rationale of the study	4
1.4 Research questions.....	6
1.4.1 Specific research questions	6
1.5 Objectives.....	6
1.5.1 Broad objective.....	6
1.5.2 Specific Objectives	6
CHAPTER 2	8
2.0 LITERATURE REVIEW	8
2.1 Intensified Tuberculosis case finding among People Living with HIV.....	8
2.2 Use of Tuberculosis screening among People Living with HIV/AIDS.....	9
2.3 Awareness of Health care workers on importance of the Tuberculosis screening tool.....	10
2.4 Accessibility to Tuberculosis screening tool by health care workers.....	12

2.5	Supportive supervision and improvement the use of Tuberculosis screening tool	13
CHAPTER 3.....		15
3.0	METHODOLOGY.....	15
3.1	Introduction	15
3.2	The study area.....	15
3.3	Study design	15
3.4	Study population.....	15
3.5	Inclusion and exclusion criteria	16
3.5.1	Inclusion and exclusion criteria for health facilities providing HIV Care and Treatment services	16
3.5.2	Inclusion and exclusion criteria for health care workers	16
3.5.3	Inclusion and exclusion criteria for patient’s records files	16
3.6	Sample size and sampling methods	17
3.6.1	Sampling techniques	17
3.6.2	Selection of health care workers.....	18
3.6.3	Selection of patient’s records files.....	18
3.7	Data collection techniques and tools	18
3.8	Recruitment and training of research assistants	19
3.9	Study Variables	19
3.10	Pre-testing of the research instrument	19
3.11	Data collection techniques and tools	20
3.11.1	Health care workers	20
3.11.2	Patients records files	20
3.12	Data quality control	21
3.13	Process of collected data	21
3.14	Data analysis.....	21
3.14.1	Data Analysis Process.....	21
3.15	Ethical considerations	22
3.16	Limitation of the study.....	22

CHAPTER 4.....	23
4.0 RESULTS	23
4.1 Characteristic of study respondents	23
4.2 Characteristics of respondents and use of Tuberculosis screening tool.....	25
4.3 Awareness of respondents on the use of Tuberculosis screening tool.....	27
4.4 Accessibility to Tuberculosis screening tool by health care workers.....	32
4.5 Level of accuracy in filling the Tuberculosis screening tool	34
4.6 Supportive supervision and improving the use of Tuberculosis screening tool	37
CHAPTER 5.....	40
5.0 DISCUSSION	40
5.1 Introduction	40
5.2 Use of the Tuberculosis screening tool.....	40
5.3 Respondents' awareness in utilizing the Tuberculosis screening tool.....	40
5.4 Accessibility of Tuberculosis screening tool	42
5.5 Accuracy in filling the Tuberculosis screening tool	42
5.6 Supportive supervision and improving the use of Tuberculosis screening tool	43
CHAPTER 6.....	45
6.0 CONCLUSION AND RECOMMENDATIONS	45
6.1 Conclusion.....	45
6.2 Recommendations.....	45
REFERENCES	46
APPENDICES.....	50

LIST OF APPENDICES

	Pages
Appendix 1: Informed consent form, English version	50
Appendix 2: Informed consent form, Swahili version	53
Appendix 3: Questionnaire (English version)	56
Appendix 4: Questionnaire (Kiswahili version)	66
Appendix 5: Assessment checklist questionnaires (English version)	79
Appendix 6: Orodha ya Maswali ya kutathmini (Kiswahili version)	82
Appendix 7: Letter approval of ethical clearance	85
Appendix 8: Introductory letter from Kinondoni Municipal Council	86
Appendix 9: Introductory letter from Ilala Municipal Council	87
Appendix 10: Introductory letter from Temeke Municipal Council	88

LIST OF TABLES

		Pages
Table 1:	Socio- demographic characteristics of respondents	24
Table 2:	Respondents characteristic by use of Tuberculosis screening tool	26
Table 3:	Source of information's on Collaborative TB/HIV activity reported by respondents	27
Table 4:	Frequency of respondents responses on recommendation of screening Tuberculosis among PLHA.....	28
Table 5:	Action taken by study respondents when patients do not show any TB symptoms and signs.....	29
Table 6:	Action taken by respondents when a patient shows symptoms and signs of TB	30
Table 7:	Problems faced as reported by respondents during screening PLHA by using TB screening tool	31
Table 8:	Suggestions of respondents on improving and detecting patients infected by both HIV and TB.....	32
Table 9:	Use, source and availability of Tuberculosis screening tool at health facilities.....	33
Table 10:	Number of Tuberculosis screening tool correctly or incorrectly filled by type of health facility	34
Table 11:	Tuberculosis screening tool filled with comparison to clinical notes	35
Table 12:	TB screening tool filled with CTC2 cards	35
Table 13:	CTC 2 cards filled with clinical notes	36
Table 14:	Comparison of accuracy in TB screening tool, clinical notes and CTC2 cards by health facility type	37
Table 15:	Number of times respondents were supervised.....	38
Table 16:	Supportive supervision	39

LIST OF FIGURES

	Pages
Figure 1: Conceptual framework:	5
Figure 2: Time lapse between the day of interview and the last time respondents used the Tuberculosis screening tool on PLHA.....	28
Figure 3: Last time respondents filled TB screening tool	29

LIST OF ABBREVIATIONS

AIDS	-	Acquired Immune Deficiency Syndrome
ARV	-	Anti Retroviral Therapy
CPT	-	Cotrimoxazole preventive therapy
CTC	-	Care and Treatment Clinics
EPTB	-	Extra-pulmonary Tuberculosis
HC	-	Health center
HCW	-	Health care workers
HIV	-	Human Immune Virus
IC	-	Infection Control
ICAP	-	International Center for AIDS Care and Treatment Program
ICF	-	Intensified case finding
IPT	-	Isoniazid preventive therapy
MOHSW	-	Ministry of Health and Social Welfare
MUHAS	-	Muhimbili University College of Health and Allied Science
NACP	-	National AIDS Control Program
NEPHAK	-	National Empowerment of PLHA and AIDS in Kenya
NETMA	-	Network of Men Living with HIV and AIDS in Kenya
NTCP	-	National Tuberculosis Control Program
NTLP	-	National Tuberculosis and Leprosy Programme
OI	-	Opportunistic Infection
PHC	-	Primary health care
PI	-	Principle investigator
PLHA	-	People living with HIV/AIDS
PTB	-	Pulmonary Tuberculosis
PR	-	Principal researcher
RA	-	Research assistant
SSSP	-	Social Science Statistical Package
SV	-	Supervisor
TB	-	Tuberculosis
WHO	-	World Health Organization

OPERATIONAL DEFINITIONS

Accuracy: Is defined as the extent to which the TB screening tool has been filled correctly; that include all the components of the form that is, three names, date of birth, age, sex, physical address and all questions with option No/Yes are ticked appropriately. Any missing information that is supposed to be filled is regarded as incorrect filling. Those which were not filled at all are regarded as blank.

Accessibility of TB screening tool: Is defined as if health care workers need to use the TB screening tool they can find it or obtain it without difficulty.

Clinical notes: Information written by clinician when taking patients present complains.

Comprehensive filling of Tuberculosis screening tools: means filling tool which is in the form of questionnaire for all patients the HCWs have attended. This doesn't mean the forms have been filled accurately but at least all patients have a form filled.

Effective Tuberculosis screening among PLHIV: This is the process used to actively detect TB cases in an individual living with HIV/AIDS.

Extent of supportive supervision: Is defined as frequency to which health care workers where supervised on monthly, quarterly or biannual basis.

Health facility: in the context of this study, health facility will mean both registered public and private facilities used in providing health care services.

Health care workers: Individuals providing health care services at health facilities.

Tuberculosis: is a chronic infectious disease caused by *Mycobacterium tuberculosis*.

Patient load: A high patient load in this study has been described as doctors and nurses who are working at care and treatment clinics attending to more than 25 to 35 clients per day.

Tuberculosis screening tool: is the standardised tool developed with five standard questions used for screening patients to identify the presence or absence of symptoms of Tuberculosis.

CHAPTER 1

1.0 INTRODUCTION

1.1 Background information

Co-infection with Human Immune Deficiency Virus (HIV) and Tuberculosis (TB) remains to be one of the serious challenges faced by the health-sector. In a population, the lifetime risk of developing active TB once infected, in absence of HIV infection, is about 10 percent and in HIV infected individuals this risk increases tenfold [1]. This has resulted into increase in the number of TB cases [2], [3]. Furthermore, the proportion of smear-negative pulmonary TB (PTB) and extra-pulmonary (EPTB) is higher among HIV co-infected TB patients.

The interaction between TB and HIV infection is complex. At individual patient, HIV infection weakens the immune system and increases the susceptibility to TB. Likewise, HIV increases the likelihood of reactivation, reinjection and progression of latent TB infection to active disease. Without treatment and prophylaxis, People Living with HIV/AIDS (PLHA) have a 20–30 times higher lifetime risk of developing active TB as compared to individual without HIV infection [4]. In 2010, PLHA accounted for about 13 percent of all new TB cases worldwide, and about 360,000 people died from HIV-related TB. It also alters the clinical presentation of TB, complicates the follow-up and compromises the response to anti-TB treatment [5]. HIV is the strongest risk factor for developing active TB disease, and in some countries up to 82 percent of people with TB have HIV.

By the end of 2011, it was estimated 34 million [31.6 million–35.2 million] PLHA worldwide. Sub-Saharan Africa remains the region most heavily affected by HIV. About 68 percent of all PLHA resided in Sub-Saharan Africa, a region with only 12 percent of the global population [6]. About one third of PLHA are co-infected with TB [7]. Collaborative activities between national TB and HIV programmes are essential to prevention, diagnosis and treatment of TB among PLHA, and HIV among people with TB. For the countries with high prevalence of HIV, the first priority for the National TB Control Programmes

(NTCP) should be to concentrate on improving TB cure and active case detection [8]. Intensified case finding (ICF) by using TB screening tool was envisaged to be integrated and used in the all newly enrolled and in the follow-up of PLHA in Care and Treatment Clinic (CTC) [4]. This has been a strategy for early identification and prompt treatment of all TB cases among PLHA to improve patient outcomes and reduce TB transmission in the community.

The 2010 global reports indicate that 58 percent of PLHA attending CTC were screened for TB in their last visit using the proposed World Health Organization (WHO) TB screening tool with five questions. In Tanzania the National TB and Leprosy Programs (NTLP) report indicated to have trained 832 health care workers' (HCWS') in collaborative TB/HIV activities [9]. However, available information from most African countries including Tanzania with high burden HIV and TB have shown low coverage of TB case notification among PLHA attending CTC [10]. Data collected from Southern Africa in 2006 and Nigeria in 2007 showed that only 1.83 percent and 2.25 percent respectively of the estimated number of PLHA had been screened for TB [11].

1.2 Statement of the problem

TB is a leading cause of mortality and morbidity among PLHA mostly in their reproductive and productive age-groups; responsible for more than a quarter of the deaths among PLHAs. The availability of TB drug regimens that have resulted into high cure rates has resulted into TB treatment being amongst the most cost-effective health interventions.

People with HIV infection are increasingly infected with TB because HIV weakens their immune system [12], [13]. Patients with TB infection, co-infected with HIV, have a 20-30 times higher risk of developing TB diseases during their lives, than TB infected person without HIV infection [14].

In responding to the dual epidemics of HIV and TB, the WHO in 2004 issued an interim policy for collaborative TB/HIV activities and subsequently a revised policy in 2012. The policy recommends the use a simplified clinical algorithm for TB screening that relies on

the absence or presence of four clinical symptoms (current cough, weight loss, fever and night sweats) to identify people eligible for IPT or for further diagnostic work-up of TB infection [15].

Tanzania started implementing TB/HIV collaborative activities one year after the WHO issued the interim policy by developing its National policy guideline for collaborative TB/HIV activities. In 2007 the Ministry of Health and Social Welfare (MOHSW) in Tanzania adopted the use of a simple TB screening tool developed by WHO to be used in all HIV CTCs, to increase the number of patients with co-infection.

About 1.8 million people in Tanzania are living with HIV [17]. In immunocompetent individuals with TB infection the lifetime risk of developing active TB disease is 10 percent in contrast with TB infected patient co-infected with HIV where the annual risk of developing TB disease is 5-8 percent [16], [17]. It is estimated that with effective active TB screening Tanzania would have identified 114,000 PLHA who are co-infected with TB, instead only 21,662 PLHA who were identified [9]. This low rate of screening is surprising, given that TB causes a third of global HIV/AIDS death [18].

Although there has been reported an increase in TB screening among PLHA, but inconsistency in using the TB screening tool has led to missed opportunity and lower TB cases suspects. HCWs characteristics towards use and availability of TB screening tool is thought to contribute to missed opportunity of screening TB among PLHA in Tanzania. There is no study which has been conducted to assess the use and availability of TB screening tool in HIV CTCs in Tanzania.

Experience from supportive supervision by MOHSW and implementing partners show that TB screening tool are not consistently filled and what is filled is often not translated to action as required by the policy [19].

Situational analyses conducted in three districts in Rwanda on TB detection, Care and Treatment for PLHA in 2011, indicated that despite the effort of the Government of Rwanda to roll out TB/HIV collaborative activities in 2005[20], the screening of TB using

the recommended WHO questionnaire was not routinely done in most facilities; and whenever the filling of the questionnaire was done it was not accurately filled for every HIV patient attending the clinic in the health facilities surveyed [21]. The study further noted that, only one of the three district hospitals reported to refer HIV patients for routine TB screening based on presentation of TB symptoms and history of previous contact with TB patients.

Low identification of TB cases among PLHAs has been attributed to accuracy and irregular filling of the TB screening tool, ineffective use of the TB screening tool by HCWs, and loss to follow of TB/HIV patients during referral between CTC clinics. As a consequence, the effectiveness and efficiency to promptly identify TB infection among PLHA has not been fully realised. This implies that the TB screening tool has not been used appropriately to be able to increase the number of detected patients as expected.

The purpose of this study was therefore to assess the use and accessibility of TB screening tool in health facilities in detecting TB cases among PLHAs attending Care and Treatment Clinics in Dar es Salaam. Specifically, the study sought to determine the proportion of HCWs who ever used the TB screening tool for all patients seen during the past six months prior the study, to explore the awareness of HCWs on the use of TB screening tool, to explore the accessibility of TB screening tool as perceived by HCWs, to assess the level of accuracy in filling TB screening tool in health facilities providing HIV CTC services and to assess the extent of supportive supervision conducted in health facilities providing CTC services to PLHA with the aim of improving the use of the tool.

