SCHOOL OF PUBLIC HEALTH, COLLEGE OF HEALTH SCIENCES

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EVALUATION OF THE TB/HIV COLLABORATIVE ACTIVITIES IN THE MANYA KROBO DISTRICT OF THE EASTERN REGION

BY

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DECLARATION

I, **ALICE ABOAGYEWAA ADU**, declare that except for the other people's investigations / work which have been duly acknowledged, this work is the result of my own original research, and that this dissertation, either in whole or part has not been presented elsewhere for another degree.

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DEDICATION

I dedicate this dissertation to my only son Jared.

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Thank you God for the strength you gave me to go through the past year.

To Papa Nii, Naa Adjeley, Naa Adjokor and Jared, I would like to say thank you. The sacrifice was great but you made it for me.

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ABSTRACT

Background/ Objectives

Globally, HIV is fuelling the tuberculosis epidemic, creating a public health crisis of a major concern. In response to the dual epidemic the WHO recommended TB/HIV collaborative activities to be implemented by countries with HIV prevalence of more than 1%. In keeping with WHO recommendations, Ghana started the collaborative activities in a few districts of which Manya Krobo District was one. The objective of this study was to assess the performance of the TB/HIV collaborative activities in the Manya Krobo District.

Methods

An exploratory review using both qualitative and quantitative methods was done. Qualitative data was collected from 11 DOTS and 2 HAART centres and programme managers at the district and regional level. Retrospective records review of TB registers and clients cards was employed to obtain quantitative data.

Results

The key findings were poor collaboration and coordination of activities, poor data management and weak supervision and monitoring. The proportion of TB patients receiving HIV counselling and testing increased from 62.6% to 71.1% over the period. The proportion of TB patients who are tested and are positive increased from 50.9% to a peak 0f 71.7% and decreased to 68.5%.

The proportion of TB/HIV patients receiving CPT reduced from 93.1% to 78.4%. The proportion of TB/HIV patients receiving ART decreased from58.6% to 50% and increased to 61.1% but decreased again to 48.7%. Treatment success rate for TB/HIV patients decreased from 70.2% to 47.2% but increased again to 87.5 % over the period.

Conclusion

Evidently, much remains to be done by both programs to improve the implementation, monitoring and evaluation of collaborative TB-HIV activities and to optimize prevention, treatment and care for people infected with both TB and HIV. Sustaining and improving TB/HIV collaborative activities will require commitment from both NTP and NACP, establishment of mechanism for collaboration, provision of the needed logistics and strengthening of the monitoring and evaluation system at the regional and district levels.

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LIST OF ABBREVIATIONS

ACSM	Advocacy, Communication and Social Mobilisation
AIDS	Acquired Immunodeficiency Syndrome
CBO	Community Based Organizations
CHPS	Community based Health Planning Services
CPT	Co-trimoxazole Preventive Therapy
DDHS	District Director of Health Services
DHMT	District Health Management Team
DOTS	Directly Observed Treatment Short course - the internationally recommended strategy for TB control
HAART	Highly Active Anti Retroviral Therapy
HIV	Human immunodeficiency virus
IEC	Information Education And Communication
IPT	Isoniazid Preventive Therapy
MDG	Millennium development goals
NACP	National AIDS/STI Control Programme
NTP	National Tuberculosis Control Programme
OI	Opportunistic Infections
OPD	Out Patient Department
PLWHA	Persons Living With HIV/AIDS
RDHS	Regional Director of Health Services
STI	Sexually Transmitted Infections

TB	Tuberculosis
TB/HIV	The intersecting epidemics of TB and HIV
TWG	Technical Working Group
VCT	Voluntary Counselling And Testing
WG	Working Group
WHO	World Health Organization

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Although TB and HIV/AIDS are separate communicable diseases with different agents and routes of transmission, they nevertheless affect each other closely. Worldwide, HIV infection increases the risk of activating latent TB and of rapid progression after infection (**Lienhardt C, Rodrigues LC. (1997**) One-third of the world's population is latently infected with Mycobacterium tuberculosis. HIV is the greatest risk factor for the progression of latent or recent TB infection into active TB disease. Whereas 10% of HIV negative people with latent infection will develop TB disease in their **lifetime**, 10% of people with latent TB infection and HIV will develop active TB each **year** (**Stop TB Working Group**).

The impact of the converging dual epidemics of TB and HIV is one of the major Public Health concerns of our time. The WHO reports 8.8 million new cases of TB and 1.6 million TB-related deaths in 2005 of which 195,000 were infected with HIV. The global HIV/AIDS with its negative impact on TB is particularly felt in the African Region. It is estimated that 30%-70% of all newly diagnosed TB cases are also infected with HIV/AIDS and that about 40% of all AIDS death is due to TB (**Salaniponi 2005**). In Ghana, **the overall prevalence of TB/HIV co-infection is 15.5%.** Eastern and Upper West regions particularly show high prevalence of 23.1% and 26.3% respectively. **(Addo, Bonsu et al July 2008 unpublished**)

In a projected TB/HIV modelling conducted in 1989 it was estimated that the influence of HIV on TB would be increasing. Whereas in 1989 roughly 14% of TB cases could be attributed to

AIDS, by 2009 about 59% of the projected TB cases would be due to the HIV/AIDS epidemic (Ghana's **TB/HIV Technical Policy Guidelines 2007).**

Autopsies done in Accra found that the proportion of TB deaths increased from 3.2% in 1987/88 at the beginning of the HIV epidemic to 5.1% in 1997/98(**Gyasi , Kumoji and Akosa 2000**). Some hospital based studies indicate the prevalence of HIV in TB patients to be 25-30% and that as many as 50% of patients with chronic cough could be HIV positive. For instance, (Frimpong et al.1997) studied HIV infection in TB patients in Kumasi, Ghana. A total of 634 patients reporting to the Komfo Anokye Teaching Hospital (KATH) with pulmonary TB were recruited in the study. These patients were tested for HIV and the seroprevalence rate was 23.2 %. The difference between females and males tested was statistically significant, 28.6 % and 20.6 % respectively ($p<0.05$). The high prevalence rate observed led to recommendations for the establishment of more centres for counselling and screening of all TB patients for HIV. This has culminated in increased collaboration between national agencies charged with control of HIV and TB infections.

Hesse et al. (2003) also conducted another study on HIV infection in TB patients at the KBTH. Among 422 patients recruited from the chest clinic, HIV seroprevalence rate was 16.8 % at the end of the study which spanned two years. There was no significant difference between the seroprevalence rate of the males and females but the rate was statistically significant in the newly diagnosed (24.4 %) and old patients (9.7 %) on treatment, $p<0.001$. Case fatality rate amongst seropositive (24.6 %) and seronegative (20.7%) TB patients was also significant, $p=0.008$.

At the Korle Bu Teaching Hospital in Accra, 30% of HIV patients present with TB, and TB accounts for 40-50% of HIV deaths in 2004 (Ghana's **TB/HIV Technical Policy Guidelines 2007).** Spectrum estimates in Ghana indicate that the number of new TB cases have risen by 37% because of the HIV epidemic. This is strengthened by the fact that Ghana Health Service data indicate that about 60% of the reported 11,500 new TB cases in 2003 were amongst persons aged 15-49yrs of age, the same age group that constitute 90% of reported AIDS cases (Ghana's **TB/HIV Technical Policy Guidelines 2007).** Due to these findings both the National AIDS Control Programme and the National Tuberculosis Programme recognized the need to forge closer and formal collaboration between their respective programs to ensure that patients with co-infection receive comprehensive TB/HIV services in a coordinated manner.

The WHO in 2004 recommended TB/HIV collaborative activities that need to be covered for TB patients in order to reduce the burden of HIV/AIDS, and those needed for HIV/AIDS patients in order to reduce the burden of TB. Some countries such as Rwanda, Malawi, and Ethiopia have already implemented the recommended TB/HIV collaboration with a lot of success.

In keeping with WHO recommendations, Ghana has developed a technical policy and guidelines for the implementation of TB/HIV collaborative activities.

The overall goals of TB/HIV policy are threefold:

1. To strengthen the health system to respond to the TB/HIV dual epidemic by establishing coordinating bodies at all levels through joint NTP-NACP planning ,supervision, monitoring and evaluation of activities.

2. To decrease the burden of TB in people living with HIV through early diagnosis and treatment of HIV-associated TB and prevention of TB infection in people living with HIV by active contact tracing and infection control in healthcare facilities and prisons.

3. To decrease the burden of HIV in TB patients by providing HIV testing and counselling for all TB patients, introducing HIV prevention methods, introducing co-trimoxazole preventive therapy, ensuring HIV/AIDS care and support and introducing antiretroviral therapy for all TB patients who have HIV.

The key activities to be implemented at the service delivery points are given in the table below.

Table 1. TB/HIV collaborative activities in Ghana grouped by Policy goals

Policy goal 1. To strengthen the health system to respond to the TB/HIV dual epidemic

- Coordination of TB/HIV activities at all levels.
- Community involvement in the management of TB and HIV patients.
- Surveillance HIV in TB patients.

Policy goal 2. To decrease the burden of TB in people living with HIV

- Active contact tracing for TB in contacts of PLWHIV
- TB infection control in health care facilities and prisons
- Intensified TB case detection in PLWHIV
- Prevention of TB disease in PLWHIV. TB preventive therapy

Policy goal 3. To decrease the burden of HIV in TB patients

- Provision of HIV counselling and testing to all TB patients.
- Promotion of Safer sex practices and condoms to all TB patients.
- STI screening and treatment at DOTS centres.
- Prevention and treatment of OIs in TB-Infected PLWHIV.
- Antiretroviral treatment for TB/HIV patients during TB treatment.