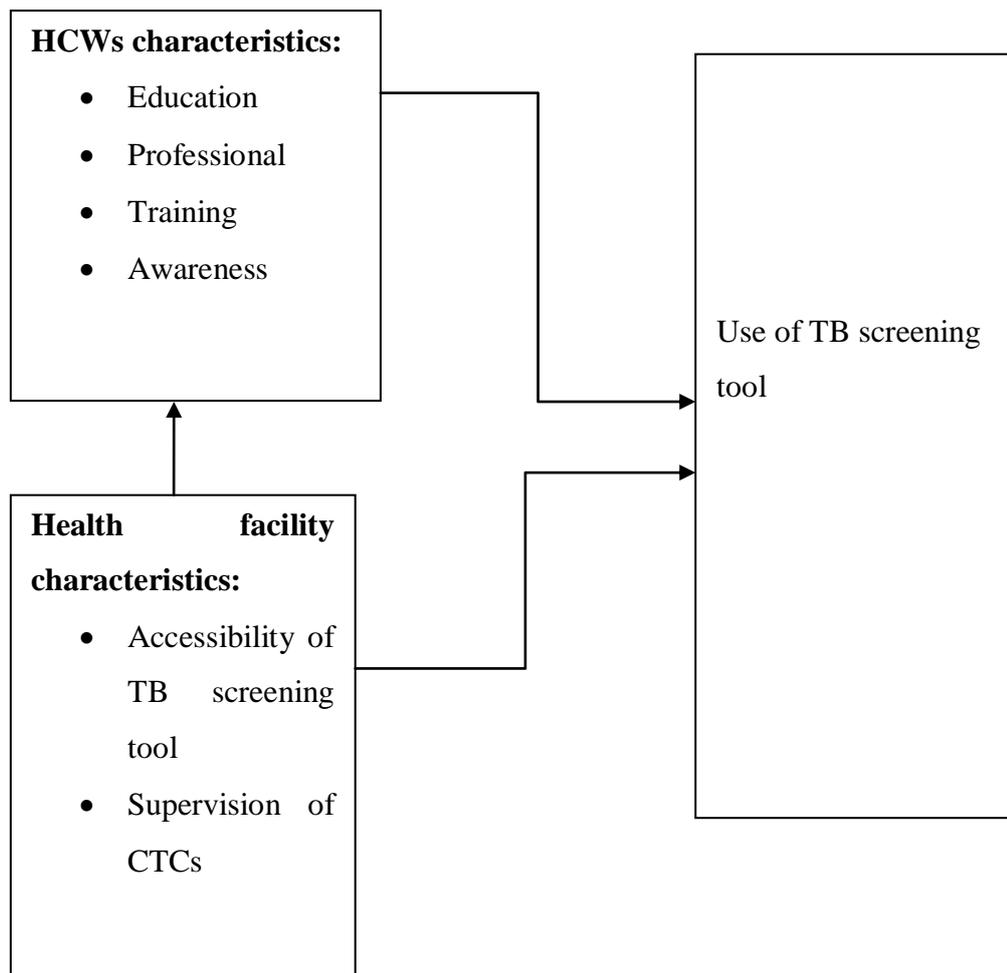
1.3 Rationale of the study

This study was designed to assess the use and accessibility of Tuberculosis screening tool in HIV Care and Treatment Clinics.

The findings of this study contribute to a more in-depth understanding of the underlying factors that contribute to ineffective use and accessibility of TB screening tool in HIV CTCs in Dar-es-Salaam. Furthermore, the results of this study can be used by stakeholders, policy and decision makers in Dar es Salaam who are implementing TB/HIV collaborative

activities to review the administration of the tool in the program. Specifically, the results will inform program manager to design effective measures and strategies to increase the use of TB screening tool and consequently increase the detection among PLHA; to meet the National goal of screen every PLHAs for TB.

Figure 1: Conceptual framework:



Source: Researcher 2012

1.4 Research questions

Main research question: To what extent is the Tuberculosis screening tool used by health care workers and its accessibility for detecting Tuberculosis cases among People Living with HIV/AIDS in Care and Treatment Clinics in Dar es Salaam?

1.4.1 Specific research questions

- (i) What proportion of health care workers had ever used the Tuberculosis screening tool?
- (ii) To what extent are the health care workers aware of the usefulness of Tuberculosis screening tool?
- (iii) To what extent the TB screening tool is accessible by HCWs?
- (iv) What is the level of accuracy in filling the Tuberculosis screening tool at health facilities providing HIV care and treatment services to people living with HIV/AIDS?
- (v) To what extent are health care workers supervised to improve the use of the Tuberculosis screening tool to increase the case detection among People Living with HIV/AIDS?

1.5 Objectives

1.5.1 Broad objective

To assess the extent of use and accessibility of Tuberculosis screening tool by health care workers in detecting Tuberculosis cases among People Living with HIV/AIDS in Care and Treatment Clinics in Dar-es-Salaam region.

1.5.2 Specific Objectives

- (i) To determine the proportion of health care workers who ever used the Tuberculosis screening tool for all patients seen during the past 6 months.
- (ii) To explore the awareness of health care workers on the use of Tuberculosis screening tool
- (iii) To explore the accessibility of the TB screening tool as perceived by health care workers.

- (iv) To assess the level of accuracy in filling Tuberculosis screening tool in health facilities providing HIV care and treatment services to people living with HIV/AIDS
- (v) To assess the extent of supervision conducted in health facilities providing HIV care and treatment services to people living with HIV/AIDS with the aim of improving the use of the TB screening tool

CHAPTER 2

2.0 LITERATURE REVIEW

2.1 Intensified Tuberculosis case finding among People Living with HIV

Globally Tuberculosis (TB) is the leading cause of morbidity and mortality among HIV and AIDS patients accounting for about 30 percent of all death among HIV/AIDS patients [22], [23]. Globally, about 11 percent of new adult cases of TB are also HIV/AIDS co-infected and in Sub Saharan Africa 31 percent of new TB cases are also TB- HIV/AIDS co-infected [24]. In Tanzania TB is spreading rapidly due to the high prevalence of HIV infection signifying the need of steps to be taken urgently to stop this spread.

The integration of TB and HIV activities is an essential strategy for decreasing the burden of TB and preventing its spread in PLHA. This includes TB screening and intensified case finding (ICF) in the clinical settings where people with HIV infection receive their care and treatment services. All patients with HIV infection should undergo routine screening to determine whether they may have been infected with TB or not. Screening for TB disease can be done with the administration of a simple questionnaire asking for the presence of symptoms related to possible TB disease.

Intensified case finding is a symptom screen and screening of TB using the recommended questionnaire is not meant to provide a definitive diagnosis. It is the first step toward making a TB diagnosis, and aims to detect TB cases as early as possible among PLHAs [25]. Despite the WHO recommendation for the countries to embrace on ICF of TB cases, National Tuberculosis Control Program (NTLP) are relying on the traditional way of passive TB case findings. This approach puts the sole responsibility to patients to self report on symptoms during seeking health services. Since, HIV masks the clinical presentation of TB; this poses a significant risk for many PLHAs to early seek medical care [26]. The use of screening questionnaire provide opportunity for HCWs and other service providers to actively screen PLHAs for presence of symptoms of TB regularly in every visit to the clinic [10].

A study conducted in Kenya to assess universal access to TB and HIV services shows that, HIV clinics have a policy in place on screening PLHA for TB symptoms. It was noted that screening of PLHA for TB symptoms is done either when they came for their care and treatment services, when they visit the facility for the first time, when they request for HIV test, when they present with TB symptoms or when they are initiated with ARV. All the respondents agreed that TB suspects are referred for confirmatory test of TB before medication is initiated and TB diagnostic is done within the same facility [27].

2.2 Use of Tuberculosis screening among People Living with HIV/AIDS

Screening of TB suspects using symptom based questionnaires provides a quick, cheap and convenient way to identify individuals at a high risk of TB. Individuals identified as TB suspects by the simple clinical algorithm need to be investigated further using definitive tests such as sputum microscopy, chest radiography and TB culture. Tanzania has been implementing the TB/HIV collaborative activities including intensified TB case finding among HIV patients.

A study conducted in Addis Ababa, Ethiopia to assess the health care delivery system for activities to decrease the burden of TB among PLHA revealed that very high proportion (90 percent) of PLHAs who were screened for TB, screening was done especially at the first visit; whereas, on subsequent follow-up visits it would be performed mainly if clients report any symptoms [28].

This was reflected in 14.0 percent of the study participants were found to have active TB during chronic care follow-up visits. On the other hand, the finding showed that 29 percent of all 406 interviewed participants had developed TB before they knew they were HIV positive. This was consistent with the fact that there is improvement of condition of PLHA as soon as they get enrolled and receive care, treatment and support services. This has a positive response on the immunity and decrease in the risk of opportunistic infection (OI) [28].

A study conducted in Uganda on health system barriers affecting the implementation of collaborative TB/HIV services found that in HIV clinics, patients were not routinely screened for TB symptoms. It was reported that only 21 percent of patients interviewed in the focus group discussion reported ever screened for TB. On the contrary, this data was gathered from the patient's interview not from the TB screening tools; however it reveals that the screening of TB in HIV patients is not routinely done. In addition, it was further found that the reasons for low TB screening included work overload in HIV clinics and inadequate health care workers knowledge about assessing TB [29].

Studies have shown that the coverage of screening for TB among PLHA has been low and inconsistent in HIV CTCs in Tanzania. Only 314,200 PLHA were reported to be screened for TB in 2006, which represents a tiny fraction of the global target of screening 11 million PLHA for TB by 2015 [2]. Furthermore, results from analysis conducted in ICAP-supported CTCs shows that of 21,535 new PLHA were enrolled from October 2007 to March 2009, 9,742 (45 percent), were screened for TB during enrolment using the TB screening tool. 2367(12 percent) TB suspects were identified of whom 434 were diagnosed with TB disease and started TB treatment at TB clinic. The detection of TB patients among those newly enrolled PLHA who were screened for TB, increased from 5 percent in October-December, 2007 to 8 percent in January-March 2009 [30].

2.3 Awareness of Health care workers on importance of the Tuberculosis screening tool

The quantity and quality of staff in terms of knowledge, skills, and attitude is critical for successfully implementing and managing collaborative TB/HIV activities [31]. Study done in Ethiopia reported that about 10 percent of health care workers have been trained on TB/HIV activities[32]. The study done to assess universal access to TB and HIV care services shows that in Kenya only five health care workers had learnt about TB/HIV collaborative activities through training and/or related forums [29].

Knowledge of all symptoms of TB is the backbone of intensified case finding during screening of PLHA for TB infection. The more one has many symptoms the suspicious level increases. If these symptoms are not well understood by HCWs, they could have a

misconception on what exactly to screen. Study done on assessment of policies, guidelines and programmes on management of TB in HIV/AIDS service delivery points shows that in Malawi service providers were not trained on how to use the TB screening tool [32].

People living with HIV can have TB without ever getting a chronic cough. Health care workers should be aware of the importance of screening PLHA for TB without looking only for chronic cough. There will be a missed opportunity if TB screening is done relying on the presence of chronic cough. However, cough is still a very important symptom to watch for because it usually means that a TB case is more infectious. This makes it an important symptom to screen for when the primary goal is to prevent TB transmission. The study done in Ethiopia found that HCWs inquire only for the history of cough and eventually missed 56 percent patients with TB which were later confirmed by positive sputum culture [33].

PLHAs attending care and treatment clinics need to be screened for TB based on asking patients on five questions related to signs and symptoms of TB. The tool used for screening does not tell if the patients have TB disease but rather it tells if the patient is suspect for TB and hence conducts other investigation to rule out TB disease.

It is recommended to repeat the symptom screened every time a PLHA interacts with health service even in people taking ART, and especially in people taking IPT, to eliminate any chance of a breakthrough case of TB going undertreated.

If the answer for any symptom screened is yes, it is recommended that health care workers should investigate for TB and other infections in accordance with national guidelines and principles of sound clinical practice to identify either active TB or an alternative diagnosis. The study done in Kenya also revealed that HIV positive patients suspected of having TB were referred to the TB clinics for confirmation of TB diagnosis [27].

In Tanzania, experience shows that the screening of the TB infection involves a set of five questions, which would increase the likelihood of one suspecting TB infection. However, in some areas like Dar es Salaam, the TB case notification rate among PLHIV attending

CTC is still low, despite the screening tool being urged to be used to screen every patient's visit. This raises a suspicion either the tool is not effectively utilized or perhaps the symptoms are not well perceived by the HCWs.

2.4 Accessibility to Tuberculosis screening tool by health care workers

National TB/HIV Policy in Tanzania underscores the need of having a functioning supply management system as an essential component for ensuring timely and uninterrupted accessibility of commodities, of high quality, and sufficient quantity of equipment to reach the goal of reducing the burden of TB among PLHA [31].

Accessibility of TB screening tool by health care workers providing HIV Care and Treatment services is the cornerstone for adequate and timely TB case detection among PLHAs. Uninterrupted and quality assured supplies of the tools are vital for suspecting TB among PLHAs. This will enhance the patients to have opportunities to be diagnosed with TB and early treatment for those diagnosed with TB. Collaborative TB-HIV services requires that each programme to ensure regular distribution at sufficient quantity of TB screening tool to the health facilities that provide HIV care and treatment services to PLHAs. The actual need depends on the volume of the patients served. The national TB and AIDS programme and health facility in charge should ensure that required TB screening tools are available and distributed to the HIV Care and Treatment Clinics in a timely manner. Checking on stock level, stock management and control are also important aspects of making sure the tools are not missing. Good communication and close collaboration between CTC and facility procurement officer are required.

Facility resources can affect the provision of quality of care. The resources enhance the work of the staff to be more efficient and effective. Full accessibility of resources also increases the capacity of staff to adhere to recommended standards of practice for quality services [34]. Experience shows that most of the facilities do have the TB screening tool with some having stock out at one point in time. Apparently there are no means to forecast the use of TB screening tool which may ultimately affect the accessibility of TB screening tool.

2.5 Supportive supervision and improvement the use of Tuberculosis screening tool

Supervision is the process of “directing and supporting staff so that they may effectively perform their duties [35].

Supportive supervision uses a practical system of objective measures to foster improvements in the procedures, personal interactions, and management of primary health care (PHC) facilities. The supportive supervision approach improves services by focusing on meeting staff needs for management support, logistics, and training and continuing education.

This approach is currently used to encourage HCWs to rapidly expand HIV/AIDS service delivery and to integrate these services with the full range of PHC services. HCWs have been asked to take on new and complex services at a rapid pace, while continuing to focus on the comprehensive health care needs of the populations they serve. Good supervision of HIV/AIDS services is essential. It enables supervisors to provide clear guidance to staff, who are frequently overburdened and lacking sufficient information. Effective health education and patient motivation are critical to success of the supportive supervision.

The stress of caring for the terminally ill represents a new level of strain on nursing staff that need supportive guidance. Supportive supervision is a team building process that calls for commitment, which will result in a measurably improved quality of clinical care, better client satisfaction, and heightened morale of workers [36].

Supervision provides a critical support for the delivery of health services. Despite recognition of the importance of supervision in managing human resources for health care, the “promise” of supervision is often not achieved in developing country health systems [37]. Supervision still tends to emphasize inspection and control by external supervisors, who often believe that workers are naturally unmotivated and require strong controls to perform adequately. At the same time, many line supervisors lack the requisite technical and managerial skills or have limited authority to resolve service delivery problems [37].

The study conducted in Chalinze Tanzania to gather experiences and share lessons learnt with other HCWs and programme implementing partners following rolling of ART provision in health centres (HC). They found that, clinical management of patient was poorly performed and HC can provide ART services if regular clinical mentorship and supportive supervision is provided and strengthened [38]. Similar practices have been reported by studies conducted in PHC facilities in Tanzania in relation to malaria case management[39], [40] .

CHAPTER 3

3.0 METHODOLOGY

3.1 Introduction

This chapter presents the study area, study design, target and study populations, sampling techniques, research instruments, variables, ethical considerations, data collection procedures, data management and analysis, and the limitation of the study.

3.2 The study area

This study was conducted in Dar es Salaam region. The region was selected because is one of the regions in Tanzania with high prevalence of HIV 8.9 percent [41]. The National TB and Leprosy 2010 report indicate that the contribution of Dar es Salaam in Tuberculosis notification in year 2005 was (25 percent), and its contribution has declined ever since and in 2010 its contribution in notification of all Tuberculosis form has been reported to be (21 percent) [9].

3.3 Study design

This was an explorative cross-sectional study using quantitative data collection methods. The design was selected for this study as it was intended to assess the extent of use and accessibility of Tuberculosis screening tool in HIV Care and Treatment Clinics. The study was conducted in facilities providing HIV Care and Treatment services in the same geographical area.

3.4 Study population

The target population was health care workers providing HIV Care and Treatment services to People Living with HIV/AIDS in public and private health facilities in Dar-es-Salaam region. The study also reviewed selected patient's record files in each clinic visited to ascertain correctness of filling of TB screening tool and matching of the information filled in TB screening tool with clinical notes and CTC2 card.

3.5 Inclusion and exclusion criteria

3.5.1 Inclusion and exclusion criteria for health facilities providing HIV Care and Treatment services

(i) Inclusion criteria for HIV Care and Treatment Clinics

- Public and private health facilities providing HIV Care and Treatment services

(ii) Exclusion criteria for HIV Care and Treatment Clinics

- Military hospitals, Faith based hospital providing HIV Care and Treatment services

3.5.2 Inclusion and exclusion criteria for health care workers

(i) Inclusion criteria for health care workers

- Health care workers providing HIV Care and Treatment services to People Living with HIV/AIDS found at the health facility during the study period

(ii) Exclusion criteria for health care workers

- Health care workers who are not supposed to fill the TB screening tool.

3.5.3 Inclusion and exclusion criteria for patient's records files

(i) Inclusion criteria for patient's records files

- All patients records files containing Tuberculosis screening tool, CTC2 card and clinical notes who had visited the HIV Care and Treatment clinics within 6 month of the study period

(ii) Exclusion criteria for patient's records files

- Patient's records files of defaulted People Living with HIV/AIDS from HIV Care and Treatment clinic during the study period

3.6 Sample size and sampling methods

3.6.1 Sampling techniques

A list of sixty one (61) dispensaries, health centres and hospitals in public and private health facilities which had been accredited by National AIDS Control Program (NACP) provide HIV Care and Treatment services in Dar es Salaam region were obtained from NACP. The hospitals and health centres (22 facilities) had to be conveniently included in the study because they have a large proportion of CTC clients in the region compared to dispensaries. Out of thirty nine (39) dispensaries, eighteen (18) were chosen randomly (using lottery method).

3.6.2 Sample size

The sample size (n) in this study was obtained from the single proportion formula.

The sample size (n) was calculated using the following formula: $n = \frac{z^2 p (100-p)}{\epsilon^2}$

Where:

Z = is the point of the normal distribution corresponding to the level of significance (1.96).

P= is the estimated proportion of health care workers who are using TB screening questionnaires to screen PLHA (50 percent).

ϵ =the margin of error on p (put at 7 percent).

None respond rate (6 percent)

$$n = 1.96^2 \times 0.5 (1-0.5) / 0.06^2$$

$$n = \frac{z^2 p (100 - p)}{\epsilon^2}$$

$$= \frac{(1.96)^2 \times 0.5 \times 0.5}{(0.07)^2}$$

$$= 196 \text{ health care workers}$$

Adding 6 percent of no response rate ($196 \times 0.06 = 11.76$), the above formula yields a minimum required sample size of about 208 health care workers.

3.6.2 Selection of health care workers

All health care workers who screen patients for TB working at HIV Care and Treatment clinics were asked conveniently to participate in the study given the fact that, they were on duty on the day of the interview, they gave their consent and they had time to fill out the questionnaire. For the clinics that were found to be very busy with large numbers of patients, the researchers were advised to come the following day, to allow room for patients to be served. A total of 208 health care workers were interviewed from (40) HIV Care and Treatment Clinics involved in the study.

3.6.3 Selection of patient's records files

The study reviewed patients' records files for patients enrolled in Care and Treatment Clinics for the past six months. A list of files of the past six months registered patients' records were obtained from forty (40) HIV Care and Treatment Clinics. Review was done to select files which contained three tools, namely TB screening tool, CTC2 card and clinical notes. To get the study sample size (200 files) all patients' records files which met criteria of having three tools in one patient's files were assigned a number and the number was entered in the computer. A total of 5 patients' files from each HIV Care and Treatment Clinics interviewed were randomly selected using a computer generated random tables. A total of 200 patients' records files were reviewed.

Tuberculosis screening tool in the files were reviewed to assess the accuracy which included correctness and completeness. Also the researcher assessed the CTC2 card and clinical notes in matching with the information found in Tuberculosis screening tool.

3.7 Data collection techniques and tools

Data were collected by using open and close ended questionnaire. The questionnaire was first drafted in English and thereafter translated into Kiswahili language. The questionnaire was structured to respond to specific objective of the study.

An assessment checklist was prepared to assess the level of accuracy and completeness of the filled Tuberculosis screening tool, CTC2 card and clinical notes.

3.8 Recruitment and training of research assistants

Three (3) research assistants who were not working at CTC clinic were recruited to assist in data collection. The research assistants prior to the actual fieldwork were trained for one day. The contents of the training sessions was comprised briefed the participants on the objectives and methodology of the study. The research assistants were familiarized and trained on the research tools for two (2) days. During the training the research assistants were also trained on methodology required to collect the correct and right information. Research ethics and administrative issues were also among the issues that the research assistants were exposed to.

3.9 Study Variables

Dependent variable

Use of Tuberculosis screening tool

Independent variables

- (i) Socio-demographic characteristics: age, sex, marital status, educational level, occupation, duration of employment, HCWs carder
- (ii) Accuracy filling of Tuberculosis screening tool
- (iii) Health care workers awareness of the Tuberculosis screening tool
- (iv) Accessibility of Tuberculosis screening tool by health care workers
- (v) Health care workers training on HIV/TB related matters
- (vi) Extent of supportive supervision to health care workers

3.10 Pre-testing of the research instrument

Before starting data collection, pretesting of the research instrument was done to determine the strengths and weakness of the questionnaires on question format, relevance, reliability, wording and order. This was done by the investigator and three research assistants. The pre-test questionnaires and a checklist were administered to 5 nurses and 6 clinicians from HIV Care and Treatment Clinics in Bagamoyo, the district hospital which is borders to Dar es Salaam. Feedback received during pre-testing was used to correct errors and modify data collection tools.

3.11 Data collection techniques and tools

Field visit lasted for 14 days. During the field work interview was done by principal investigator and research assistants in private room where it was found to be more suitable place for collecting data of the study. Tools used to collect data were questionnaires and a checklist. The English version questionnaire was translated to Kiswahili language. The Kiswahili version was used to collect data.

The study was conducted during the routine health facility visits where health care workers were providing services to clients. The invitation to participate in the study was done in collaboration with respective health facility in charge. The introduction was conducted during a short briefing health talks held every morning prior to commencing of routine health facilities activities.

3.11.1 Health care workers

Health care workers found at HIV Care and Treatment Clinics were asked conveniently to participate in the study. The interview was administered to the participant after a written consent was given (signed by the participant). The data were collected using face to face structured interview. The structured interview was used to collect information on use and accessibility of Tuberculosis screening tool in HIV Care and Treatment Clinics. Interview was conducted in a separate room with assurance of confidentiality. The interview lasted for about 20-25 minutes per participants.

3.11.2 Patients records files

The health facility in charge asked the data manager to provide the researcher with the list of all clients' attended in the clinics for the past six month. After obtaining the list the research team reviewed and select files which contained three (3) tools that is Tuberculosis screening tool, CTC2 card and clinical notes. The files were given number and entered in the computer. Five (5) files from each facility visited were selected to assess completeness, correctness and consistency of information written.

3.12 Data quality control

Supervision of the completed questionnaires was well maintained by the principle investigator for the aspect of data quality control. At the end of the day (in each end of the day), research team conducted a review meeting to discuss issues raised during the day for conducting a quick assessment of the completed tools. During the field work, principle investigator was available for any needed clarifications based on the study. The principle investigator visited each site to oversee data collection process and checked all previously completed questionnaires for consistence and completeness.

3.13 Process of collected data

The interviewee's information was recorded using close and open ended questionnaires that were administered to 208 health care workers working at HIV Care and Treatment Clinics. The review was done on 200 patients' records files. The sorting and ordering of respondents from the open ended questions was done and grouped into themes. The recurring statements and narratives were well summarized and coded. The data were entered in a computer using SPSS version 15.0 software.

3.14 Data analysis

3.14.1 Data Analysis Process

Quantitative Data Analysis

After the completion of the field work in selected clinics, questionnaires were given serial numbers before data entry. Data were entered and analyzed using SPSS version 15.0. Data is presented using frequency tables and cross tabulations. Important summary statistics were obtained and associations were examined using Fishers' Exact Test. Significance level of 0.05 (that is $p < 0.05$) was used to determine the significance of association being examined.

3.15 Ethical considerations

The research ethics were observed to ensure the welfare of those who participated in the research. Each participant was asked to sign a written consent upon given informed information regarding the purpose and objectives of study. Participants were assured that the information they provide was to be treated by utmost anonymity and confidentiality.

Ethical clearance was sought and obtained from Muhimbili University of Health and Allied Sciences (MUHAS), prior to the study. The research permit was sought and obtained from regional and district Medical Officer in Dar es Salaam region and the districts authorities respectively. The participation to study was on voluntary and there was no any kind of coercive or incentive diploid to have them participate. They were free to decline or withdraw at any time in the course of the study without any repercussion. It was clearly clarified that the information to be provided, whether orally or in writing, was for research purposes only and would therefore be strictly anonymous and dealt with confidentially.

3.16 Limitation of the study

- (i) This study conveniently looked at HIV care and treatments clinics in Dar es Salaam (Hospitals, Health Centres and 18 Dispensaries) however; this brings about potential for sampling bias as there are more dispensaries than health centres and hospitals in the region.
- (ii) There may be information bias, since some of the health care workers did not have enough time to respond to the questionnaire (1 percent) however since the sample size was increased by (6 percent) therefore the non respondents did not affect the results of the study.
- (iii) The findings of this study cannot be generalized to other parts of the country with different demographics.

CHAPTER 4

4.0 RESULTS

4.1 Characteristic of study respondents

Two hundred and eight (208) health care workers working in HIV Care and Treatment Clinics were interviewed in 40 HIV Care and Treatment Clinics. Among forty HIV Care and Treatment Clinics visited eighteen (18) were dispensaries, eight (8) were health centres and fourteen (14) were hospitals in Ilala, Kinondoni and Temeke districts in Dar es Salaam region. Table 1 shows the socio-demographic characteristics of respondents; their sex, age, level of education and professional cadres interviewed in the HIV Care and Treatment Clinics in the study areas. The mean age of respondents was about 41 years and the majority of respondents were female (77 percent). Out of these, 167 (80 percent) respondents had college education, 80 (39 percent) of these were nurses. Most of the doctors involved in the study (91 percent) worked at hospitals. Statistical test have been done between and among different groups.

Table 1: Socio- demographic characteristics of respondents (N=208).

Variable	Number (%)	Level of health facility			P-value
		Dispensary	Health Centre	Hospital	
Sex:					0.664
Male	48 (23%)	10(21%)	5(10%)	33(69%)	
Female	160 (77%)	44(28%)	26(16%)	90(56%)	
Age(years):					
Mean (SD)	40.94(9.19)	39.19(7.93)	43.23(9.89)	41.15(9.47)	0.240
Range	24-70	26-57	27-64	24-70	
Highest education level					0.123
Primary	3(1%)	1(33%)	0(0%)	2(67%)	
Secondary	14(7%)	0(0%)	6(43%)	8(57%)	
College	167(80%)	50(30%)	24(14%)	93(56%)	
University	24(12%)	6(25%)	2(8%)	16(67%)	
Professional qualification of the respondents					0.681
Axillary					
nurse	48(23%)	14(29%)	4(8%)	30(63%)	
Nurse	80(39%)	20(25%)	13(16%)	47(59%)	
Clinical					
officer	61(29%)	20(33%)	10(16%)	31(51%)	
AMO	8(4%)	0(0%)	2(25%)	6(75%)	
MD	11(5%)	0(0%)	1(9%)	10(91%)	

4.2 Characteristics of respondents and use of Tuberculosis screening tool

Table 2 shows the relationship between respondents' characteristics and use of TB screening tool. Fisher Exact Test was used to find out how respondents characteristics are related to the use of TB screening tool. Results show that there was no statistically significant association between the respondents levels of education ($p=0.62$), their professions ($p=0.91$) or working experience ($p= 0.88$) with the use of TB screening tool. However training on the TB screening tool, those who are aware and respondents who were supervised all three yield a strong relationship of using TB screening tool with statistical significant level of ($p = 0.001$).

Table 2: Respondents characteristic by use of Tuberculosis screening tool

	Total	Use TB Screening tool		Fisher's exact P-value
		No Number (%)	Yes Number (%)	
Education level				
Primary	8	2(25%)	6(75%)	0.62
Secondary	19	6(32%)	13(68%)	
College	150	30(20%)	120(80%)	
University	28	7(25%)	21(75%)	
Professional qualification of the participants				
Clinical officer	61	14(23%)	47(77%)	0.91
Nurse	75	17(23%)	58(77%)	
Axillary nurse	46	9(20%)	37(80%)	
AMO	11	3(27%)	8(73%)	
MD	15	5(33%)	10(67%)	
Work experience				
Just employed	8	2(25%)	6(75%)	0.88
Less than 6months	9	3(33%)	6(67%)	
6-12months	11	3(27%)	8(73%)	
More than 1year	177	38(21%)	139(79%)	
Trained on use of TB screening tool				
Yes	144	140(97%)	4(3%)	0.001
No	64	30(47%)	34(53%)	
Awareness on the use of TB screening tool				
Yes	190	160(84%)	30(16%)	0.001
No	18	8(44%)	10(56%)	
Supervised on use of TB screening tool				
Yes	172	153(89%)	19(11%)	0.001
No	36	26(72%)	10(28%)	

Key:

* Fisher's Exact test was used to calculate p-value since there are counts less than 5.