Measurable indicators for the joint activities are given in the table below:

INDICATORS FOR TB/HIV COLLABORATIVE ACTIVITIES IN GHANA

Decreasing Burden of HIV in TB patients	Decreasing Burden of TB in HIV patients
Number of (and%) of TB patients receiving counselling and Testing	Number of (and%) of TB cases found by screening patients receiving HIV TREATMENT/ care services
Number of (and%) of registered TB patients at collaborating sites who are tested and are HIV positive	Number of (and %) of TB patients receiving HIV TREATMENT/ care services who were screened for TB symptoms.
Number and proportion of TB/HIV patients receiving CPT during TB treatment.	Number of cumulative healthcare and or congregate settings implementing TB infection control policy.
Number and proportion of TB/HIV patients receiving ART during or at the end of treatment TB.	
Number of TB/HIV patients referred to HIV care and support services during TB treatment	
TB treatment success rate	

The implementation started in a few districts with the aim of scaling up to cover all the districts by 2015. Manya Krobo District was one of the districts to start the implementation.

1.2 Problem Statement

Worldwide, 11.4 million adults (15 - 49 years) are co-infected with HIV and Mycobacterium tuberculosis: sub-Saharan Africa is worst affected (70% of global total) [**Corbett et al, 2003]**Spectrum (modelling) estimates in Ghana indicate that the number of new TB cases have risen by 37% because of the HIV epidemic. (Ghana's **TB/HIV Technical Policy Guidelines 2007).** At the Korle Bu Teaching Hospital in Accra, 30% of HIV patients present with TB, and TB accounts for 40-50% of HIV deaths in 2004 **(Adjei et al. 2005).** Manya Krobo is the district with the highest HIV prevalence in Ghana - 8.9% **(HIV Sentinel Survey Report, 2007)**. In 2005 as much as 49.1% of TB patients receiving care were HIV positive **(Manya Krobo District Annual Report 2005).** HIV/AIDS was the number one cause of death in 2007 **(Manya Krobo District Annual Report 2007).**

In recognition of this, Manya Krobo was one of the first districts, to start the implementation of TB/HIV collaborative activities in 2006. However, there has not been any assessment of the TB/HIV collaborative activities since the implementation of the activities started in 2006. If the outcomes of the TB/HIV collaborative activities is not achieved, morbidity and mortality due to TB and HIV and related socio-economic burden will continue to increase.

The purpose of this study is to provide information to strengthen TB/HIV collaborative activities to achieve the desired results.

1.3 JUSTIFICATION

Manya Krobo District is one of the first districts to start the implementation of TB/HIV collaborative activities. However, to date, there has not been any evaluation by the district to assess the outputs of the planned activities and the outcomes of the interventions. Hence this study is a direct response to the need for evaluation. This study will also inform the programme on the potential problems to be considered and the best practices to be established, when scaling up to cover the remaining districts.

1.4 GENERAL OBJECTIVE

To assess the performance of the TB/HIV collaborative activities in the Manya Krobo District.

1.5 SPECIFIC OBJECTIVES

- To assess the level of implementation of the planned TB/HIV collaborative activities in the district.
- To determine the proportion of TB patients receiving HIV counselling and testing.
- To determine the proportion of TB/HIV patients receiving CPT during TB treatment.
- To determine the proportion of TB/HIV patients receiving ART during or at the end of treatment TB.
- To determine TB treatment success rate among TB/HIV patients.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 TB/HIV Collaboration.

The TB/HIV collaboration was born out of the escalating tuberculosis case rates over the past decade in many countries in sub-Saharan Africa and in parts of SE Asia (e.g. northern Thailand) which is largely attributable to the HIV epidemic (**WHO, 2002**). Since the mid-1980s, many African countries including those with well-organized TB control programmes had their annual tuberculosis case notification rates rising up to about four times their known rates with some of them like Botswana and Malawi reaching peaks of more than 400 cases/100,000 population (**Harries *et al.* 1996; Kenyon *et al*. 1999; WHO, 2001**). It is estimated that one-third of the 40 million people living with HIV and AIDS worldwide are co-infected with TB. People with HIV are up to 50 times more likely to develop TB in a given year than HIV-negative people (**WHO 2004, 2006**). HIV is the most powerful known risk factor for reactivation of latent tuberculosis infection to active disease (**Rieder et al.1989)**. Each disease contributes to the mortality and morbidity of the other. (**Tsiouris et al. 2007).** Increasing tuberculosis cases among PLWHA pose an increased risk of tuberculosis transmission to the general community whether they are HIV infected or not HIV-infected (**WHO 2002**).

In 1999 the WHO declared TB and HIV/AIDS as an emergency. This led to the formation of the Stop TB partnership. Later in 2000 the TB/HIV Working Group of the Stop TB Partnership was formed and it initiated a more collaborative approach to the prevention and care of HIV-related TB, which builds on existing DOTS programmes and comprehensive HIV/AIDS prevention and care. (**Stop TB Working Group 2005).**

Although there are increasing numbers of patients who are co-infected with TB and HIV, current TB and HIV remains largely separate with varying levels of interaction and communication. This often extends through the entire health system and results in care of co-infected patients that is fragmented, uncoordinated and unsuccessful. It is therefore essential, in areas with high HIV prevalence, or the national TB and HIV programmes to collaborate.

The objectives in the first Global Plan to Stop TB 2001-2005 were to:

- coordinate activities of prominent partners (both individuals and institutions) with recognised experience in controlling HIV/AIDS;
- develop a technical framework to guide country strategies to better control TB among HIV infected people;
- integrate the new technical framework into the DOTS strategy;
- Form partnerships and promote collaboration between TB and HIV/AIDS programmes; and
- Advocate for increased resources to tackle TB as a leading cause of illness and death among HIV infected people.

The Working Group has since published an essential set of core guidance documents to assist countries in implementing and monitoring collaborative TB/HIV activities. Together, these documents provide a clear technical framework, based on the best available evidence, for reducing the impact of HIV related TB through collaboration between TB and HIV/AIDS programmes and their partners.

One of these documents 'Interim Policy on Collaborative TB/HIV Activities clearly defines the activities that should be undertaken in the collaboration under three objectives as expanded in Table 2 (**WHO 2002; Stop TB Department and Department Of HIV/AIDS 2004; Stop TB Working Group 2005**). These objectives are

- To establish the mechanisms for collaboration between TB and HIV/AIDS programmes;
- To reduce the burden of TB in people living with HIV/AIDS; and
- To reduce the burden of HIV in TB patients

Table2.1WHO Recommended TB/HIV collaborative activities

A. Establish the mechanisms for collaboration
A.1 Set up a coordinating body for TB/HIV activities effective at all levels A.2 Conduct surveillance of HIV prevalence among tuberculosis patients A.3 Carry out joint TB/HIV planning A.4 Conduct monitoring and evaluation
B. Decrease the burden of tuberculosis in people living with HIV/AIDS
B.1 Establish intensified tuberculosis case-finding B.2 Introduce Isoniazid preventive therapy B.3 Ensure tuberculosis infection control in health care and congregate settings
C. Decrease the burden of HIV in tuberculosis patients
C.1 Provide HIV testing and counselling C.2 Introduce HIV prevention methods C.3 Introduce co-trimoxazole preventive therapy C.4 Ensure HIV/AIDS care and support C.5 Introduce antiretroviral therapy

Stop TB Department and Department Of HIV/AIDS 2004. Interim Policy on Collaborative TB/HIV Activities. World Health Organization Geneva, Switzerland. Available at http:// www.who.int/en/publications

Collaborative TB/HIV activities are implemented or planned in every WHO region with technical assistance from WG partners. The WHO 2006 report on global TB control notes that 32 of 41 countries with a high burden of HIV-positive TB cases have reported on their TB/HIV collaborative activities for the last three years. In 2004, 23 countries had appointed a TB/HIV focal person within their national TB programme, 17 had a formal system for referring patients from HIV to TB services, 20 had a policy to carry out intensified TB case-finding among people with HIV, 18 had a policy to provide HIV testing and counselling for all TB patients, 20 had a policy to provide co-trimoxazole preventive therapy to HIV-positive TB patients and 21 had a policy to provide antiretroviral therapy to HIV-positive TB patients.(**WHO 2006**)

In Ghana the need for collaboration between the two control programmes, the NACP and NTP has been recognized and accepted. This national approach is consistent with current WHO recommendations on the need for collaboration in addressing TB/HIV. In 2005 a National Working Group was established. In 2007 the Working Group developed a technical policy and guidelines for the implementation of TB/HIV collaboration activities. The overall goals of the policy are threefold:

- To strengthen the health system to respond to the TB/HIV dual epidemic,
- To decrease the burden of TB in people living with HIV/AIDS; and
- To decrease the burden of HIV in TB patients.

The policy provides guidance for the NACP and NTP to carry out as agreed-upon a set of collaborative TB/HIV activities which are to be pursued jointly and in cooperation with their

partners **(Implementation of TB/HIV Collaborative Activities in Ghana Technical Policy and Guidelines 2007)**. The key activities to be implemented at the service delivery points are;

- Provision of HIV counselling and testing to all TB patients.
- Promotion of Safer sex practices and condoms to all TB patients.
- STI screening and treatment at DOTS centres.
- Surveillance HIV in TB patients.
- Active contact tracing for TB in contacts of PLWHIV
- TB infection control in health care facilities and prisons
- Prevention and treatment of OIs in TB-Infected PLWHIV.
- Intensified TB case detection in PLWHIV
- Antiretroviral treatment for TB/HIV patients during TB treatment.
- Community involvement in the management of TB and HIV patients.
- Prevention of TB disease in PLWHIV. TB preventive therapy.
- Coordination of TB/HIV activities at all levels.