4.3 Awareness of respondents on the use of Tuberculosis screening tool

Respondents were asked if they had heard of collaborative TB/HIV activities implemented in care and treatment clinics in particular screening of PLHA for TB using TB screening tool. The majority of the respondents (201 out of 205) reported to have heard about collaborative TB/HIV activities and of these 99 (48 percent) reported to have heard them through trainings and 60 (29 percent) through supervisory visits (Table 3).

Table 3: Source of information on Collaborative TB/HIV activity reported by respondents

	Total	Dispensary	Health center	Hospital
	n (%)	n (%)	n (%)	n (%)
Ever heard about collaborative TB/HIV activities				
Yes	201	54(27%)	32(16%)	115(57%)
No	4	1(25%)	0(0%)	3(75%)
Source of information				
Training	99	27(27%)	16(16%)	56(57%)
Supervision	60	23(38%)	7(12%)	30(50%)
Seminar	35	7(20%)	8(23%)	20(57%)
Meetings	8	0(0%)	0(0%)	8(100%)
Others	6	0(0%)	2(33%)	4(67%)

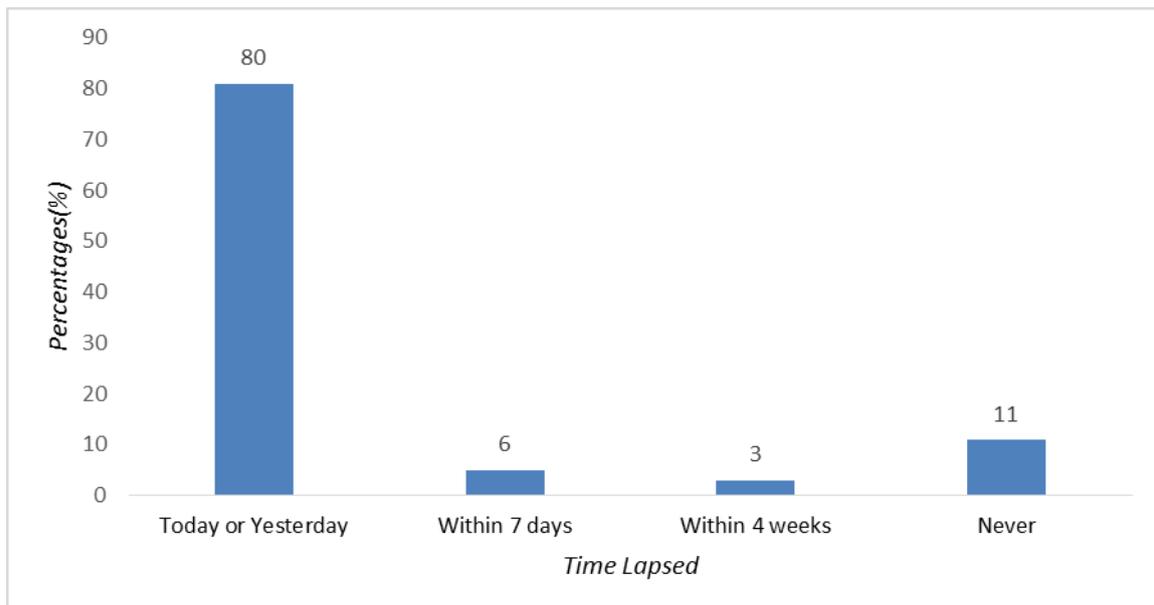
Table 4 shows what respondents thought were the benefits of collaborative TB/HIV activities for PLHA. More than half 108 (52 percent) thought that collaborative TB/HIV activities, particularly screening for TB among PLHA provide early treatment of TB followed by 61 (29 percent) who thought they provide early detection of TB.

Table 4: Frequency of respondents responses on recommendation of screening Tuberculosis among PLHA (N=208).

Recommendation responses	Frequency	Percent
Early detection of TB	61	29%
Prevention of TB	35	17%
Early treatment of TB	108	52%
Dont know	4	2%

Respondents were asked about the last time they used the TB screening tool in PLHA patients. Out of 206 respondents, (80 percent) reported to have used the tool a day before or on the day of the interview and a few (3 percent) reported to have used it within four weeks from the day of the interview.

Figure 2: Time lapse between the day of interview and the last time respondents used the Tuberculosis screening tool on PLHA (N=206)



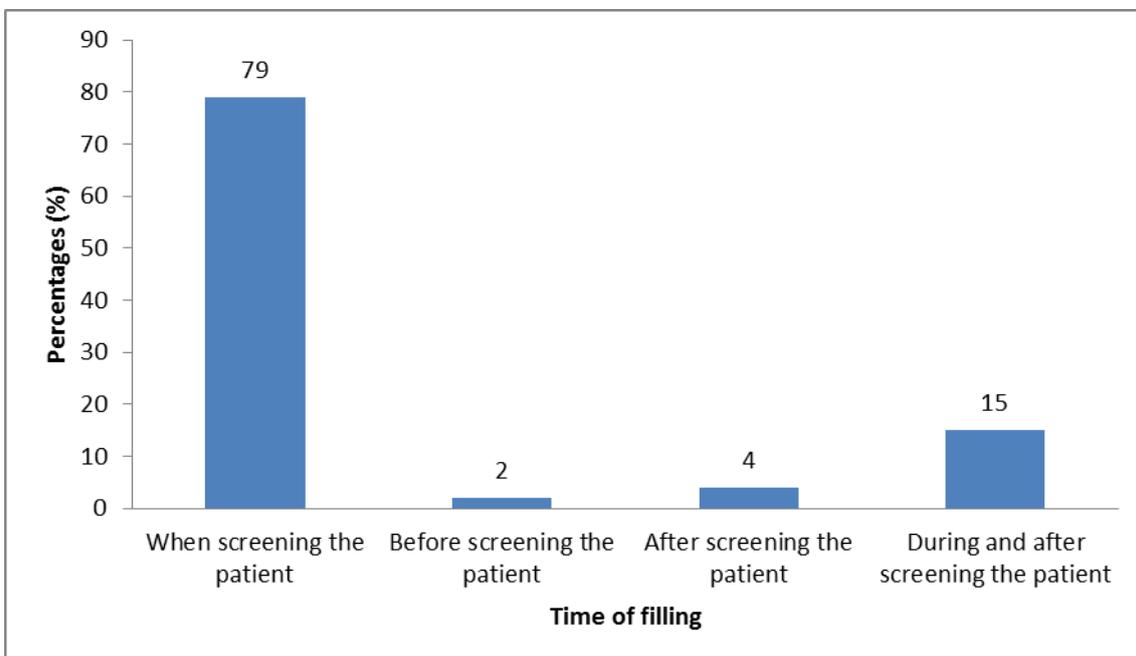
Respondents were asked as of when they would administer the TB screening tool when a patient does not presents with symptoms and signs of TB. The majority of respondents 183 (88 percent) reported they would screen the patient at next visit, others 14 (7 percent) reported that they would order a laboratory investigation (Table 5).

Table 5: Action taken by study respondents when patients do not show any TB symptoms and signs. (N=208)

Action taken	Frequency	Percent
Refer the patient to TB clinic	8	4%
Order Laboratory investigations	14	7%
Start on ant-TB drugs	3	1%
Conduct screening in the next visit	183	88%

Figure 3 shows that the majority of the study respondents (79 percent) filled the TB screening tool during attending patient and only (2 percent) reported to have filled it before screening the patients.

Figure 3: Last time respondents filled TB screening tool (N=208)



Respondents were asked on what they should do if a patient shows symptoms and signs of TB. Majority of respondents 145 (70 percent) said they would order laboratory investigations (AFB microscopy) and 50 (24 percent) said they would refer the patient to a TB clinic for the diagnosis of TB (Table 6).

Table 6: Action taken by respondents when a patient shows symptoms and signs of TB (N=205)

Action taken	Frequency	Percent
Refer the patient to TB clinic	50	24%
Order laboratory investigations (sputum for AFB)	145	70%
Start the patient on Anti-TB drugs	1	1%
Screen the patient in the next visit	1	1%
I do not refer	1	1%
I don't know	7	3%

The finding shows that majority of the respondents (79 percent) had no problems in using the TB screening tool during screening TB in PLHA patients. However, (21 percent) of participants experienced problems when using a TB screening tool to screen patients. Work load translated as increase in the number of patients, was the most common problem faced by health workers (33 percent) (Table 7).

Table 7: Problems faced as reported by respondents during screening PLHA by using TB screening tool

Problems (N=43)	Frequency	Percent
Time consuming	8	19%
Work load (too many patients)	14	32%
Low awareness of TB symptoms among patients	5	12%
Patient felt disturbed if they don't have symptoms of TB disease	7	16%
Sometimes you received false answers to the patient regarding presenting symptoms	5	12%
Fair of being infected by TB infection	4	9%
Total	43	100%

Table 8 shows that among 208 respondents more than (61 percent) suggested that it is better to continue with medical education to staffs on how to use TB screening tool in order to improve detection of TB in PLHA patients. A few respondents (1 percent) suggested that it better for a PLHA to come to the health facility whenever he or she notices symptoms of TB.

Table 8: Suggestions of respondents on improving and detecting patients infected by both HIV and TB

Suggestion (N=208)	Frequency	Percent
TB screening tool helps to identify TB in PLHA. Health care workers should be advised to use it routinely	7	3%
Health care workers should be mentored on how to use TB screening tool	126	61%
Health education should be provided to the community on TB disease	38	18%
Allocation of human resource in facilities with few staffs	19	9%
PLHA patients should come to the hospital whenever he/she notes symptoms of TB	1	1%
Presence and use of TB screening tool at facility level	8	4%
Presence of conducive working environment	9	4%
Total	208	100%

4.4 Accessibility to Tuberculosis screening tool by health care workers

Table 9 shows that the majority of respondents 87 percent (181 out of 208) reported that they had never missed to screen patients due to lack of TB screening tool. When asked how many times they did miss TB screening tool (75 percent) reported to have missed a TB screening tool more than once. The majority of the respondents reported to have received TB screening tool from their supervisors. Furthermore, respondents were asked on the TB tool ordering system hospitals had good systems of ordering TB screening tool (49 percent) followed by dispensary (26 percent) and then health centres (25 percent). Regarding staff responsible for ordering TB screening tool, hospital reported to have a staff responsible for ordering (44 percent) followed by dispensary (33 percent) then health centres (23 percent).

Table 9: Use, source and accessibility of Tuberculosis screening tool by health care workers

Questions	Total	Health		
		Dispensary	center	Hospital
		No	No	No
		No(%)	(%)	No(%)
Ever not screened the patient due to lack TB screening tool				
Yes	27	7(26%)	4(15%)	16(59%)
No	181	54(30%)	29(16%)	98(54%)
How many time missed the TB screening tool				
Once	53	20(38%)	13(24%)	20(38%)
More than Once	155	40(26%)	40(26%)	75(48%)
From whom do you get supplies				
Health facility in charge	7	3(43%)	1(14%)	3(43%)
Supervisor	183	56(31%)	33(18%)	94(51%)
Store manager	1	0(0%)	0(0%)	1(100%)
Don't know	17	1(6%)	1(6%)	15(88%)
Have ordering system of TB screening tool				
Yes	119	31(26%)	30(25%)	58(49%)
No	65	23(35%)	39(60%)	3(5%)
don't know	24	2(8%)	1(4)	21(88%)
Have staff responsible for ordering TB screening tool				
Yes	107	35(33%)	25(23%)	47(44%)
No	78	23(29%)	47(60%)	8(11%)
don't know	23	2(9%)	0(0%)	21(91%)

4.5 Level of accuracy in filling the Tuberculosis screening tool

“Accuracy” in this study was defined as the extent to which the TB screening tool was filled correctly; it included all the components in the form including three names, date of birth, age, sex, physical address and all questions with option No/Yes if ticked appropriately. Any missing information that was supposed to be filled in the tool was regarded as “incorrect filling”. Those not filled at all, were regarded as “blank”.

Table 10 shows the number of TB screening tools filled correctly and those not filled correctly. Results show that out of 90 TB screening tools assessed at dispensaries, (31 out of 90) were filled correctly, (18 out of 40) TB screening tools were filled correctly at health centers and (13 out of 70) filled correctly at hospitals. No any incorrectly filled TB screening tool was found at the hospitals. Dispensaries had a lot of blank TB screening tools (58 out of 90) than hospitals and health centers. In total blank TB screening tools were (135 out of 200) assessed. Generally results show that the significant numbers of TB screening tools were not correctly filled in all health facilities.

Table 10: Number of Tuberculosis screening tool correctly or incorrectly filled by type of health facility

		Dispensary	Health centre	Hospital	Total
TB screening tool	<i>Correct</i>	31	18	13	62
	<i>incorrect</i>	1	2	0	3
	<i>Blank</i>	58	20	57	135
	Total	90	40	70	200

We assessed and compared one tool used to detect TB in patients. This is the TB screening tool and compared it with clinical notes which also used to record patients information including TB. Table 11 shows the accuracy of filling in TB screening tool compared with clinical notes. A total of 200 patient’s files were assessed. Results show that (45 files out of 200) assessed were found to have TB screening tools which were correctly filled and were consistent with clinical notes. Out of 200 patients files assessed, 123 clinical notes were found to be incorrectly filled.

**Table 11: Tuberculosis screening tool filled with comparison to clinical notes
(Number of tools=200)**

		Clinical Notes			
		Correctly	Incorrectly	blank	Total
TB screening tool	<i>Correct</i>	45	10	7	62
	<i>incorrect</i>	1	2	0	3
	<i>Blank</i>	2	111	22	135
Total		48	123	29	200

We also compared the information on the TB screening tool and that on the CTC2 cards. Table 12 shows that (23 files out of 200) assessed files were found to have TB screening tools which were correctly filled and the information was consistent with CTC2 cards. In addition a total of 127 files assessed were found blank in CTC2 cards.

Table 12: TB screening tool filled with CTC2 cards (Number of tools=200)

		CTC2 cards			
		correct	incorrect	Blank	Total
TB screening tool	<i>correct</i>	23	1	38	62
	<i>incorrect</i>	0	0	3	3
	<i>blank</i>	127	4	4	135
Total		150	5	45	200

Furthermore, we compared information on the CTC2 cards and the clinical notes. Table 13 shows that (18 files out of 200) assessed had CTC2 cards which were correctly filled and the information was consistent with clinical notes. In addition a total of 109 files were found to have incorrectly filled clinical notes with inconsistency in CTC2 cards, (30 files out of 200) assessed had blank clinical notes.

Table 13: CTC 2 cards filled with clinical notes (Number of tools=200)

		Clinical notes			
		Correctly	Incorrectly	Blank	Total
CTC2 cards	<i>Correct</i>	18	109	23	150
	<i>incorrect</i>	0	5	0	5
	<i>Blank</i>	30	9	6	45
Total		48	123	29	200

Table 14 shows the majority of TB screening tools (31) filled correctly and correctly filled clinical notes (24) were from dispensary level. Hospitals were found to have many files which had correctly filled CTC2 cards (64) followed by (63) in dispensary levels. There was no incorrectly filled TB screening tool found at hospital level. The majority (58) of incorrectly filled clinical notes were found at dispensary level. However, dispensaries were found to have majority of blank TB screening tool (58).