2.2 Performance of TB/HIV Collaborative Activities

In 2003, among the 199 countries that completed the WHO data collection form, 49% have a national policy of offering HIV testing to TB patients and 46 countries (23%) routinely assessed HIV positive TB patients for their eligibility for ART. (**Stop TB Partnership, 2007**) However, only 3% of the 4.4 million notified TB cases were reported to have been tested for HIV and only 1349 TB patients were reported to have started ART in 2003. This increased to nearly 10,000 in 2004 and 25000 by 2005. The number of countries that reported routine offer of HIV testing to

TB patients increased from 7 in 2003 to 92 in 2005. (**Stop TB Partnership, 2007**) This shows that most countries have only recently begun implementing collaborative TB/HIV activities. There has been rapid exceptional progress in some countries. For example in Kenya, in the first quarter of 2006, 50 % of TB patients were tested for HIV, 30% of the HIV positive TB patients were put on ART and 85% on co-trimoxazole preventive treatment. (**TB/HIV Working Group, 2007**). Likewise 77% of TB patients were tested for HIV in Rwanda during the second quarter of 2006 and a third of the HIV positives were put on ART. However, despite these rapid recent progresses the overall coverage of implementation of collaborative TB/HIV activities is unacceptably low. Globally only 14% of the estimated HIV positive TB patients were identified by HIV testing in 2005. This figure is 13% in the Africa region despite carrying 80% of the estimated burden of HIV related TB. On the other hand the American region detected more than two third of the estimated HIV positive TB cases in 2005. Once the HIV testing is done and cases are identified, the provision of CPT and ART is very high in the Africa Region. For example in 2005 in those African countries that provided report, between 82-92% of HIV positive TB patients were put on CPT and a third on ART. (**Stop TB Partnership, 2007)**

The coverage of those activities that need to be carried out by the HIV side such as screening of HIV positives for TB and provision of Isoniazid Preventive Therapy (IPT) are very low. For example in 2005 only 0.4% of people living with HIV were screened for TB and only about 25,000 were started on IPT. This calls for an urgent attention as TB is now the commonest presenting illness among People living with HIV (PLHIV) who are on ART. (**TB/HIV Working Group, 2007)**

The current progress of the implementation of collaborative TB/HIV activities is far short of with what has been laid out in the Global Plan to Stop TB (2006-2015). The Global Plan proposed that 1.6 million TB patients would be tested for HIV in 2006 and 220,000 should be started on ART. However, in 2005 the coverage was only 14% and 11% of what has been planned for 2006 respectively. Likewise, the number of PLHIV screened for TB in 2005 was only 1.7% of the 11 million targeted for 2006 and the number started on IPT in 2005 was 2.2% of the 1.2 million targeted for 2006 **(Stop TB Partnership , 2007)**

2.3 CHALLENGES TO THE IMPLEMENTATION OF TB/HIV COLLABORATIVE ACTIVITIES.

The implementation of TB/HIV collaborative activities is fraught with many challenges. Among these challenges are:

• **Limited HIV testing and counselling services:** HIV testing is a critical gateway to quality care for HIV infected TB patients. The uptake of HIV testing among TB patients is quite high especially when rapid testing is used and same day results are obtained from the same health worker. Expanding HIV testing facilities and allowing front line TB clinicians and nurses to test helped to achieve multi-fold increase in the number of TB patients tested for HIV (**Stop TB Partnership, 2007**). However, despite encouraging recent trends, the overall coverage of HIV testing and counselling in many countries with the burden of HIV related TB is low. (**Stop TB Partnership, 2007**) Ineffective and inconsistent supply of HIV test kits, drugs and other important commodities are also impediments for accelerated implementation. (**Stop TB Partnership, 2007**)

• **Shortage of trained manpower:** The lack of sufficient trained staff including in quantity, competence and distribution is consistently cited as the main constraint facing both HIV and TB control. This problem is of serious magnitude in those countries that bear the brunt of the HIV related TB.(**Mao et al 2007, Stop TB Partnership 2007, Gasana et al 2007).** This is a cross cutting health system problem that requires effective and collective response.

• **Lack of collaboration and coordination:** TB control services are geared towards controlling the transmission of tuberculosis largely with simple and standardized public health-oriented technical procedures building on sound evidence. HIV/ AIDS services, on the other hand, are largely individual patient-oriented and expanding fast building upon an evolving evidence base. Such conceptual, application and cultural differences between the two control programs and communities leads to failure to recognize the importance and relevance of TB to HIV care, prevention and treatment and vice versa. This in turn leads to lack of collaboration and coordination between the two communities at all levels and lack and difficulty of integration of TB and HIV services at service delivery point.(**Stop TB Partnership 2007, Vandebriel et al 2007**). ART services are centralized while TB services are highly decentralized to the periphery and managed by low cadre of health workers in many countries. (**TB/HIV Working Group 2007**).

Lack of conducive national policy environment: Creating conducive policy environment with the development of appropriate policy and operational guidelines, training manuals and protocols in line to international guidelines has been crucial in those progress in implementation. Although there is increasing recognition of the problem among many national authorities, there is no yet joint ownership in many countries. For example concerns about INH prophylaxis giving rise to

drug resistance, by key decision makers and service providers undermines its value in improving the quality of living of PLHIV. (**Stop TB Partnership 2007, Vandebriel et al 2007)**

• **Weak diagnostic capacity and technology vacuum**: TB diagnosis among PLHIV is characterized with difficulty due to both lack of new technologies and poor utilization of existing tools. The Working Group has recently been instrumental in changing the global policy environment to improve the diagnosis of TB and promote the use of existing tools to improve the diagnosis of TB among PLHIV. However, this needs massive investment for both expansion of the infrastructure and training for laboratory strengthening. Laboratory services are in general the weakest link with poor quality assurance system, insufficient human resources and centralized culture facilities and neglected in many countries with the TB/HIV burden. (**Stop TB Partnership, 2007**). In Cambodia the provision of IPT is limited by limited diagnostic capacities, including chest radiograph interpretation. **(Mao et al 2007)**

• **Weak or non-existent infection control measures:** TB infection control is one key but neglected collaborative TB/HIV activity. The emergence of XDR-TB and the associated high mortality rate particularly among HIV infected patients brought the issue of infection control in health care settings high on the agenda. The newly established Infection Control sub-Group is now incorporated into the TB/HIV Working Group, which is currently recruiting members and drafting a terms of reference, which will be circulated for a wider consultation. Stepping up the necessary efforts to carry out this important but neglected area of work is a huge challenge for the Working Group. (**Stop TB Partnership, 2007**).

• **Weak monitoring and evaluation:** Monitoring and evaluation of collaborative TB/HIV activities in general are weak, which may also contribute to low coverage due to poor documentation. It is reported that in some countries, activities are happening, but there is no system to capture it and inform the programmes in ways that will improve performance. Now the internationally recommended TB recording and reporting formats are revised including HIV variables. Those countries that used these revised formats improved documentation of the implementation of their activities. However, these formats are not implemented widely by TB control programmes and TB variables are not included in HIV registers of many of the countries. (**Stop TB Partnership, 2007**). Lack of training on recording and reporting on TB/HIV additionally affected accuracy and completeness of data.(**Egaddu et al 2008**). Insufficient information sharing with the HIV programme and partner organizations on experiences, developments and best practices on monitoring and evaluation further compromised quality of information. (**Egaddu et al 2008**).

2.4 Factors That Contributed To Success In The Implementation Of TB/HIV Collaborative Activities.

Experiences from Malawi, Kenya and Rwanda has identified the following factors key for successful implementation of TB/HIV collaborative activities

1.**Setting national targets for collaborative TB/HIV activities** facilitated implementation in Kenya, where between 50-67% of TB patients were tested for HIV, and, as a result, 84-88% and 25-29% of HIV infected TB patients had access to co-trimoxazole and ART, respectively, during the four quarters of 2006. (**Stop TB Working Group, 2007**)

Similarly, setting national targets assisted the accelerated implementation of collaborative activities in Rwanda and Malawi. It also helps to mobilise political commitment from the TB and HIV control programs. (**Stop TB Working Group, 2007**)

2. Creating conducive policy environment with the development of appropriate policy and operational guidelines, training manuals and protocols in line to international guidelines is also key. (**Stop TB Working Group, 2007**)

3. Stakeholders engagement through effective HIV/TB coordinating bodies and recruitment of TB/HIV focal persons at all levels was useful to coordinate the national response and accelerate the implementation.(**Vandebriel et al 2007**)

4. Expanding HIV testing facilities and allowing front line TB clinicians and nurses to test not only TB patients but those presenting with signs and symptoms of TB ("TB suspects") helped to achieve a 15-fold increase in the number of TB patients tested for HIV between 2004 and 2006 in Kenya. Similarly nationwide availability of HIV testing was the key for success in Rwanda and Malawi. (**Stop TB Working Group, 2007**)

5. Continuous TB/HIV training and supportive supervision of health workers at decentralised district and facility level contributed to the successes documented in Kenya and Rwanda. (**Stop TB Working Group, 2007, Vandebriel et al 2007**)

6. Implementing revised recording and reporting formats on TB/HIV collaborative activities has contributed to the documentation of the progress of implementation in all the countries. The importance of including TB components in HIV registers and HIV components in TB registers was particularly emphasized in line to international guidelines. (**Stop TB Working Group, 2007**)

7. Effective and constant supply of HIV test kits, drugs and other important commodities was also crucial for accelerated implementation. (**TB/HIV Working Group ,2007**)

CHAPTER THREE

3.0 METHODS

3.1 Study Area

Manya Krobo district is one of the 17 local government administrative districts of the Eastern Region of Ghana. It lies in the south-eastern part of the Eastern Region. It is bounded on the northeast by Kwahu North and northwest Fanteakwa districts; on the east by Asuogyaman district on the west by Fanteakwa and Yilo Krobo districts and on the south by North Tongu Districts. The Volta, the biggest manmade lake in the world is found in the western part of the boundary. The district covers a total surface area of 1476 sqk.

Administratively there are six sub-districts namely, Asesewa , Sekesua, Kpong/Akuse Otrokper, Anyaboni and the district capital Odumase. The major occupations of the district are farming, fishing, trading and artisan work.

The Manya Krobo District has an estimated population of 172,454 projected from the 2000 population census. The district has the highest HIV prevalence in the country. The current HIV prevalence is 8.9 **(HIV Sentinel Survey Report 2007).** In 2006, 41.7% of newly diagnosed TB patients were co-infected with HIV **(Manya Krobo District Annual Report 2006).** HIV/AIDS was the number one cause of death in 2007 **(Manya Krobo District Annual Report 2007).**

The district has 21 health facilities made up 4 of hospitals, 6 health centres, 9 clinics and 3 CHPS compounds. Each sub-district has at least a health centre, which provides mainly preventive

services. They are the first point of contact of the community with the health delivery system. The four hospitals serve as the first referral points. Among the 21 health facilities are 2 HAART centres and 11 DOTS centres (see Appendix I and II).

3.2 Study Design

An explorative study using quantitative and qualitative data collection methods.

3.3 Study Population

All 11 DOTS centers and the only 2 HAART centers in the Manya Krobo District were included in the review. Patients with TB/HIV co-infection, Senior Managers of the two programmes at regional and district levels, and other health care managers were also part of study population.

3.4 Study Variables

The main variables that were studied during this study were in line with the recommended measurable indicators for TB/HIV collaborative activities as stated in the Ghana's TB/HIV collaborative activities technical policy guidelines. They are;

- TB patients receiving HIV counselling and testing.
- TB patients who are tested and are HIV positive
- HIV/TB patients who receive CPT during TB treatment.
- HIV/TB patients on ART.
- TB treatment success rate among TB/HIV patients.

3.5 Data Collection Techniques/Methods and Tools

A standard checklist was developed to collect information on the status of TB/HIV collaboration activities. This was based on the logical framework of the pre-determined activities in the TB/HIV collaboration policy and Technical guidelines. The survey methods employed to get responses to the checklist were observation, interviews, and records review.

The second aspect of the study involved a review of TB facility registers and client cards. An abstraction form was developed, which had indicator for all the variables listed above. Quantitative data on all registered TB patients from July 2006 to June 2008 was extracted using the abstraction form.

An in-depth interview guide was used by the researcher to interview the district and regional TB and HIV programme coordinators.

3.6 Quality Control

- 10% of the information collected with the abstraction form was randomly sampled and rechecked.
- Data were double-entered and checked for range and consistencies.

3.7 Analysis

The results of the checklist were compiled to describe the status of implementation of the TB/HIV collaborative activities. It also analyzed key issues and challenges during the implementation of the collaborative activities. The main themes of the in-depth interview were identified and assessed to explain the gaps in the review of the activities

Quantitative data was entered into Epi Info for Windows (Version 3.3.2). Data were double-entered and checked for range and consistencies. Data was transported to STATA 9 for the analysis. Age was categorized to describe the composition of sub-group assessed in the review. Proportions for each category of demographic characteristics were presented first to provide information about general characteristics of people with co-infection. Five out of nine indicators pre-defined for the TB/HIV collaboration were assessed in this review. The indicators were presented in both absolute numbers and proportions for the periods in which data was available for a particular indicator. The levels of the indicators were presented in bar charts to give a pictorial view of the performance of the Manya Krobo District. Three month intervals were used to expose subtle trends.

3.8 Ethical Consideration

Ethical clearance was obtained from the Ghana Health Service Ethical Review Committee on Research involving Human Subjects (ERCRIHS).

Written permission to carry out the study was obtained from the Regional Director of Health Service, the District Chief Executive, the District Director of Health Services and the Medical Superintendents in Charge of the hospitals in the district.
Written informed consent was obtained from all interviewed participants.

3.9 limitations

Incomplete documentation, including missing client card was major limitation to the review of medical records. This partly accounted for the unknown levels of some of the indicators in some of the periods.

Limited time and financial constraints were a major challenge to the implementation of this study and as such it was not be possible to broaden the scope of this

CHAPTER FOUR

4.0 RESULTS

4.1 Provision of HIV counselling and testing to all TB patients

Out of the 21 health facilities 52.4% (11/21) had DOTS centres. All the 11 DOTS centres provide HIV counselling to TB patients, however only 36.4% (4/11) of them provide testing as well. Only 10% (2/21) of the DOTS had been trained in HIV testing. All the DOTS centre had not been refurbished to improve privacy. 54.5% (6/11) of the DOTS centres did not have designated areas for DOTS. (Table 4.1)

Table 4.1: Provision of HIV counselling and testing to all TB patients by category of health facility

			Number of DOTS centres			
Category of Health Facility	**No of facility in district**	**No with DOT centres/corners**	**providing TB/HIV collaborative services**	**providing counselling and testing**	**providing only HIV counselling**	**refurbished to improve privacy**
Hospital	4	4(100%)	4 (100%)	4 (100%)	4 (100%)	0
Health centres	5	4 (80%)	4 (100%)	0	4 (100%)	0
Clinic	9	0	0	0	0	0
CHPS	3	3 (100)	3 (100%)	0	3 (100%)	0
Total	**21**	**11 (52.4%)**	**11 (100%)**	**4 (36.4%)**	**11 (100%)**	**0**

4.2 Promotion of safer sex practices and condoms to TB patients

All the DOTS centres have been provided with IEC materials on safer sex practices, however only 27.3%(3/11) had dummy penises and condoms for demonstration. All the DOTS had not been supplied with condoms for distribution. All the DOTS centre had been trained in promotion of safer sex. (Table 4.2)

Table 4.2: Promotion of safer sex practices and condoms to TB patients by category of health facility

Category of Health Facility	No of facility in district	No with DOT centres/corners	Number of DOTS centres promoting safer sex practices	provided with IE&C materials promoting safer sex practices	supplied with condom and dummy penises for demonstration	supplied with condom for distribution
Hospital	4	4 (100%)	3 (75%)	4 (100%)	3 (75%)	0
Health centres	5	4 (80%)	0	4 (100%)	0	0
Clinic	9	0	0	0	0	0
CHPS	3	3 (100%)	0	3 (100%)	0	0
Total	**21**	**11 (52.4%)**	**3 (27.3%)**	**11 (100%)**	**3 (27.3%)**	0

4.3 STI screening and treatment at DOTS centres

All the DOTS centre had been provided with IEC materials on STI but only 54.5%(6/11) had guidelines for the syndromic management of STIs. All the DOTS centre staff have not had training in syndromic management of STI's. STI screening and treatment services are not being offered by any of the DOTS centres. (Table 4.3)

Table 4.3: STI screening and treatment at DOTS centres by category of health facility

	Number of DOTS centres

Category of Health Facility	No of facility in district	No with DOT centres/corners	Who provide STI screening and treat ment services	provided with IE&C materials on STI	with guidelines on syndromic management of STI
Hospital	4	4 (100)	0	4 (100%)	2(50%)
Health centres	5	4 (80%)	0	4 (100%)	3(75%)
Clinic	9	0	0	0	
CHPS	3	3 (100%)	0	3 (100%)	1(33.3%)
Total	**21**	**11 (52.4%)**	**0**	**11 (100%)**	**6 (54.5%)**

4.4 Surveillance of HIV prevalence in TB patients

All DOT centres had received TB registers modified to capture HIV status. All the DOTS centres had been provided with modified TB registers capturing HIV status. All the DOTS centres were also conducting routine surveillance of HIV prevalence in TB patients.(Table 4.4). 90.5% of DOTS centre staffs were reported to have been trained on HIV surveillance. (Table 4.13) However a review through their records revealed incomplete documentation of records.

Table 4.4: Surveillance of HIV prevalence in TB patients by category of health facility

		Number of DOTS centre		
Category of Health Facility	No of facility in district	No with DOT centres/corners	who conduct routine surveillance of HIV prevalence in TB patients	provided with modified TB registers capturing HIV status
Hospital	4	4(100%)	4 (100%)	4 (100%)
Health centres	5	4 (80%)	4 (100%)	4 (100%)
Clinic	9	0	0	0
CHPS	3	3 (100%)	3 (100%)	3 (100%)
Total	**21**	**11 (52.4%)**	**11 (100%)**	**11 (100%)**

4.5 Active contact tracing for TB in contacts of PLHIV

The review showed that community/treatment supporters had not been trained to conduct active contact tracing of TB in contacts of PLHIV. Active contact tracing is not being done

4.6 TB infection control in health care facilities

Table 4.6 shows that 63.6%(7/11) of DOTS and 50%(2/4) of HAART centres had been provided with IE&C materials on infection control but none of them had been provided with infection control plan and guidelines. Also, there had not been any periodic surveillance for TB infection/TB disease among health care workers in DOTS and HAART centres.

Table 4.6: TB infection control in DOTS and HAART centres

Category of Health Facility	No of facility in district	No with DOT centres/corners	No with HAART centres	No of DOTS and HAART centres provided with infection control plan and guidelines	No of DOTS centres provided with IE&C on infection control	No of HAART centres provided with IE&C on infection control
Hospital	4	4	2 (50%)	0	2 (50%)	1 (50%)
Health centres	5	4	0	0	3 (75%)	0
Clinic	9	0	0	0	0	0
CHPS	3	3	0	0	2 (66.7%)	0
Total	**21**	**11**	**2 (10%)**	0	7 (63.6%)	**1 (50%)**

4.7 Prevention and treatment of OIs in TB-infected PLWHIV

The study revealed that none of the DOTS centres had been supplied with neither co-trimoxazole nor guidelines for the management of co-trmoxazole side effects (Table 4.7). Clients with co-infection were given prescription to go and buy. An interview with District Pharmacist revealed

The supply Co-trimoxazole to the district had not been regular.. However, all of the HAART and DOTS centres staff had been trained in co-trimoxazole prophylaxis therapy (Table 4.11, 4.12).