Table 14: Comparison of accuracy in TB screening tool, clinical notes and CTC2 cards by health facility type

	Dispensary	Health center	Hospital	Total
TB screening tool				
correct	31	18	13	62
incorrect	1	2	0	3
blank	58	20	57	135
Total	90	40	70	200
Clinical notes				
correct	24	6	18	48
incorrect	58	24	41	123
blank	8	10	11	29
Total	90	40	70	200
CTC2 cards				
correct	63	23	64	150
incorrect	2	1	2	5
blank	25	16	4	45
Total	90	40	70	200

4.6 Supportive supervision and improving the use of Tuberculosis screening tool

Table 15 shows that majority of respondents (86 percent) had been supervised prior to the study. The data shows that there were no significant difference in supervisions by type of health facilities ($p=0.1$). Furthermore, more than (44 percent) of the respondents reported to had been supervised two times, followed by (32 percent) who had been supervised three times and (24 percent) who had been supervised once. There is no significant difference among health facilities in the number of times respondents had been supervised ($p=0.3$)

Table 15: Number of times respondents were supervised

Questions	Total	Health		P-value	
		Dispensary	center		Hospital
	n (%)	n (%)	n (%)		
Ever been supervised					
Yes	178	56(32%)	31(17%)	91(51%)	
No	20	4(20%)	2(10%)	14(70%)	0.1
don't remember	8	0(0%)	0(0%)	8(100%)	
How many times					
one time	50	15(30%)	10(20%)	25(50%)	
two times	92	26(28%)	14(15%)	52(57%)	0.3
three times	66	26(39%)	10(15%)	30(46%)	

Table 16 shows that majority (50 percent) of supervisors were reported to have come from NTLF. Results shows that there is no difference regarding where the supervisors came and type of health facilities ($p=0.1$). When asked if the supervisor do return incorrectly filled TB screening tool during supervision, about (51 percent) reported to receive incorrectly filled TB screening tool from supervisors while (12 percent) of the respondents reported to had never received incorrectly filled TB screening tool from supervisor.

Majority (71 percent) of respondents reported to have been given opportunity to share their experiences during supportive supervision, while (22 percent) of the respondents reported to have not been given opportunity to share their experiences with the supervisors and about (7 percent) of respondents they don't remember, there is a significant difference between given opportunity to share experiences during supervision and type of health facility ($p=0.02$). Despite the supervision, only (72 percent) of the respondents reported to had received feedback on the gaps in filling the TB screening tool.

The study also wants to seek what the supervisors did when they supervise the care and treatment clinics. Majority of the respondents (58 percent) reported that during supportive supervision supervisors they do provide mentorship, (33 percent) on the job training and (9

percent) checking patient's files for the accuracy in filling the TB screening tools, clinical notes and CTC2 cards. The results shows that there is a statistically significant difference between what supervisors do during supervisions in different care and treatment clinics ($p=0.02$).

Table 16: Supportive supervision

Questions	Total	Health centre n(%)	Dispensary n(%)	Hospital n(%)	P- value
Who does the supervision					
NACP	85	17(20%)	23(27%)	45(53%)	0.1
NTLP	105	19(18%)	38(36%)	48(46%)	
CHMT/RHMT	18	8(44%)	0(0%)	10(56%)	
Does the supervisor return incorrectly filled TB screening tool?					
Yes	106	14(13%)	42(40%)	50(47%)	0.01
No	68	16(24%)	13(19%)	39(57%)	
Never	26	4(15%)	7(27%)	15(58%)	
don't remember	8	0(0%)	0(0%)	8(100%)	
Did you get opportunity to share experience					
Yes	147	27(18%)	50(34%)	70(48%)	0.02
No	46	2(4%)	12(26%)	32(70%)	
don't remember	15	2(13%)	1(7%)	12(80%)	
Given feedback on what they observed					
Yes	149	22(15%)	54(36%)	73(49%)	0.01
No	46	6(13%)	10(22%)	30(65%)	
don't remember	13	4(31%)	0(0%)	9(69%)	
What did they do when they visited					
mentorship	120	20(17%)	30(25%)	70(58%)	0.02
on job training	69	12(17%)	22(32%)	35(51%)	
checking patient files	19	0(0%)	12(63%)	7(37%)	

CHAPTER 5

5.0 DISCUSSION

5.1 Introduction

This chapter discusses the extent of use and accessibility of the Tuberculosis screening tool in health facilities in detecting Tuberculosis cases among People Living with HIV/AIDS in Care and Treatment Clinics in Dar-es-Salaam region.

5.2 Use of the Tuberculosis screening tool

The WHO recommends countries to enhance active case finding of TB cases by screening all patients infected with HIV. Countries are supposed to regularly screen TB infection in PLHA patients in each visit to the clinic [9]. This study reports no significant differences in the use of the TB screening tool among health care workers of different cadres with different levels of education, their professionals, working experiences. However there is a strong association on the use of the TB screening tool for those who received training on the TB screening tool, those who reported to be aware of the tool and those who have been supervised regards the use of the TB screening tool. This implies that the screening tool can be used by any health care cadre as long as they have been trained and made aware of the TB screening tool in addition to being supervised.

5.3 Respondents' awareness in utilizing the Tuberculosis screening tool

This study shows that majority of respondents are aware of and have been trained on collaborative TB/HIV activities. This means that they have knowledge of symptoms and signs of TB disease which if applied correctly will increase the detection of TB disease among PLHA. This finding corroborates with the Ministry of Health reports which show that most of the HCWs have been trained on TB/HIV collaborative activities [10].

One of the recommendations of collaborative TB/HIV activities is to intensify TB case finding which involves screening for symptoms and signs of TB in settings where HIV-infected people are concentrated. Early identification of signs and symptoms of TB, followed by diagnosis and prompt treatment in PLHA, increases the chances of survival,

improves quality of life, and reduces transmission of TB in the community. The result of this study shows more than (82 percent) of the respondents do screen for the symptoms and signs of TB hence early diagnosis and ideally prompt treatment of TB diseases among PLHA. Furthermore, the study shows that if no symptoms and signs are reported patients are screened again in the follow up visits. If TB patients are screen and detected early is likely that the burden of TB disease is going to be reduced. The findings collaborate with the study done in Kenya to assess universal access to TB and HIV services reported that screening of PLHA for TB symptoms is done either when they came for their care and treatment services, when they visit the facility for the first time, when they request for HIV test, when they present with TB symptoms or when they are initiated with ARV. All the respondents agreed that TB suspects are referred for confirmatory test of TB before medication is initiated and TB diagnostic is done within the same facility [31].

In this study, the majority of the respondents were aware of the usefulness of the TB screening tool in detecting TB among PLHA. This implies that HCWs are likely to use the tool in detecting TB among PLHA and hence resulting into early diagnosis, treatment and consequently improve the quality of lives of PLHA.

This study also found that few respondents (21 percent) reported to have faced challenges when screen PLHA for TB. One of the challenges reported is work load which was defined as increase in number of patients attended at CTCs as compared to number of staff working in the CTCs. If the use of the tool results in increasing the HCWs' work load, for continual use of the tool corresponding HCWs motivation strategies should be undertaken. Motivation will give workers incentives to continue using the tool irrespective of it resulting onto increasing the work load. Similar results were found in a study done on health system barriers affecting the implementation of collaborative TB/HIV services in Uganda, whereby patients were not routinely screened for TB symptoms. In this study, it was reported that only (21 percent) of patients interviewed in the focus group discussion, reported ever screened for TB. Although this data was gathered from patients' interviews not from the TB screening tools it reveals that screening of TB in HIV patients is not routinely done. In addition, it was further found that the reasons for low TB screening

included work overload in HIV clinics and inadequate health care workers knowledge about assessing TB [33].

5.4 Accessibility of Tuberculosis screening tool

In order to efficiently continue to detect TB disease among PLHA the TB screening tools for screening the patients must be readily accessible all the time. The absence of the TB screening tools at the facility may result into missing some of the TB cases as they visit the facility. The accessibility of the tool at the health facilities also increases the capacity of HCWs to adhere to recommended standards of practice for quality services [39]. This study explores the accessibility of the TB screening tool as perceived by HCWs. Majority of the health facilities had a good system of making sure the TB screening tools are accessible by health care workers. This includes who to see in case there are insufficient tools; the study however also revealed that in most of the facilities there was no responsible staff who was supposed to make sure that the TB screening tools are accessible at all times. Furthermore, the study found that although the ordering system of the tools existed in the health facility, about (43 percent) of the respondents were not aware of existence of the system. This poses a threat as the supply might go unnoticed hence resulting in stock outs. A proper strategy to appoint a focal person to make sure that the TB screening tools are accessible at all times is recommended.

5.5 Accuracy in filling the Tuberculosis screening tool

For good reporting and recording systems one needs to fill accurately the patients' information. The findings of this study indicate that TB screening is not yet routine for patients in CTCs at all health facilities in the studied districts. About (68 percent) of TB screening tools were found to have not been filled at all for six months prior to the study. Despite the fact that the Ministry of Health requires that TB screening should be done at each visit in CTC for new and follow up patients, this study found that screening is not routinely done. In the situation where the forms are not filled regularly there is a chance of missing some infected patients. These undiagnosed patients may be diagnosed later when the disease has progressed to late stage and may jeopardize their life. These results corroborates another study that was done in Rwanda, which reveals that, screening of TB using the recommended WHO questionnaire was not routinely done in most facilities; and

whenever the filling of the questionnaire was done it was not accurately filled for every HIV patient attending the clinic in the health facilities surveyed [24].

Furthermore, the study found that, there was inconsistency in recorded patients' information between TB screening tools, patient's clinical notes and CTC2 cards. The information anomaly may bring about challenges in managing patients with inconsistent information. It would also lead to poor planning, budgeting and hence improper evidence-based decision making. If the information is not properly collected there is a chance of not including some patients in the budgeting. Data collection on TB screening among HIV patients from different clinics is supposed be routinely shared with the district authorities, however if the information or data is shared early at the facility level such inconsistency could be detected early before being shared at the district level.

5.6 Supportive supervision and improving the use of Tuberculosis screening tool

Supportive supervision is a managerial function which seeks to monitor and improve the quality of work of HCWs. This is achieved through development of relationships and environments with HCWs with ultimate attainment of common goals and values. In this study, majority of the respondents reported to be regularly supervised. Majority reported that mentorship on the use of TB screening tool was provided when an incorrect filled TB screening tool was found. This corroborates findings of a study done in Chalinze-Tanzania, which found that lack of regular mentorship and supportive supervision would lead to poor performance in health facilities [43]. This implies that with mentorship and regular supportive supervision visits, one would anticipate good performance in TB/HIV activities. On the other hand, this study found that there were a significant number of patients' files with blank TB screening tools despite the findings of regular mentorship and supportive supervision visits. This can be due to the fact that the mentorship and supportive supervision do not concentrate only on screening for TB, which calls for focused supervision visits for TB activities mainly screening for symptoms of TB infection.

Generally the study looked at the assessment of the use and availability of TB screening tool in HIV care and treatment clinics in Dar es Salaam. The gaps identified were inconsistency of patients' information in TB screening tool in matching with clinical notes and CTC2 card, there were significant number of blank TB screening tools, irregular unavailability of TB screening tools and inadequate supportive supervision done by health management team. This study conveniently looked at HIV care and treatments clinics in Dar es Salaam (Hospitals, Health Centres and 18 Dispensaries) however; this brings about potential for sampling bias as there are more dispensaries than health centres and hospitals in the region. Also Dar es Salaam being close to the MOHSW had an opportunity to be regularly supervised.

CHAPTER 6

6.0 CONCLUSION AND RECOMMENDATIONS

This chapter present conclusion and recommendations of the study

6.1 Conclusion

Overall all respondents regardless of their level of education, profession and working experience, used the TB screening tool to screen PLHAs for TB. They were aware of the importance of screening PLHAs for TB. This study revealed that TB screening tools sometimes are out of stock in some health facilities. Furthermore it was found that more than (68 percent) of TB screening tools were blank which indicates that there was irregular use of TB screening tool. Apart from that there were discrepancies between patient's information on TB screening tools, CTC2 cards and clinical notes. However in areas where respondents were trained and supervised, the majority showed to be using the TB screening tools.

6.2 Recommendations

- Regular use of TB screening tool and proper data sharing among health care workers working in HIV Care and Treatment Clinics should be emphasized to improve patients' information and hence increase case detection.
- Supportive supervision should be emphasized to improve the filling of TB screening tool in order to improve the detection rate of TB among PLHA patients.
- More studies should be conducted to find a way of integrating the TB screening tool with the CTC2 cards, in order to reduce the amount of time spent on paper work.

REFERENCES

- [1] J. Servilio, "HIV/TB dual infection cause for concern.," *Posit. Aware*, p. 8, Jan. 1995.
- [2] A. Reid, F. Scano, H. Getahun, B. Williams, C. Dye, P. Nunn, K. M. De Cock, C. Hankins, B. Miller, K. G. Castro, and M. C. Raviglione, "Towards universal access to HIV prevention, treatment, care, and support: the role of tuberculosis/HIV collaboration.," *Lancet Infect. Dis.*, vol. 6, no. 8, pp. 483–95, Aug. 2006.
- [3] A. Harries and C. Dye, "Tropical Medicine and Parasitology," 2006.
- [4] World Health Organization, "Global tuberculosis control: WHO report 2011." 2011.
- [5] D. S. MacDougall, "TB & HIV: the deadly intersection.," *J. Int. Assoc. Physicians AIDS Care*, vol. 5, no. 5, pp. 20–7, May 1999.
- [6] C. S. M. Currie, K. Floyd, B. G. Williams, and C. Dye, "Cost, affordability and cost-effectiveness of strategies to control tuberculosis in countries with high HIV prevalence.," *BMC Public Health*, vol. 5, no. 1471–2458 (Electronic), p. 130, Jan. 2005.
- [7] W. UNAIDS, "AIDS epidemic update: December 1999.," *AIDS Anal. Afr.*, vol. 10, no. 5, p. 2, Jan. 2009.
- [8] G. Hughes, C. Currie, and E. Corbett, "Modeling Tuberculosis in Areas of High HIV Prevalence," in *Proceedings of the 2006 Winter Simulation Conference*, 2006, pp. 459–465.
- [9] Ministry of Health and Social Welfare Dar es Salaam, "National Tuberculosis and Leprosy Programme Annual report 2011," 2012.
- [10] WHO, "Guidelines for intensified tuberculosis case-finding and isoniazid preventive therapy for people living with HIV in resource- constrained settings," *World Health*, vol. 01, 2011.
- [11] J. Mkaronda Psychologist and L. Chingandu, "A unique approach to enhancing HIV and AIDS information dissemination: the Southern Africa HIV and AIDS information network." 2008.
- [12] C. L. Daley, P. M. Small, G. F. Schecter, G. K. Schoolnik, R. A. McAdam, W. R. Jacobs, and P. C. Hopewell, "An outbreak of tuberculosis with accelerated progression among persons infected with the human immunodeficiency virus. An analysis using restriction-fragment-length polymorphisms.," *N. Engl. J. Med.*, vol. 326, no. 4, pp. 231–5, Jan. 1992.