Table 4.7: Prevention and treatment of OIs in TB-infected PLWHIV by category of health facility.

Category of Health Facility	No of facility in district	No with DOT centres/corners	Number of DOTS centres implementing guidelines on management of co-trimoxazole side effect	Number of DOTS centres provided with co-trimoxazole
Hospital	4	4 (100%)	0	0
Health centres	5	4 (100%)	0	0
Clinic	9	0	0	0
CHPS	3	3(100%)	0	0
Total	**21**	**11(52.4%)**	**0**	0

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4.8 Intensified TB Case Detection in PLWHIV

The review showed that all the HAART and VCT centres had been provided with TB symptoms questionnaire as a tool to screen PLWHIV and all VCT clients for TB but this is not being done because staffs have not been trained on how to use this for screening. At initial visit to the HAART centre TB screening is done by clinical assessment as part of initiation into clinical care. However the HAART database does not capture this TB screening.(Table 4.8)

Table 4.8: Intensified TB case detection in PLWHIV

Category of Health Facility	No of facility in district	No of facilities with VCT centres	No with HAART centres	No of VCT centres provided with TB symptoms questionnaire	No of HAART centres provided with TB symptoms questionnaire	No of VCT centre conducting intensified TB case detection in PLWHIV	No of HAART centre conducting intensified TB case detection in PLWHIV
Hospital	4	4 (100%)	2 (50%)	4 (100%)	2 (100%)	0	2 (100%)*
Health centres	5	0	0	0	0	0	0
Clinic	9	0	0	0	0	0	0
CHPS	3	0	0	0	0	0	0
Total	**21**	**4(19%)**	**2 (10%)**	**0**	**0**	**0**	**2 (100%)***

**** Done only on the initial visit to HAART centre***

4.9 Antiretroviral treatment for TB/HIV patients during TB treatment

It was evident that almost all the DOT centres staff had been trained and re-trained in HAART/TB medication interaction. Patients with the dual infection are evaluated and enrolled into ART care as early as possible however co-infected patients identified in the TB clinic are not formally referred.

4.10 Community involvement in the management of TB and HIV patients

IEC materials have been distributed to community treatment supporters. The treatment supporters particularly prefer the one with Nelson Mandela. It is very helpful on issues of stigma associated with TB. People living with HIV support group had been trained in TB and HIV.

4.11 Coordination of TB/HIV at Regional, District and health facility levels

The review indicated that coordination at all levels is poor. There's no TB/HIV focal person at each level of implementation. There's no joint planning at all the levels. No District Coordinating committee has been set up. The district had not been provided with generic terms of reference for coordinating committees. There was no HIV Coordinator in the District. Supervision and monitoring of HIV programme activities is very weak. The DHMT is supposed to do it but this is not done. The Regional HIV coordinator communicates directly to the only 2 hospitals that offer clinical care and so most of the commodities supplied by the HIV programme circulates in only the hospital.

Table 4.11: Training in TB/HIV collaborative activities of DOTS centre staff.

No	**Training Activity**	**No of DOTS centre Staff**	**No trained**

1	Training of DOTS center staff on link between TB and HIV and the importance of routinely discussing HIV with all TB patients	21	21 (100%)
2	Refresher training for DOTS center Staff	21	21 (100%)
3	Training of DOTS Staff in HIV testing	21	2(10%)
4	Training of DOTS Staff in promotion of safer sex	21	21 (100%)
5	Training of DOTS Staff in syndromic management of STI	21	0
6	Training of DOTS Staff in HIV surveillance	21	19(90.5%)
7	Refresher training of DOTS centres Staff in HIV surveillance	21	19(90.5%)
8	Training of DOTS Staff in infection control	0	0
9	Training of DOTS Staff in CPT management and counselling	21	21 (100%)
10	Training of DOTS Staff about HAART interaction with TB medication	21	21 (100%)
11	Refresher Training of DOTS Staff about HAART interaction with TB medication	21	21 (100%)

Table 4.12 Training of HAART/VCT Staff in TB/HIV collaborative activities

Training Activity	No of HAART/VCT centre Staff	No trained
Training of both HAART Staff in TB infection control	0	0

Training of both HAART Staff in CPT management and counselling	5	5(100%)
Training of HAART Staff on the use of TB symptoms questionnaire	0	0
Training of VCT Staff on the use of TB symptoms questionnaire	0	0

4.13 The Demographic characteristics of TB/HIV patients.

About one-third of TB/HIV patients were aged between 30 to 39 years. 51.2%(159/310) of the TB/HIV patients were females. (Table 4.13)

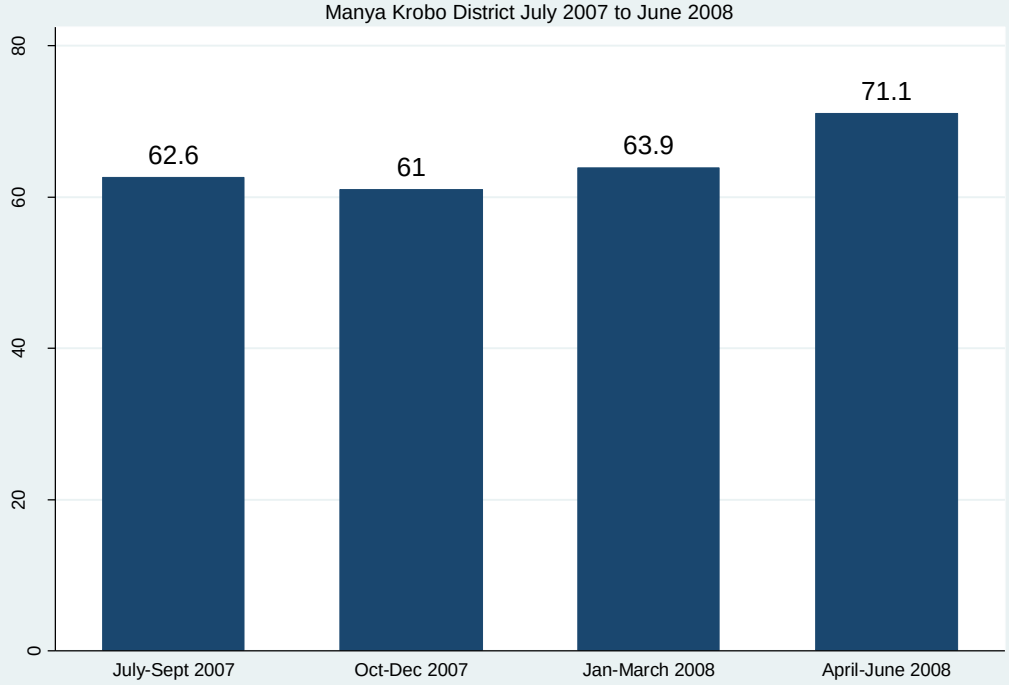
Table 4.13: Distribution of age of TB/HIV patients by sex, Manya Krobo District, July 2006 - June 2008

Age group (Years):	**Male**	**Female**	**Total**
1-9	13 (8.6%)	2 (1.3%)	15 (4.8%)
10-19	5 (3.3%)	3 (1.9%)	8 (2.6%)
20-29	12 (8.0%)	23 (14.5%)	35 (11.3%)
30-39	44 (29.1%)	61 (38.4%)	105 (33.9%)
40-49	44 (29.1%)	37 (23.3%)	81 (26.1%)
50-59	25 (16.6%)	19 (12%)	44 (14.2%)
60-69	4 (2.7%)	9 (5.7%)	13 (4.2%)
70+	4 (2.7%)	5 (3.1%)	9 (2.9%)
Total	**151 (47.6%)**	**159(51.2%)**	310 (100%)

4.14 Performance of TB/HIV collaborative activities, Manya Krobo District

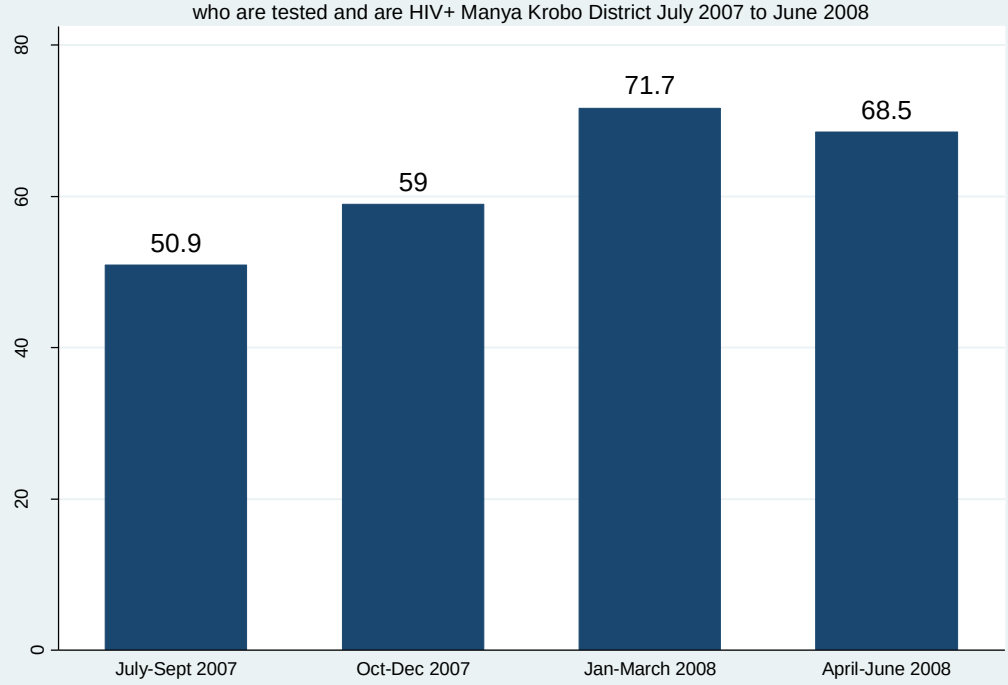
The proportion of registered TB patients who are tested and are HIV positive increased from 50. 9% (29/57) in the period July-Sept 2007 to 71.1%(38/53) in the period Jan-March . It then decreased to 68.5%(37/54) in the period April-June 2008. (Figure 4.1)

Figure 4.1: Trends in proportion of TB patients receiving HIV counselling and testing
Manya Krobo District July 2007 to June 2008



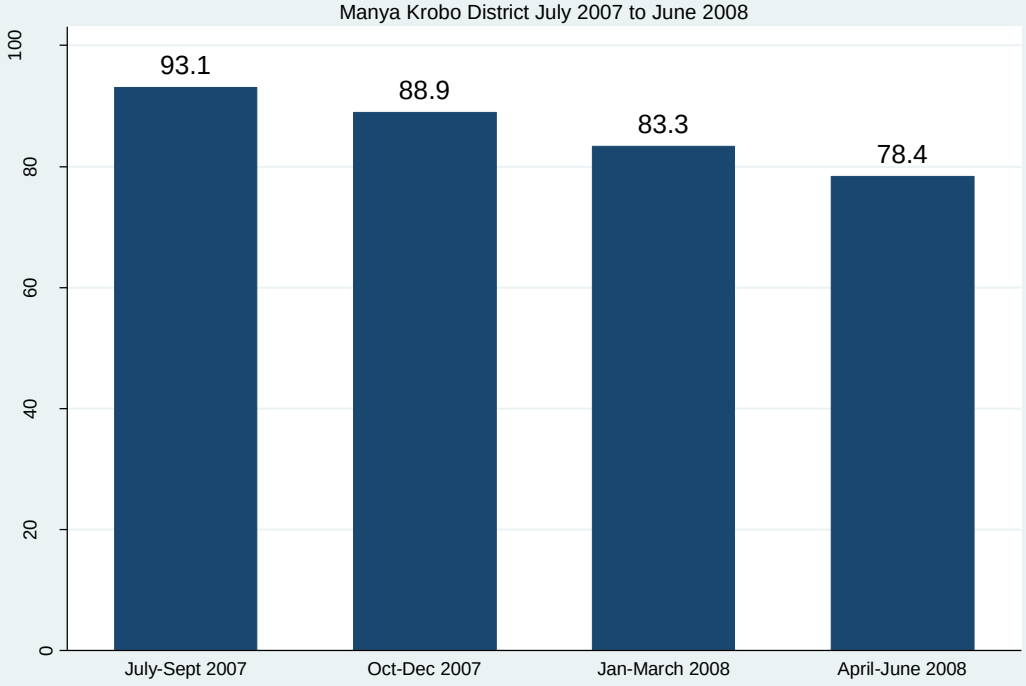
The proportion of TB patients receiving counselling and testing for HIV increased gradually from 62.6% (57/91) in the period July-September to 71.1%(54/76) in the period April-June. (Figure 4.2)

Figure 4.2: Trends in proportion of registered TB patients at collaborating sites who are tested and are HIV+ Manya Krobo District July 2007 to June 2008



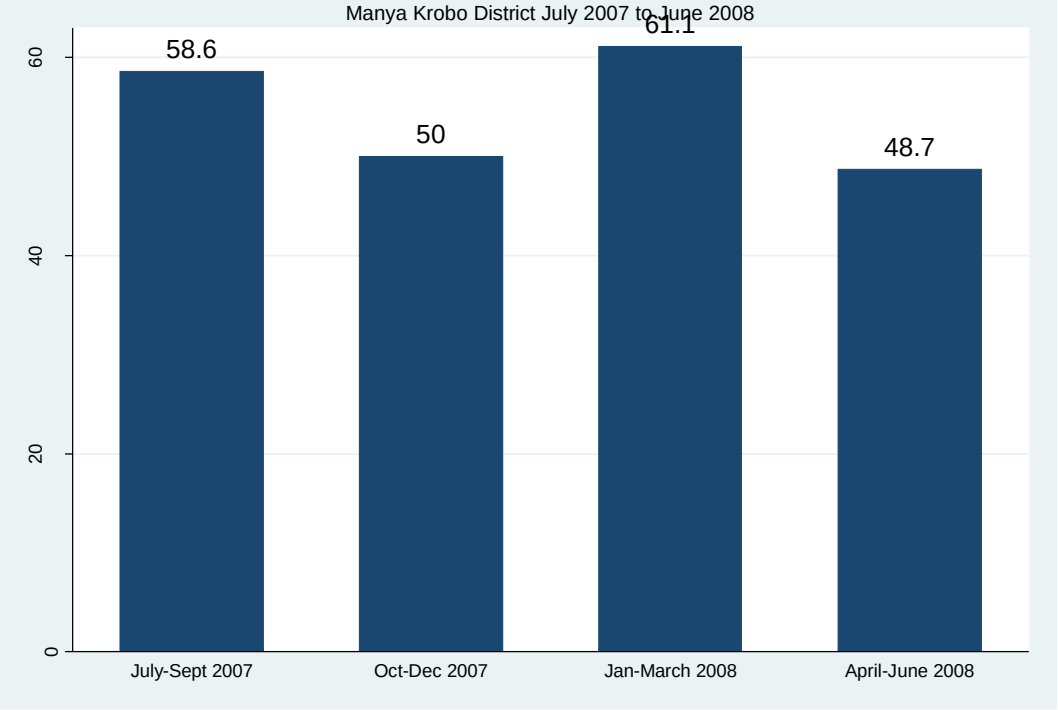
The proportion of TB/HIV patients who receive CPT prophylaxis during TB treatment decreased steadily from 93.1%(27/29) in the period July-Sept.2007 to 78.4%(29/37) in the period April-June2008.(Figure 4.3)

Figure 4.3: Trends in proportion of HIV+TB patients who receive CPT during TB treatment



The proportion of TB/HIV patients on HAART during or at the end of TB treatment decreased from 58.6% (17/29) in the period July-Sept to 50% (18/36) in the period Oct-Dec. 2007. From this period it increased to 61.1% (22/36) in the period Jan-March 2008 but decreased again to 48.7% (18/37) in the period April- June. (Figure 4.5)

Figure 4.5: Trends in proportion of HIV+TB patients on HAART during or at end of TB treatment

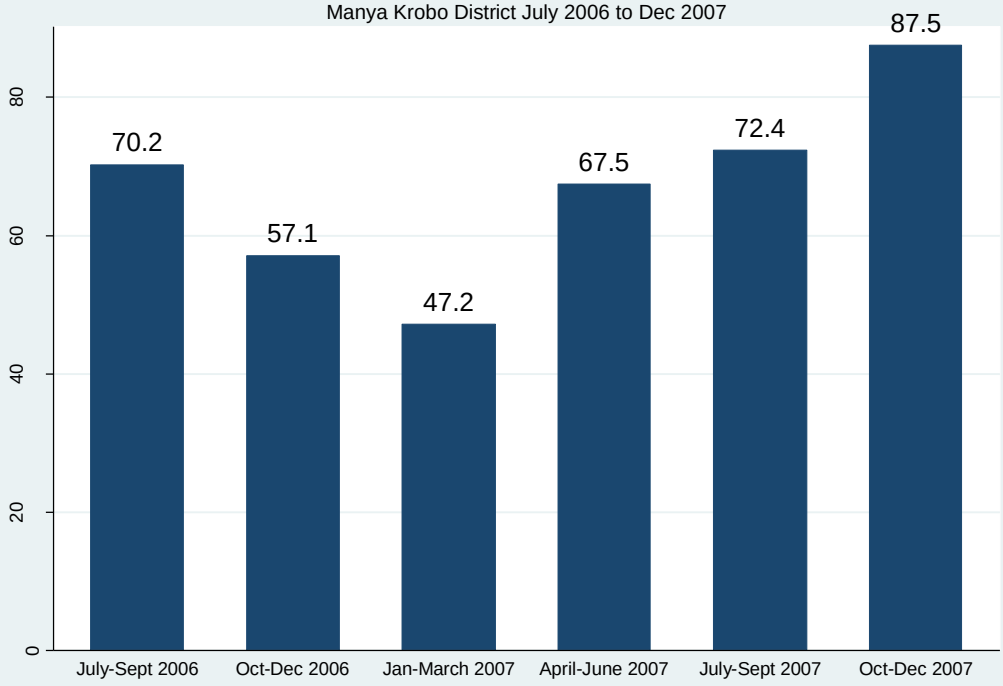


TB treatment success rate among TB/HIV patients is the proportion of registered TB/HIV patients who were cured or completed treatment after six months of treatment.

TB treatment success rate among TB/HIV patients decreased steadily from 70.2% (33/47) in the period July-Sept 2006 of 47.2% (17/36) in the period Jan- march 2007. It then gradually increased to 87.5% (28/32) in Oct-Dec 2007. This is shown in the figure below.

Figure 4.4: Trends in TB treatment success rate among TB/HIV patients

Manya Krobo District July 2006 to Dec 2007



CHAPTER FIVE

5.0 DISCUSSION

5.1 Strengthening the health system to respond to TB/HIV

Mechanism for collaboration is the cornerstone s for TB/HIV collaborative activities.