- [13] P. Sonnenberg, J. Murray, J. R. Glynn, S. Shearer, B. Kambashi, and P. Godfrey-Faussett, "HIV-1 and recurrence, relapse, and reinfection of tuberculosis after cure: a cohort study in South African mineworkers.," *Lancet*, vol. 358, no. 9294, pp. 1687–93, Nov. 2001.
- [14] Ministry of Health and Social Welfare, "Manual of the National Tuberculosis and Leprosy Programme in Tanzania," 2006.
- [15] WHO, "Interim Policy on Collaborative TB/HIV activities," *World Heal. Organ.*, 2004.
- [16] E. L. Corbett, C. J. Watt, N. Walker, D. Maher, B. G. Williams, M. C. Raviglione, and C. Dye, "The growing burden of tuberculosis - Global trends and interactions with the HIV epidemic," *Arch. Intern. Med.*, vol. 163, no. 9, pp. 1009 – 1021, 2003.
- [17] C. Padmapriyadarsini and S. Swaminathan, "Tuberculosis preventive therapy in HIV-infected individuals.," *Bull. World Health Organ.*, vol. 72, no. 2, pp. 305–7, 309–11, Jan. 1994.
- [18] WHO, "Interagency Coalition on AIDS and development: TB/HIV Co-infection," 2010.
- [19] Ministry of Health and Social Welfare, "National TB and Leprosy Programme: Supervision report," 2011.
- [20] Ministry of Health Rwanda, "National Tuberculosis and Leprosy report," p. 2, 2009.
- [21] Ministry of Health Rwanda, "Tuberculosis Detection , Care , and Treatment for People Living with HIV in Rwanda," 2011.
- [22] J. Van Den Broek, S. Mfinanga, C. Moshiro, R. O'Brien, A. Mugomela, and M. Lefi, "Impact of human immunodeficiency virus infection on the outcome of treatment and survival of tuberculosis patients in Mwanza, Tanzania.," *Int. J. Tuberc. Lung Dis.*, vol. 2, no. 7, pp. 547 – 552, 1998.
- [23] N. Range, Y. A. Ipuge, R. J. O'Brien, S. M. Egwaga, S. G. Mfinanga, T. M. Chonde, Y. D. Mukadi, and M. W. Borgdorff, "Trend in HIV prevalence among tuberculosis patients in Tanzania, 1991-1998.," *Int. J. Tuberc. Lung Dis.*, vol. 5, no. 5, pp. 405–12, May 2001.
- [24] E. L. Corbett, R. W. Steketee, F. O. Ter Kuile, A. S. Latif, A. Kamali, and R. J. Hayes, "HIV-1/AIDS and the control of other infectious diseases in Africa," *Lancet*, vol. 359, no. 9324, pp. 2177 – 2187, 2002.
- [25] WHO, "WHO Policy on TB Infection Control in Health-Care Facilities, Congregate Settings and Households," 2009.

- [26] WHO, "Global Tuberculosis Control (MPCBM 5VCFSDVMPTJT POUSPM," *Control*, vol. WHO/HTM/TB, 2010.
- [27] C. By, T. A. Group, I. Community, E. Africa, and C. By, "CIVIL SOCIETY UNGASS TB / HIV COUNTRY REPORT KENYA," no. January, 2010.
- [28] F. O. R. Activities, T. O. Decrease, T. H. E. Burden, T. Among, P. Living, W. Hiv, A. Ababa, F. Of, T. H. E. Requirements, and F. O. R. The, "ADDIS ABABA UNIVERSITY FACULTY OF MEDCINE SCHOOL OF PUBLIC HEALTH," no. July, 2008.
- [29] R. Okot-Chono, F. Mugisha, F. Adatu, E. Madraa, R. Dlodlo, and P. Fujiwara, "Health system barriers affecting the implementation of collaborative TB-HIV services in Uganda.," *Int. J. Tuberc. Lung Dis.*, vol. 13, no. 8, pp. 955–61, Aug. 2009.
- [30] M. Sode, N. Mwanaisha, M. Peter, C. Caterina, C. Joseph, N. Harriet, M. Redempta, H. Andrea, M. Zahra, and C. Amy, "Intensified TB Case Finding Among PLHIV in Tanzania," 2008.
- [31] Ministry of Health and Social Welfare Tanzania, "National Policy Guidelines for Collaborative TB/HIV activities," 2008.
- [32] C. and S. A. H. C. East, *Review of policies, Guidelines and Programmes on Mangement of TB patients at HIV/AIDS service delivery points: Tanzania Country reports*. 2011.
- [33] M. J. A. Reid and N. S. Shah, "Approaches to tuberculosis screening and diagnosis in people with HIV in resource-limited settings.," *Lancet Infect. Dis.*, vol. 9, no. 3, pp. 173–84, Mar. 2009.
- [34] L. Gilson, H. Kitange, and T. Teuscher, "Assessment of process quality in Tanzanian primary care.," *Health Policy*, vol. 26, no. 2, pp. 119–39, Dec. 1993.
- [35] Department of Health and Family Welfare Uttar Pradesh, "Facilitative Supervision Handbook." 2002.
- [36] S. E. D. Nsimba, A. Y. Massele, J. Eriksen, L. L. Gustafsson, G. Tomson, and M. Warsame, "Case management of malaria in under-fives at primary health care facilities in a Tanzanian district.," *Trop. Med. Int. Health*, vol. 7, no. 3, pp. 201–9, Mar. 2002.
- [37] M. Lani, "Making Supervision Supportive and Sustainable: New Approaches to Old Problems," vol. Paper No, no. 4. 2002.

- [38] I. Boniphace, J. Boniface, M. Ferdinand, and T. Marcel, "Management of HIV and AIDS at lower primary health care facility in Chalinze, eastern Tanzania.," *Tanzan. J. Health Res.*, vol. 13, no. 3, pp. 252 – 263, 2011.
- [39] Ghana Health service, "Facility Baseline Assessment of Regional Hospitals and Facilities in 28 Target Districts in Seven Regions of Ghana," no. May, 2005.
- [40] F. Lwila, "The role of clinic supervisors in clinical supervision in primary health care services in Tanzania," pp. 1–25, 2009.
- [41] M. I. Survey, "HIV/AIDS and Malaria Indicator Survey 2007-08," 2007.

APPENDICES

Appendix 1: Informed consent form, English version

**MUHIMBILI UNIVERSITY COLLEGE OF HEALTH SCIENCES
DIRECTORATE OF RESEARCH AND PUBLICATIONS**

INFORMED CONSENT

ID-NO

Consent to participate in this study

Greetings, My name is, I am working on this research project with the objective of assess the extent of use and accessibility of TB screening tool in health facilities in detecting Tuberculosis cases among people living with HIV/AIDS in Care and Treatment Clinics in Dar es Salaam region.

Purpose of the Study

This study has the purpose of collecting information about use and accessibility of TB screening tool in health facilities in detecting Tuberculosis cases among people living with HIV/AIDS in Care and Treatment Clinics in Dar es Salaam. You are being asked to participate in this study because you have particular knowledge and experiences that may be important to the study.

What participation involves

If you agree to participate in this study the following will occur:

1. You will sit with a trainer interviewer and answer questions about the use and accessibility of TB screening tool by health care workers in detecting Tuberculosis cases among PLHA and finally your comments on what should be done to improve the situation. The interviewer will be recording your responses in the questionnaire.
2. No identifying information will be collected from you during this interview, except your age, level of education, marital status.
3. You will be interviewed only once for approximately 20-25 minutes in a private setting.

Confidentiality

I assure you that, all the information collected from you will be kept confidential. Only people working in this research study will have access to the information. We will be compiling a report, which will contain responses from several clients without any reference to individuals. We will not put your name or other identifying information on the records of the information you provide. However, the final results after the analysis will be shared with national stakeholders and I will submit the manuscript for publication in scientific journals.

Right and withdrawal alternatives

Taking part in this study is completely your choice. You may decline from participation to the study at anytime during interview even if you have consented to participate. Your decision to participate or not will not be associated with your right to work in the facility. There is no penalty for refusing to participate on the study. You will not experience any loss if you refuse to participate in this study.

Benefits

The information you provide will help to increase our understanding and give a clear picture on the use and accessibility of TB screening tool in health facilities in detecting Tuberculosis cases among PLHA in Care and Treatments Clinics in Dar Es Salaam, Tanzania. This can therefore help in providing useful information and contribute to future health care policy formulation and strategic planning.

In case of damage/injury

We do not anticipate that any harm will occur to you or your family as results of participation in this study.

Risks

You will be asked questions about the use and accessibility of TB screening tool in your areas of work. Some questions could potentially make you feel uncomfortable. You may refuse to answer any particular question and may stop the interview at any time.

Who to Contact

If you ever have questions about this study, you should contact the **Principal Investigator, Rose Olotu(+255 787 960144)** of Muhimbili University of Health and Allied Sciences, P. O. Box 65001, Dar es Salaam. If you ever have questions about your rights as a participant, you may call **Prof. Mohammed Aboud, Chairman (Research and Publications Committee, MUHAS. P. O. Box 65001, Dar es Salaam – Tanzania, Tel +2552150302-6);** and **Dr. P.G.M Mujinja** who is the supervisor of this study (Tel. **0754 271 171**)

Signature:

Do you agree?

Participant agrees { }

Participant does NOT agree { }

I _____ have read/understood the contents in this form. My questions have been answered. I agree to participate in this study.

Signature of participant: _____

Signature of Research Assistant: _____

Date of signed consent: _____

DECLARATION

The above document describing the benefits, risks, and procedures for the research titled "Assessment of the use and accessibility of Tuberculosis screening tool in HIV care and treatment clinics in Dar es Salaam" has been read and explained to me and I have agreed to participate. I certify that the nature and purpose, the potential benefits and possible risks associated with participating in this study have been explained to me.

Signature or Right Thumb stamp of the respondent: _____

DATE: _____

Signature of Research Assistant: _____

DATE: _____

Appendix 2: Informed consent form, Swahili version

**MUHIMBILI UNIVESRITY COLLEGE OF HEALTH SCIENCES
DIRECTORATE OF RESEARCH AND PUBLICATIONS
FOMU YA RIDHAA**

Namba ya Utambulisho

Ridhaa ya kushiriki katika utafiti hii

Habari! Jina langu naitwa _____nafanya kazi katika mradi huu wa utafiti wenye lengo la kutathmini utumiaji na upatikanaji wa dodoso la kifua kikuu katika vituo vya afya kwa ajili ya kudodosa kifua kikuu kwa wanaoishi na virusi vya UKIMWI (WAVIU) katika kliniki za huduma na tiba jijini Dar Es Salaam.

Malengo ya Utafiti

Utafiti huu una lengo la kukusanya taarifa za matumizi ya dodoso la kifua kikuu na upatikanaji wa dodoso hilo katika kliniki za huduma na tiba. Unaombwa kushiriki katika utafiti huu kwa sababu una uelewa ambao unaweza kuwa muhimu katika tafiti hii.

Ushiriki

Ukikubali kushiriki utafiti huu yafuatayo yatotokea:

1. Utakaa na msaili/mtafiti aliyepewa mafunzo ya jinsi ya kuhoji na kujibu maswali yahasuyo ufahamu wako wa matumizi ya dodoso la kifua kikuu na upatikanaji wake katika kliniki za huduma na tiba na mwisho kabisa kwa maoni yako ni nini kifanyike kuboresha hali na nini kifanyike kuboresha huduma ya afya katika mkoa wa Dar es Salaam. Msaili atakua ananukuu majibu yako katika dodoso.
2. Hakuna taarifa zozote za utambulisho tutakazokusanya wakati wa usaili isipokua umri, kiwango cha elimu na hali yako ya ndoa.
3. Utohojiwa mara moja tu kwa takriban dakika 20 hadi 25.

Usiri

Nakuhakikishia kwamba taarifa zote zitakazokusanywa kutoka kwako zitakua ni siri, ni watu wanaofanya kazi katika utafiti huu tu ndio wanaweza kuziona taarifa hizi. Hatutaweka jina lako au taarifa yoyote ya utambulisho kwenye kumbukumbu za taarifa utakazotupa. Japokuwa, majibu ya mwisho baada ya kuhanisha na kushirikisha taasisi za serikali na zisizo za serekali.

Hatari

Utaulizwa maswali juu ya ufahamu wako kuhusu utumiaji na upatikanaji wa dodoso la kifua kikuu na upatikanaji wake. Baadhi ya maswali yanaweza kukufanya usijisikie vizuri. Unaweza kukataa kujibu swali lolote na unaweza kusimamisha usaili wakati wowote.

Haki ya kujitoa na mbadala wowote

Kushiriki katika utafiti huu ni uchaguzi wako, unaweza kuacha kushiriki katika utafiti huu muda wowote hata kama ulikwishatoa idhini yako. Kukataa kushiriki au kujitoa kutoka kwenye utafiti hakutahusisha adhabu yoyote.

Faida

Kama utakubali kushiriki kwenye utafiti huu taarifa utakazotoa zitatuwezesha kutupa mwanga zaidi juu utumiaji na upatikanaji wa dodoso la kifua kikuu kwa wafanyakazi wanaohudumia watu waishio na virusi vya ukwimwi kwenye kliniki za huduma na tiba mkoani Dar es Salaam. Matokeo ya utafiti huu yanaweza kutoa taarifa ambazo zinaweza kusaidi katika kuboresha sera ya huduma ya afya na mipango.

Endapo utapata madhara

Hatutegemei madhara yoyote kutokea kwa kushiriki kwako katika tafiti hii.

Nani wa kuwasiliana naye

Kama una maswali kuhusiana na utafiti huu, wasiliana na Mtafiti mkuu wa utafiti huu, **Rose Olotu (Tell. +255 787 960144)** wa Chuo Kikuu cha Afya na Sayansi ya Tiba Muhimbili, S. L. P. 65001, Dar es Salaam.

Kama una swali kuhusu stahili zako kama mshiriki unaweza kumpigia simu kwa **Mwenyekiti wa baraza la Utafiti na machapisho Prof. Saidi Aboud S.L.P. 65001, Dar-es Salaam. (Simu: 2150302-6)** au msimamizi wa utafiti huu Dr. PGM Mujinja (0754 271 171).

Sahihi: _____

Je umekubali?

Mshiriki amekubali: _____

Mshiriki hajakubali: _____

Mimi _____ nimesoma maelezo ya fomu hii.

Maswali yangu yamejibiwa. Nakubali kushiriki katika utafiti huu.