Having TB/HIV coordinating bodies operating at all levels so that all stakeholders from the HIV/AIDS and TB control programme can participate, ensures commitment and ownership.

Coordination of activities at all levels is virtually non- existent. There's no joint planning at any of the levels. This is not surprising, because a focal person who will ensure that coordinating committees are set up and organise meetings does not exist at all levels. And also generic reference for coordinating bodies has not been provided. Even though the Regional and District TB coordinators have been trained on TB/HIV collaborative Activities, the Regional HIV coordinator has not been trained. This and the fact that there's no HIV coordinator at the District level may explain why collaborative activities supposed to be implemented by the HIV programme was not done. The reporting format for TB programme has been changed to capture data on HIV related activity but one cannot say the same for HIV programme. This accounts for the lack of data on TB related activities as showed in the review. Supervision and monitoring of TB related activities by the HIV programme was generally weak in the district. Lack of coordination and collaboration has been documented by other countries as a major challenge to the implementation.(**Stop TB department, 2007**). For the implementation of TB/HIV collaborative activities to be successful, coordination is essential to develop joint strategic plans, mobilize resources, build capacity and implement and monitor activities. If implementation of the collaborative Activities is going to succeed, NTP and NACP should make collaboration in the district and regional a priority.

5.2 Decreasing the burden of TB in people living with HIV/AIDS

Early identification of TB suspects with signs and symptoms of TB followed by prompt referral for diagnosis and treatment increases chances of survival, improves quality of life and reduces transmission of TB. (**WHO,2004**) . Intensified case finding and treatment of HIV associated TB is to be achieved by the use of a simple symptom questionnaire. This activity is not being done, even though the tool has been produced and distributed to the HAART and VCT centres. This can be explained by the fact that the staffs have not been trained on how to use the tool. Also due to increasing numbers of PLWHIV the workload on the HAART centre staff is very high so they gladly put the screening tool aside. Patients are only tested for TB on their first visit to HAART centres, however this information is not captured by their database making it difficult for the it to be monitored. This finding is similar to a report by WHO in 2007 which indicated that in some countries activities are happening, but there is no system to capture it. One can never over emphasise the need for a system to capture data on ongoing activities. This required to inform the programme in ways that will improve performance.

The prevention of HIV-related TB depends on the ability to control TB as much as the control of HIV infection. A number of activities have been outlined for the prevention of exposure to infectious sources. These included "Active contact tracing for TB in contacts of PLWHIV" and "TB infection control in health care facilities and prisons". Active contact tracing for contacts of PLWHIV is not being done even though the questionnaire has been produced. This can be attributed to the fact that treatment supporters had not been trained on it. Also, only there TB

treatment supporters and as such if they are the ones going to do active contact tracing the issues on stigma needs to be considered. If HIV had treatment supporters this activity would have been easier to implement.

Infection control was generally very weak because infection control plan and guideline have not been produced and the fact that designated areas for DOTS was lacking. However, IE&C materials have been produced and distributed for patient education. The stop TB Department of the WHO has also identified weak and non–existent infection control measures a major challenge to the implementation of TB/HIV collaborative activities.

Evidence has shown that intensified case-finding and treatment of tuberculosis among HIV-infected persons interrupts disease transmission (**DeCock et al 1999**), reduces mortality, decreases risk of nosocomial tuberculosis transmission (**Burgess A et al**.). This activity is not being done because the staff have not been trained. The weak supervision and monitoring of the HIV programme at the district level has also contributed to the state of activities supposed to be implemented by the HIV programme.

Evidently, there's minimal effort to decrease the burden of TB in PLHIV and as such this goal is unlikely to be met. The weak link in the collaborative activities is the HIV programme. This is in conformity with what is happening globally.(**Stop TB Department,2007**) If decreasing the burden of TB is to be achieved, the NACP has to ensure Manya Krobo has A district coordinator to facilitate coordination of the HIV programme as well as the TB/HIV collaborative activities.

5.3 Decreasing the burden of HIV in TB Patients

Routine offering of counselling and testing is the gateway to decreasing the burden of HIV in TB patients. Identifying those TB patients with HIV infection can get them into HIV care and treatment sooner and improve their prospect of survival. The review showed that the proportion of TB patients receiving HIV counselling and testing increased from 62.16% in the period Jul-Sept 2007 to 71.1% in the period April of 2008. Clearly, there has been an increase and this is comparable with the coverage in Rwanda of 69%-75% (**Vandebriel et al 2007**), however it is not good enough. Routine offer of counselling and testing for TB patients started as far back as 2002. This can be explained by the fact that 63.6% of the centres offer only counselling without testing. When clients accept to do the test, the care givers simply ask them to go for testing in the nearest without a request form. Because testing has to be done elsewhere most of the time they do not go for the testing, often citing financial constraint as the excuse. Clients may also have a change of mind. Centres with testing facilities performed much better than those without testing facilities. This is in conformity with established evidence that, uptake HIV counselling and testing was done in TB centres than referrals. (**Van Rie A et al, CDC 2008**). Drawing on the performance of the centres with the capacity to test, if all centres could be provided with capacity to test a higher performance would be yielded. On the contrary St Martins hospital did not perform well. This can be attributed to the fact that he hospital has higher case load with only one trained staff who also helps out in the HAART centres clinic days because of increasing no of PLWHIIV. The care giver is therefore under heavy stress in terms quality and effective delivery.

Evidence from randomized controlled trails of CPT has shown to reduced mortality among HIV-positive smear positive TB patients (**Zachariah R. et al, 2001, Wiktor S Z et al,1999**). The Study showed a decline in the proportion of TB/HIV patients receiving CPT prophylaxis from 93.1% in the last half of 2007 to 78.4% in the first half of 2008. Even though the coverage is similar to that of other African countries, the trend is the reverse. (**Stop TB Working Group,2007**) This can be attributed to shortages in co- trimoxazole that occurred in the District. There should therefore be a constant regular supply of CPT.

Antiretroviral therapy improves the quality of life and greatly improves survival of people living with HIV/AIDS.(**Giarardi et al, 2000**). TB/HIV patients are one of the largest groups already in contact with the health service who are likely to benefit from ART, and efforts should be made to identify and treat those who are eligible. The TB/HIV collaborative programme seeks to train DOT centre staff about HAART and interactions with TB medication. It was also to conduct refresher courses on HAART interaction with TB Medications and strengthen referral links between DOTS and HAART centres if not fully integrated. It was evident that all the DOT centres staff had been trained on and had refresher course on HAART/TB medication interaction. Patients with the dual infection when they get to the HAART centre are evaluated and if they meet the criteria for ART, are enrolled as soon as possible. However the referral links between the 2 programmes is weak. From the study the proportion of TB/HIV patients receiving ART fluctuated between from 48.7% of 2007 to 61.1%. This may be due to the weak referral system between the 2 programmes. A strong referral link should be established through joint effort of both programmes to ensure PLWHIV identified by the TB programme are receiving adequate care.

The treatment success rate which is the outcome indicator, for the TB/HIV collaborative TB treatment success rate decreased from70.2% in the period July –Sept 2006 to 47.2% in the period Jan-march. Subsequently it increased again steadily to 85.7% in the period Oct-Dec 2007. Generally there was an increase in the treatment success rate and this can be attributed to the efforts by the TB programme compensating for the deficiencies in the HIV programme on the collaboration.

Evidently, much remains to be done by both programs to improve the implementation, monitoring and evaluation of collaborative TB-HIV activities and to optimize prevention, treatment and care for people infected with both TB and HIV.

CHAPTER SIX

6.0 CONCLUSIONS AND RECOMMNEDATIONS

6.1 Conclusions

The study suggests that there is a general increase in the performance of TB/HIV collaborative activities in the district, but at a slow pace. This is due to a combination of slow implementation of processes, limited infrastructure and human resource capacities, lack of necessary tools and systems for capturing activity data, weak monitoring and supervision and most importantly poor coordination of activities due to lack of TB/HIV focal persons.

Sustaining and improving TB/HIV collaborative activities will require commitment from both NTP and NACP, establishment of mechanism for collaboration, joint capacity building, provision of the needed logistics and strengthening of the monitoring and evaluation system at the regional and district levels.

6.2 Recommendations

6.2.1 Recommendations to National Level Stakeholders

- Generic terms of reference for coordinating committees, infection control plan and guideline and other tools for collaboration should be produce and distributed to the district. This will facilitate the implementation of TB/HIV collaborative activities.

- Establish a formal referral system between the HIV and TB programmes with the development of forms that will capture all the salient information of each patient like

HIV and TB status. This will improve surveillance activities and also strengthen the links between the two programmes to improve communication between them at all levels.

- The National AIDS Control Programme should revise their recording and reporting format to capture TB variables. This will help inform the programme on ways that will improve performance.

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6.2.2 Recommendations to Regional AIDS Control

- Mechanisms for constant supply of commodities from both programmes should be established to ensure efficient programme output and effective TB/HIV collaboration
- Distribution of commodities to the district should be made through the DHMT. This will ensure a fair distribution of commodities to cover all the centres.

6.2.3 Recommendations to District Health Management Team.

- A TB/HIV focal person should appointed in order to facilitate collaboration and coordination of activities.
- Intensive continuous training and supportive supervision of health workers of the 2 programmes on TB/HIV collaborative activities should be established. This will ensure effective implementation of TB/HIV collaborative activities.
- DOTS and HAART facilities in use should be quickly refurbished to improve infection control and privacy. Priority should be given to Akateng CHPS compound and the DOTS centre in St Martins Hospital.
- An HIV Coordinator should be appointed for the district. This will improve monitoring of HIV programme activities in the district.
- Research to determine the best ways to roll out active contact tracing is needed.