Sahihi ya mshiriki: _____

Sahihi ya mtafiti msaidizi: _____

Tarehe ya kutia sahihi ya idhini ya kushiriki: _____

Appendix 3: Questionnaire (English version)

Assessment of the use and accessibility of TB screening tool in HIV Care and Treatment Clinics in Dar es Salaam

Questionnaire number:

1. Health facility information

a)	Name of the health facility.....	
b)	Name of the district.....	
c)	Level of the health facility (i) Hospital (ii) Health centre (iii) Dispensary	
d)	Type of the health facility (i) Public (ii) Private	

2. Demographic profile of the informant:

a)	Age	
b)	Sex (i) Male (ii) Female	
c)	Marital status (i) Married (ii) Single (iii) Widow (iv) Separated/divorced	
d)	Highest education level attained (i) Primary level (ii) Secondary level (iii) College (iv) University (v) Others (mention).....	

e)	Professional/cadre (i) Clinical officer..... (ii) Nurse..... (iii) Nurse Auxiliary..... (iv) Assistant Medical Officer (v) Others (Mention).....	
f)	How long have you worked in care and treatment clinics? (i) Just employed (ii) Less than 6 months (iii) Between 6 months and 1 year (iv) More than 1 year	
g)	What are your assigned duties in this Clinic? <i>(there might be more than one response)</i> 1. Medical examination and prescription (i) Adherence counselling (ii) Health education (iii) Dispensing drugs (iv) Screening for opportunistic infection, TB, pregnancy (v) Other (specify).....	
h)	Do you have any other duties apart from the above mentioned? (i) Yes (ii) No	
i)	If the answer is Yes, kindly mention the duties.....	

AWERNESS OF HEALTH CARE WORKERS ON THE USE OF TB SCREENING TOOL

3. What are the services offered in this clinic for PLHIV?

1.	
2.	
3.	
4.	
5.	

4. Have you ever heard about collaborative TB/HIV activities?

a) Yes	
b) No _____ skip to Q 6	

5. If yes, what was the source of your information about the collaborative TB/HIV activities?

1. Training	
2. Seminars	
3. Supervisions	
4. Meetings	
5. Others (mention).....	

6. Why do you think the collaborative activity recommends screening of TB among HIV/AIDS patients?

1. Early detection of TB among PLHIV	
2. Prevention of TB among PLHIV	
3. Early treatment of TB among PLHIV	
4. Others (mention)	
5. I don't know	

7. Have you ever heard about TB screening tool?

1. Yes	
2. No	

8. Were you trained on how to use the TB screening tool?

3. Yes	
4. No	

9. If Yes, for how long?

--	--

10. Have you ever used it for a patient?

1. Yes	
2. No	
3. I don't know	

11. When did you last screen PLHIV for TB?

1. Today or yesterday	
2. Within one week	
3. Within one month	
4. Never	

12. What are the main content of the TB screening tool?

1.	
2.	
3.	
4.	
5.	

13. Can you mention the five questions that are in the National TB screening tool?

1.	
2.	
3.	
4.	
5.	

14. When you screen the person and the response is NO to all 5 of questions. What next step did/or will you take?

1.	Refer the patient to TB clinic	
2.	Order laboratory investigation (sputum for AFB)	
3.	Start the patient on anti-TB	
4.	Screen the patient in the next visit	
5.	I don't know	
6.	Other (specify)	

15. How do you interpret the results on the TB screening questionnaire in case the patient says YES to one or more questions?

1.	Refer the patient to TB clinic	
2.	Order laboratory investigation (sputum for AFB)	
3.	Start the patient on anti-TB	
4.	Screen the patient in the next visit	
5.	I do not refer	
6.	I don't know	

16. Do you find this questionnaire useful?

1.	Yes	
2.	No	
3.	I don't know -----skip to Q 19	

17. If NO, why

.....

18. If YES, explain how

.....

19. When do you fill the questionnaire?

1.	When screening the patient	
2.	Before screening the patient	
3.	After screening the patient	
4.	During and after screening the patient	
5.	I am not sure....go to QN 21	
6.	I do not know...go to QN 21	

20. Which parts do you fill most?

1.	Demographic information	
2.	The response of the 5 questions	
3.	The follow up after the patient been suspected to have TB	

21. Have you ever failed to fill the TB screening tool?

1.	Yes	
2.	No	
3.	I don't know	

22. If Yes why?

.....

23. Is the TB screening questionnaire user friendly?

1. Yes	
2. No	
3. I do not know	

24. If "No" explain how

.....
.....

25. Are there any problems or challenges you face during screening for TB among PLHIV?

1. Yes	
2. No...go to qn. 39	

26. If the answer is YES what those problems/challenges are:

.....
.....
.....
.....
.....
.....

27. What would be your suggestions in improving and detecting patients who are infected by both HIV and TB?

- (i)
- (ii)
- (iii)

EXPLORE THE ACCESSIBILITY OF THE TB SCREENING TOOL AS PERCEIVED BY HEALTH CARE WORKERS

28. Have you ever not screened the patient due to lack of TB screening tool?

1. Yes	
2. No -----skip to Q 43	

29. If yes, how many times in the last 6 months have you missed to screen the patient due to lack of TB screening tool?

1. 1 times	
2. 2 times	
3. 3 times	
4. I don't remember	

30. For how long if that happen?

.....days/weeks	
-----------------	--

31. Where do you normally get the supply of these TB screening forms?

1. Facility health in-charge	
2. Supervisor	
3. Store manager	
4. I don't know	
5. Others (mention).....	

32. Is there a systematic procedure of ordering TB screening tool in place?

1. Yes	
2. No	
3. I don't know	

33. Is there staffs responsible for ordering and issuing the TB screening tool to HCWs?

1. Yes	
2. No	
3. I don't know	

SUPERVISION CONDUCTED IN HIV CARE AND TREATMENT CLINICS

34. Have you ever been supervised?

1. Yes	
2. No -----skip to Q 52	
3. I don't remember	

35. If Yes, how many times?

1. One time	
2. Two times	
3. Three times	

36. How frequency does the supervisors conduct supportive supervision?

--	--

37. Who else conducts supportive supervision at this clinic apart from the supervisors?

1. NACP	
2. NTLP	
3. CHMT/RHMT	
4. Other (specify).....	

38. In the last 3 month how many times have they conduct supportive supervision in this clinic?

--	--

39. What exactly did they do the last time they visited this clinic? (*Multiple responses*)

1. Mentorship	
2. On the job training	
3. Patient files checking	
4. Other (mention).....	
5. I don't know	

40. During the last supervision visit did the team ask you about TB/HIV collaborative activities especially regarding TB screening among PLHIV?

1. Yes	
2. No	
3. I don't know	

41. At any point has the supervisor ever told you or returned the TB tool/form for not filling it correctly?

1. Yes	
2. No	
3. Never happened before	
4. I don't remember	

42. During the last supervision visit did the team give you opportunity to share your experiences and challenges you face during TB screening among PLHIV?

1. Yes	
2. No	
3. I don't know	

43. At the end of the last supervision did the team give on site feedback on what they had observed or find?

1. Yes	
2. No	
3. I don't know	

Appendix 4: Questionnaire (Kiswahili version)**Nambari ya dodoso:****Taarifa binafsi****1. Taarifa za kituo cha kutolea huduma za afya:**

a.	Jina la kituo cha afya	
b.	Jina la Wilaya.....	
c.	Ngazi ya kituo cha afya	
1.	Hospitali	
2.	Kituo cha afya	
3.	Zahanati	
d.	Aina ya kituo cha afya	
1.	Serekali	
2.	Binafsi	

2. Taarifa za mhojiwa:

a)	Umri	
b)	Jinsia	
1.	Me	
2.	Ke	
c)	Hali ya ndoa	
1.	Nimeoa/Nimeolewa	
2.	Sijaoa/Sijaolewa	
3.	Mjane	
4.	Tumetengana/tumeachana	
d)	Kiwango cha elimu ulichonacho:	
1.	Elimu ya msingi	
2.	Elimu ya sekondari	
3.	Chuo	
4.	Chuo kikuu	

5.	Nyingine (taja).....	
e)	Ngazi ya cheo chako cha kazi..... 1.Afisa Tabibu..... 2.Muuguzi 3.Muuguzi msaidizi 4..Mganga msaidizi 5 Nyingine (taja).....	
f)	Umefanya kazi kwenye kliniki ya huduma na tiba kwa muda gani sasa? 1. Nimeajiriwa hivi karibuni 2. Chini ya miezi 6 3. Kati ya miezi 6 na mwaka mmoja 4. Zaidi ya mwaka mmoja	
g)	Je, ni shughuli gani kuu ulizopangiwa katika kituo hiki?(Unaweza kusema zaidi ya jibu moja) 1. Kuona wagonjwa na kuwaandikia dawa 2. Ushauri juu ya ufuhasi wa dawa 3. Kutoa elimu ya afya 4. Kutoa dawa kwa wagonjwa 5. Ukaguzi wa magonjwa nyemelezi (kifua kikuu) na ujauzito 6. Nyingine (taja).....	
h)	Je unafanya kazi zaidi ya ulizosema hapo juu? 1. Ndiyo 2. Hapana	
i)	Kama jibu ni ndiyo, tafadhali taja kazi hizo.....	

**UFAHAMU WA WAFANYAKAZI WA AFYA JUU YA UTUMIAJI WA DODOSO
LA KIFUA KIKUU**

3. Huduma gani zinazotelewa kwa watu waishio na virusi vya ukimwi katika kliniki hii?

1.	
2.	
3.	
4.	
5.	

4. Je ulishawahi kusikia kuhusu huduma shirikishi za kifua kikuu na VVU?

1.	Ndiyo	
2.	Hapana -----nenda swali la 6	

5. Jibu kama ni NDIYO, ni vipi vilikuwa vyanzo vya taarifa hizo za huduma shirikishi za kifua kikuu na ukimwi? (*jibu linaweza kuwa zaidi ya moja*)

1.	Mafunzo	
2.	Ziara ya usimamizi	
3.	Semina	
4.	Mikutano	
5.	Nyinginezo (taja).....	

6. Unafikiri ni kwa nini huduma shirikishi za kifua kikuu na ukimwi zinashauri udodasaji wa kifua kikuu kwa watu waishio na virusi vya ukimwi?

1.	Utambuzi wa mapema wa kifua kikuu kwa WAVIU	
2.	Uzuiaji wa kifua kikuu kwa WAVIU	
3.	Kutibu kifua kikuu mapema kwa WAVIU	
4.	Nyingine (taja).....	
5.	Sifahamu	

7. Umeshawahi kusikia kuhusu dodoso la kudodosa kifua kikuu kwa wagonjwa waishio na virusi vya ukimwi?

1.	Ndiyo	
2.	Hapana	

8. Umeshawahi kufundishwa jinsi ya kutumia dodoso la kudodosa kifua kikuu?

1.	Ndiyo	
2.	Hapana	

9. Kama NDIYO ni kwa muda gani?

--	--

10 Umeshawahi kutumia dodoso la kifua kikuu kwa wagonjwa?

3.	Ndiyo	
4.	Hapana	

11. Lini mara ya mwisho kudodosa kifua kikuu kwa wagonjwa waishio na virusi vya ukimwi?

1.	Leo au jana	
2.	Ndani ya wiki moja	
3.	Ndani ya mwezi mmoja	
4.	Sijawahi	

12. Nini maudhui (mambo muhimu yanayoelezwa) kwenye dodoso la kifua kikuu?

1.		
2.		
3.		
4.		
5.		

13.. Unaweza kutaja maswali matano yaliyoko kwenye dodoso la kifua kikuu kwa watu wanaoishi na VVU?

1.		
2.		
3.		
4.		
5.		

14. Kama majibu yote ya maswali ni “**HAPANA**” kwenye dodoso. Unaelekezwa kufanya nini?

1.	Anapewa rufaa ya kwenda kwenye kliniki ya kifua kikuu	
2.	Anafanya vipimo vya makohozi maabara	
3.	Mgonjwa anaanzishiwa matibabu ya kifua kikuu	
4.	Fanya zoezi la uchunguzi wa kifua kikuu mgonjwa akirudi mara ya pili	
5.	Nyinginezo(Elezea)	
6.	Sifahamu	

15. Na kama majibu ni “**NDIYO**” kwa maswali yote au baadhi ya dalili. Unaelekezwa kufanya nini?

1.	Kumpa rufaa ya kwenda kwenye kliniki ya kifua kikuu	
2.	Kufanya vipimo vya makohozi maabara	
3.	Mgonjwa anaanzishiwa matibabu ya kifua kikuu	
4.	Fanya zoezi la uchunguzi tena mgonjwa akirudi kwa mara ya pili	
5.	Sitoi rufaa	
6.	Sifahamu	

16. Unaona kuwa hili dodoso la kifua kikuu ni muhimu?

1.	Ndiyo	
2.	Hapana	
3.	Sifahamu -----nenda kwenye swali la 19	

17. Kama HAPANA, elezea kwa nini unafikiri hivyo

.....

18. Kama jibu ni NDIYO, elezea ni kwa jinsi gani

.....

19. Ni wakati gani unajaza dodoso la kifua kikuu?

1.	Wakati namdodosa mgonjwa	
2.	Kabla ya kumdodosa mgonjwa	
3.	Baada ya kumdodosa mgonjwa	
4.	Wakati na baada ya kumdodosa mgonjwa	
5.	Sina uhakika....nenda swali 21	
6.	Sijui.....nenda swali 21	

20. Kipengela gani unajaza zaidi?

1.	Taarifa binafsi za mgonjwa	
2.	Majibu ya maswali matano	
3.	Kipengele kinachohusika na ufuatiliaji wa mgonjwa mara azaniwapo ana maambukizi ya kifua kikuu	

21. Umeshawahi kushindwa kujaza dodoso la kifua kikuu?

1.	Ndiyo	
2.	Hapana	
3.	Sifahamu	

22. Kama ndiyo kwa nini?

.....

23. Unafikiri dododso la kifua kikuu ni rahisi kutumia? (mazingira rafiki?)

1.	Ndiyo	
2.	Hapana	
3.	Sijui	

24. Kama hapana, eleza ni kwa jinsi gani

.....

25. Je kuna matatizo au changamoto unazokutana nazo wakati unajaza dodoso la kifua kikuu?

1.	Ndiyo	
2.	Hapana...nenda swali 39	

26. Jibu kama ni NDIYO, tafadhali taja matatizo au changamoto

.....

27. Nini maoni yako kenye kuboresha na kuibuwa kifua kikuu kwa wagonjwa wanaoishi na virusi vya ukimwi?

- 1.....
- 2.....
- 3.....

TAZAMA UPATIKANAJI WA FOMU ZA KUDODOSA DALILI ZA KIFUA KIKUU KWA MTAZAMO WA WATOA HUDUMA

28. Umeshawahi kutokudodosa wagonjwa kwa ajili ya kukosa dodoso la kifua kikuu?

1.	Ndiyo
2.	Hapana -----nenda swali la 43

29. Kama NDIYO, mara ngapi ndani ya miezi sita umekosa dodoso la kudodosea kifua kikuu?

1.	Mara 1
2.	Mara 2
3.	Mara 3
4.	Sikumbuki

30. Kwa muda gani kama hali hiyo ikitokea?

.....siku/wiki

31. Nani huwa anawaletea dodoso la kuchunguza kifua kikuu katika kliniki yenu hii?

1.	Mganga mkuu wa kituo	
2.	Msimamizi wa idara	
3.	Msimamizi wa stoo	
4.	Sifahamu	
5.	Nyingine (taja).....	

32. Je kuna utaratibu maalumu wa uagizaji wa fomu za kudodosa dalili za kuwepo maambukizi ya kifua kikuu kwa watu wanaoishi na VVU?

1.	Ndiyo	
2.	Hapana	
3.	Sijui	

33. Je kuna mtumishi maalumu anayshughulikia uagizaji na uwepo wa dodoso la kuchunguza maambukizi ya kifua kikuu?

1.	Ndiyo	
2.	Hapana	
3.	Sijui	

ZIARA YA USIMAMIZI KATIKA KLINIKA

34. Umeshawahi kukaguliwa na wasimamizi wa afya?

1.	Ndiyo	
2.	Hapana -----nenda swali la 52	
3.	Sikumbuki	

35. Kama NDIYO ni mara ngapi ndani ya miezi sita iliyopita?

1.	Mara 1	
2.	Mara 2	
3.	Mara 3	

36. Ni mara ngapi wasimamizi wanafanya ziara ya usimamizi?

--

37. Zaidi ya Timu ya wilaya ya afya, Je wasimamizi wengine wanaofanya usimamizi (supportive supervision) wanatoka wapi?

1.	NACP	
2.	NLP	
3.	CHMT/RHMT	
4.	Wengine (taja).....	

38. Ndani ya miezi mitatu iliyopita ni mara ngapi wasimamizi wamefanya ziara ya usimamizi kwenye kliniki yenu hii?

--

39. Mara ya mwisho kuwatembelea hapa kituoni walifanya nini haswa? (*yawezekana kupata majibu zaidi ya moja*)

1.	Mafunzo kwa vitendo(mentorship)	
2.	Mafundisho kazini(On the job training)	
3.	Walikagua mafaili	
4.	Nyingine (taja).....	
5.	Sikumbuki	

40. Mara ya mwisho ulipotembelewa na wasimamizi ,Je walikuuliza kuhusu huduma shirikishi za kifua kikuu ikiwemo uchunguzi (screen) ya kifua kikuu kwa wagonjwa waishio na virusi vya ukimwi?

1.	Ndiyo	
2.	Hapana	
3.	Sikumbuki	

41. Kuna wakati wowote ndani ya ziara ya usimamizi, msimamizi alishawahi kukurudishia au kukuonyesha dodoso la kifua kikuu ambalo halijajazwa vizuri?

1.	Ndiyo
2.	Hapana-----
3.	Haijawahi kutokea
4.	Sikumbuki

42. Mara wa mwisho ziara ya usimamizi ilipokutembelea Je, walikupa muda ili uweze kueleza uzoefu wako na changamoto unazozipata kwenye kudodosa kifua kikuu kwa wagonjwa waishio na virusi vya ukimwi?

1.	Ndiyo
2.	Hapana
3.	Sikumbuki

43. Mara ya mwisho ziara ya usimamizi ilipofanyika Je, kuna mrejesho wowote uliopewa?

1.	Ndiyo	
2.	Hapana	
3.	Sikumbuki	

Appendix 5: Assessment checklist questionnaires (English version)**TB screening questionnaire tool****Part 1: Social demographic Characteristics**

Item	Correctly filled	Incorrectly filled	Blank
	1	2	3
1. Patient name			
2. CTC. Registration number			
3. Date of birth: /.../..			
4. Sex			
5. Physical address			
6. Contact telephone (if available)			
7. Date			

Part II: Five TB questions in the TB screening questionnaire (symptoms)

Symptom	1	2	3
	Correctly filled	Incorrectly filled	Blank
8. Cough for >2 week			
9. Coughing up bloodstained sputum (haemoptysis)?			
10. Fever for >2 weeks?			
11. Noticeable weight loss for new patients or 3 kgs weigh loss in a month (subsequent visit)			
12. Excessive sweating at night for >2 weeks?			

Part III: If ‘YES’ to one or more questions enter the code “*TB Susp*” in the TB status column of the CTC2 form and complete the respective column in the table below:

Symptom	1	2	3
	Correctly filled	Incorrectly filled	Blank
13. Do sputum smear for AFB and enter results (pos / neg)			
14. If sputum negative, do chest X-ray and enter result(suggestive or not suggestive)			
15. Outcome of assessment (TB or No TB)			

If ‘No’ to all questions: Do not initiate TB investigations and repeat screening at the subsequent visit. Enter the code “NO” in the TB status column of the CTC2 form

	Correctly filled	Incorrectly filled	Blank
16. Check CTCs 2 form for the “NO” cod			
17. Check CTCs 2 form for the consistency with TB screening questionnaire			

IV: Information to be extracted from patient's records files**Check clinical notes for the consistency with TB screening tool**

1. Cough for >2 weeks	Yes	No	Blank
2. Coughing up bloodstained sputum (haemoptysis)?			
3. Fever for >2 weeks?			
4. Noticeable weight loss for new patients or 3 kgs weigh loss in a month (subsequent visit)			
5. Excessive sweating at night for >2 weeks?			
6. Do sputum smear for AFB and enter results (pos / neg)			
7. If sputum negative, do chest X-ray and enter result(suggestive or not suggestive)			
8. Outcome of assessment (TB or No TB)			

Appendix 6: Orodha ya Maswali ya kutathmini (Kiswahili version)

Fomu ya dodoso la uchunguzi dalili za maambukizi ya kifua kikuu Kwa watu wanaoishi Na VVU

Sehemu 1: Tabaka la kiuchumi na kijamii

Taarifa zimejazwa	Limejazwa vizuri	Halijajazwa vizuri	Halijajazwa kabisa
	1	2	
1. Jina la mgonjwa			
2. CTC number ya usajili			
3. Tarehe ya kuzaliwa:...../...../.....			
4. Jinsia			
5. Anwani			
6. Nambari ya simu kama inapatikana			
7. Tarehe			

Sehemu II: Maswali matano yaliyopo kwenye fomu ya dodoso la kifua kikuu (dalili)

Dalili	1	2	3
	Limejazwa vizuri	Halijajazwa vizuri	Halijajazwa kabisa
8. Kikohozi cha wiki mbili au zaidi			
9. Kikohozi chenye damu			
10. Homa ya wiki mbili au zaidi			
11. Kupungua kwa uzito kwa wagonjwa wapya au kupungua uzito wa kilo 3 ndani ya mwezi mmoja			
12. Kutoka jasho usiku kwa wiki mbili au zaidi			

Sehemu III: Kama ‘NDIYO’ kwa mojawapo ya majibu kwenye maswali kwenye dodoso, weka “TB Susp” kwenye mstari msimamo wa hali ya kifua kikuu kwenye kadi ya CTC2 na jaza kwenye mstari msimamo kwenye jedwali husika:

Dalili	1	2	3
	Limejazwa vizuri	Halijajazwa vizuri	Halijajazwa kabisa
13.Kuchukua makohozi kwa ajili ya AFB na kuandika majibu			
14.Kama majibu ni hakuna maambukizi, piga picha ya Xray na andika majibu			
15.Matokeo ya uchunguzi (TB au hakuna TB)			

Kama ‘HAPANA’ ni mojawapo ya majibu kwenye maswali kwenye dodoso, usianzisha mchakato wa vipimo vya kuangalia maambukizi ya kifua kikuu. Jana HAPANA kwenye mstari msimamo wa hali ya kifua kikuu kwenye kadi ya CTC2

	Limejazwa vizuri	Halijajazwa vizuri	Halijajazwa kabisa
16.Angalia kadi ya CTC 2 kwa alama ya HAPANA			
17.Angalia CTC 2 kwa usahihi wa ujazaji ukilinganisha na fomu ya dodoso la kifua kikuu			

Part 1V: Maelezo kutoka kwenye faili la mgonjwa

Angalia faili la mgonjwa kama linaoana na fomu ya dodoso la kifua kikuu.

SN	Angalia yafuatayo	Ndiyo	Hapana	Halijaja zwa kabisa
1.	Kikohozi cha wiki mbili au zaidi			
2.	Kikohozi chenye damu			
3.	Homa ya wiki mbili au zaidi			
4.	Kupungua kwa uzito kwa wagonjwa wapya au kupungua uzito wa kilo 3 ndani ya mwezi mmoja			
5.	Kutokwa na jasho jingi usiku kwa wiki mbili au zaidi.			
6.	Kuchukua makohozi kwa ajili ya AFB na kuandika majibu			
7.	Kama majibu ni hakuna maambukizi, piga picha ya Xray na andika majibu			
8.	Moatokeo ya mwisho (Kifua kikuu au hana kifua kikuu)			

Appendix 7: Letter approval of ethical clearance**MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
DIRECTORATE OF POSTGRADUATE STUDIES**

P.O. Box 65001
DAR-ES-SALAAM
TANZANIA
Telefax: 255-022-2150465
Telegrams: UNIVMED



E-MAIL dpgs@muhas.ac.tz
TEL: (255-022)-2150302-6 Ext. 207
Direct line: 2151378

Ref. No. MU/PGS/SAEC/Vol. VI/

27th August, 2012

Rose Thomas Olotu,
MPH
MUHAS.

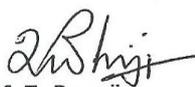
RE: APPROVAL OF ETHICAL CLEARANCE FOR A STUDY TITLED "HEALTH CARE WORKERS ATTITUDES AND ASSOCIATED FACTORS TOWARD THE USE OF TUBERCULOSIS SCREENING QUESTIONNAIRE AMONG PEOPLE LIVING WITHIN HIV/AIDS ATTENDING CARE AND TREATMENT CLINICS IN DAR ES SALAAM"

Reference is made to the above heading.

I am pleased to inform you that, the Chairman has on behalf of the Senate approved ethical clearance for the above-mentioned study.

Thus ethical clearance is granted and you may proceed with the planned study.

Please liaise with bursar's office to get your research fund.


Prof. Z. Premji
DIRECTOR, POSTGRADUATE STUDIES

/emm

c.c. Vice Chancellor, MUHAS
c.c. Deputy Vice Chancellor – ARC, MUHAS
c.c. Dean, School of Public Health and Social Sciences - MUHAS

Appendix 8: Introductory letter from Kinondoni Municipal Council

KINONDONI MUNICIPAL COUNCIL

ALL CORRESPONDENCES SHOULD BE DIRECTED TO THE MUNICIPAL DIRECTOR

Tel: 2171022



MUNICIPAL MEDICAL OFFICER OF
HEALTH,
KINONDONI MUNICIPAL COUNCIL
P.O. BOX 61665,
DAR ES SALAAM

In reply please quote:

Ref. No. FD/K/4/472

Date: 1st October 2012

Medical officer incharge/Facility Incharge

.....
KINONDONI MUNICIPAL.

RE: RESEARCH PERMIT

Ms Rose Thomas Olotu

The above mentioned is a student at Muhimbili University of Health and Health Allied Sciences (MUHAS) pursuing MPH. MMOH office has given her a permit to conduct research titled "Health care workers attitudes and associated factors towards the use of Tuberculosis screening questionnaires among people living with HIV/AIDS attending care and treatment clinics in Dar es Salaam" at your facility starting from 1st October 2012 to 1st November 2012.

Kindly provide her with required assistance

Best wishes,

Aleswa Zebedayo

**Research and HMIS Coordinator.
KINONDONI MUNICIPAL COUNCIL**

Appendix 9: Intoductory letter from Ilala Municipal Council

ILALA MUNICIPAL COUNCIL

ALL COMMUNICATIONS TO BE ADDRESSED TO THE MUNICIPAL DIRECTO
P.O. BOX 20950
PHONE NO: 2128800
2128805
FAX NO. 2121486

**MUNICIPAL OFFICE
 ILALA**

Ref: IMC / MED / R.18 / 5VOL.X/72

Date: 01/10/2012



Medical Officer In charge

.....
ILALA MUNICIPALITY

RE: PERMISSION TO CONDUCT RESEARCH

Please refer to the heading above.

Ms. Rose Thomas Olotu is a student at ~~Hubert~~ Muhimbili University of Health and Allied Sciences (MUHAS) pursuing MPH.

As part of her studies she is planning to conduct a study at your facility titled: **"Health care workers attitudes and associated factors toward the use of Tuberculosis screening questionnaires among people living with HIV/AIDS attending care and treatment clinics in - Dar es Salaam"**. After going through the proposal the Office of MMOH allowed her to conduct the above study at your facility.

Time to start data collection will be arranged when she visited your facility.

We hereby request your assistance as the researcher has accepted our condition of producing a copy of study **results** and **recommendations** to MMOH.

M Lewanga
Dr. Mary K. Lewanga

For:
 Copy:

MMOH - ILALA MUNICIPAL
 Researcher

**FOR MUNICIPAL MEDICAL OFFICER OF HEALTH
 ILALA MUNICIPAL**

Appendix 10: Intoductory letter from Temeke Municipal Council

TEMEKE MUNICIPAL COUNCIL

ALL COMMUNICATIONS TO BE ADDRESSED TO MUNICIPAL DIRECTOR

P.O.Box. 45232
Tel: 2850142



TEMEKE MUNICIPAL MEDICAL
OFFICE OF HEALTH
DAR ES SALAAM
TANZANIA.

Date 18/10/2012

CTC SITES
IN TEMEKE MUNICIPALITY

REF; PERMISSION TO CONDUCT HEALTH RESEARCH ACTIVITIES IN
TEMEKE MUNICIPALITY.

Please refer to the above heading.

Permission has been granted to Mr. /Mrs/Ms/Prof. /Dr. Rose Thomas Olotu,
From (Institution) MUKAS Address P.O.Box 65001 DSM,
Tel. No..... to collect data for research work at your institution.

The research title is
HEALTH CARE WORKERS ATTITUDES & ASSOCIATED FACTORS
TOWARD THE USE OF TUBERCULOSIS SCREENING QUESTIONNAIRES
AMONG PLHM/AIDS ATTENDING CTC CLINICS IN DAR ES SALAAM
S/he has submitted a proposal for the mentioned study to the MMOH Office as a
pre - condition prior to authorisation.

The researcher has been instructed and agreed to submit the research progress
reports and final results to the MMOH prior to any publications.

Data collection will start from 18/10/2012 to 19/11/2012
Sample size.....

This research work is part of academic fulfilment for Diploma/Advanced
Diploma/Degree/Master/PhD /its part of the ongoing research in your
Institution.

I am kindly requesting you to give him/her the necessary assistance so as to
accomplish this task timely.

Yours Sincerely

FOR MUNICIPAL MEDICAL OFFICE
OFFICE OF HEALTH
TEMEKE

Dr. L. Chipemba
For; Temeke Municipal Medical Officer of Health

Copy 1.....
2.....