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Appendix 1

Characteristics of facilities used in the study according to the type of facility and the availability of DOTSW and HAART treatment centres

Name of Facility	Type of Facility	DOTS Centre	HAART Centre
Atua Hospital	Hospital	Yes	Yes
St. Martins Hospital	Hospital	Yes	Yes
Asesewaa Hospital	Hospital	Yes	Yes
Akuse Hospital	Hospital	Yes	No
Sekesua Health Centre	Health Centre	Yes	No
Kpong/Akuse Health Centre	Health Centre	Yes	No
Anyaboni Health Centre	Health Centre	Yes	No
Otrope Health Centre	Health Centre	Yes	No
Akateng Community Centre	CHPS Compound	Yes	No
Djamam Community Clinic	CHPS Compound	Yes	No

Appendix 2

A checklist for review the status of implementation of TB/HIV collaborative activities in the Manya Krobo District of the Eastern Region, 2008

NAME OF FACILITY

ACTIVITY	STATUS OF IMPLEMENTATION	REMARKS
a. Provision of HIV counselling and testing to all TB patients		
• Train DOTS centre staff on links between TB and HIV and importance of routinely discussing HIV with all TB patients.		
• Conduct refresher training for DOTS centre staff.		
• Establish CT services at DOTS centres. Where CT centre already exists, establish/strengthen links with nearest DOTS.		
• Refurbish DOTS centres to improve patient privacy.		
• Develop IEC strategy with clear messages addressing the TB/HIV link and promoting VCT.		
• Procure HIV test kits & other commodities, distribute to DOTS Centre.		
• Train health staff on HIV testing.		

- Conduct refresher training on HIV testing for laboratory staff NACP

ACTIVITY

b. Promotion of safer sex practices and condoms to TB patients

- Provide materials promoting safer sex practices and condom use for distribution at DOTS centre.

- Provide materials promoting safer sex practices and condom use for distribution at DOTS centre.

- Supply condoms for distribution to DOTS centres

- Refurbish DOTS centres to improve privacy as per activity (a.) above.

ACTIVITY

c. STI screening and treatment at DOTS centres

- Train DOTS centre staff on implementation of national guidelines for the syndromic management of STIs.

- Provide STI materials and guidelines to DOTS centres

ACTIVITY	STATUS OF IMPLEMENTATION	REMARKS
d. Surveillance of HIV prevalence in TB patients		
• Train treatment centre staff on HIV surveillance. • Conduct HIV refresher courses for previously trained staff.		
• Modify, produce & distribute TB registers capturing HIV status.		
• Conduct refresher course for trained lab personnel regarding HIV surveillance		
• Procure and distribute reagents for HIV testing		
• Conduct population based survey of HIV in TB clients		

Prevention of TB Infection in PLWHIV

ACTIVITY

a. Active contact tracing for TB in contacts of PLWHIV

- Train community/treatment supporters
- Conduct refresher training for community/treatment supporters
- Produce and distribute TB symptom questionnaire and referral forms
- Support community/treatment supporters to visit homes
- Ensure that TB & HIV/AIDS service providers give technical supervision and support to the community/treatment supporters
- Arrange for regular meetings and supervision of community/treatment supporters.

ACTIVITY		
b. TB infection control in health care facilities and prisons		
• Produce and distribute infection control plan and guidelines		
• Train health care workers on infection control		
• Produce and distribute IEC materials for patient education		
• Conduct periodic surveillance for TB infection/TB disease among health care workers in DOTS and HAART centres		
• Refurbish HAART and DOTS centres to ensure TB prevention		

Prevention and Treatment of OIs in TB-Infected PLWHIV

ACTIVITY	STATUS OF IMPLEMENTATION	REMARKS
• Procure and supply co-trimoxazole to DOTS and HAART centres through existing channels .		
• Implement guidelines for management of co-trimoxazole side effects .		

• Train DOTS and HAART centre staff in co-trimoxazole prophylactic treatment (CPT), management and counselling • Procure and distribute drugs for OI treatment and prophylaxis		

Intensified TB Case Detection in PLWHIV

ACTIVITY	STATUS OF IMPLEMENTATION	REMARKS
• Adapt and produce simple TB symptom questionnaire • Train HAART and CT centre staff to discuss TB with PLWHIV and to use the TB questionnaire • Support HAART & CT centres in sputum detection of TB by strengthening DOTS centres including refurbishment and provision of lab & logistical support for sputum collection & microscopy. • Procure and distribute sputum containers and request forms to HAART and VCT centres through normal channels.		

- Conduct implementation, recording and reporting activities.

- Establish referral system/strong linkage with nearest DOTS Centre.

Antiretroviral Treatment for TB/HIV patients During TB Treatment

ACTIVITY	STATUS OF IMPLEMENTATION	REMARKS
Conduct site visits and accreditation		
• Train DOTS centre staff about HAART and interactions with TB medication.		
• Conduct refresher courses on HAART interaction with TB Medications.		
• Strengthen DOTS centre pharmacy security for drug storage.		
• Strengthen referral links between DOTS and HAART centres if not fully integrated		
• Procure and distribute HAART drugs NACP		
• Train health staff on adherence counselling and monitoring NACP		

Community involvement in the management of TB and HIV patients

ACTIVITY	STATUS OF IMPLEMENTATION	REMARKS
• Develop and distribute IEC materials about TB and HIV to community/treatment supporters. Train PLWHIV support group members about TB and HIV.		.

Prevention of TB Disease in PLWHIV. TB preventive therapy

ACTIVITY	STATUS OF IMPLENTATION	REMARKS
• Conduct operational research to investigate the feasibility and effectiveness of isoniazid preventive therapy (IPT).		

Coordination of HIV/TB Activities at All Levels

ACTIVITY	STATUS OF IMPLEMENTATION	REMARKS
• Setting up District HIV/TB Coordinating Committees		
• Production and distribution of tools for collaboration (To include TB/HIV clinical manual; generic terms of reference for district HIV/TB coordinating committees; implementation of guidelines for prioritized HIV/TB activities; training manuals and modules; IEC materials; and monitoring & evaluation tools)		

Appendix 3

RECORDS REVIEW ABSTRACTION FORM

NAME OF FACILITY:

PERIOD:

ID	AGE	SEX	VCT	CPT	ART	INITIAL SPUTUM RESULTS	TREATMENT OUTCOME

KEY

SEX 0-male
1-female

VCT 0-not done
1-tested positive
2-tested negative

ART 0-not applicable
1-yes
2-no

CPT 0-not applicable
1-yes
2-no

Treatment outcome
1- Cured
2- Completed
3-Transferred out
4-Default
5-Treatment failure
6-Yet to complete
7-Died

Initial Sputum Results
1-Positive
2-Negative

Appendix 4

INDEPTH INTERVIEW GUIDE FOR REGIONAL AND DISTRICT PROGRAMME MANAGERS OF TB AND HIV.

1. **Set up a coordinating body for TB / HIV activities at all levels**

Is there a TB / HIV coordinating committee in district / region?
Yes☐ No☐

If no to any of the above, what are the reasons why it doesn't exist? What needs to happen for it to be established? Are there similar bodies that can take up the task of TB/HIV joint planning?

If yes to any of the above, what is the structure of the coordinating committee, how frequently does it meet and how open is it to community input and participation? Who are the members of the committee? Briefly outline the main functions and responsibilities of the committee. What are the strengths and limitations of the coordinating committees?

2. **Joint TB/HIV planning**

Is there joint planning for implementing TB/HIV collaborative activities. If no, how is the implementation process being rolled out? Explore further

3. **Conduct surveillance of HIV prevalence among tuberculosis patients**
   Is information about HIV prevalence among TB patients collected at the district / regional level? If yes how is it being collected? If no, why not

4. **Training building and capacity**

Have you been trained on TB / HIV collaborative activities?

Is there a training and manual for health care workers, which clearly outlines how to manage patients with co-infection?

5. **Conduct monitoring and evaluation**

Are there any official efforts to monitor and evaluate TB/HIV collaborative activities?
Yes☐ No☐

5.2If no, are there plans to monitor and evaluate TB / HIV activities in the future? If yes, how is it being done? Are they monitored through the TB program, HIV program or both?

6. Have you implemented all the 12 key activities? If no, which of them are being implemented and why.

7. What are the challenges to the implementation of the TB / HIV collaborative activities?

8. What has contributed to successes in the implementation of the TB / HIV collaborative activities

Appendix 5

CONSENT FORM

Dear Participant,

EVALUATION OF THE TB/HIV COLLABORATIVE ACTIVITIES IN THE MANYA KROBO DISTRICT

You are invited to be a part of this study which is being conducted by a Resident of the School of Public Health of the College of Health Sciences of the University of Ghana. The aim of the study is to assess the performance of the TB/HIV Collaborative Activities.

TB and HIV/AIDS are two conditions that have had a telling effect on populations for decades. TB/HIV collaborative has been introduced to reduce the burden of HIV in TB patients and vice versa. This study will seek to identify the gaps in the implementation process and make appropriate recommendations to improve upon it.

.

If you accept to be a part of this study you will be expected to answer all questions posed to you as truthfully and as candid as possible. However if at any point in the study you choose not to continue you are free to withdraw and without any liability nor obligation to the principal investigator or to the research assistants who are administering the questionnaire. You are assured of full confidentiality throughout the study and at no point during the study shall you or your name be associated with any questionnaire or opinion provided in the study.

Therefore I, …… declare that the rationale of this study has been fully explained to me and my consent sought to answer questions, some of which may make me feel uncomfortable

I have been assured that I am free to withdraw from the study at any time that I feel unwilling to continue and I shall not be liable to anyone or for anything.

I have also been assured of confidentiality throughout the study. I have given my consent to participate in the study.

Signature of Respondent……

Date…….

Signature Witness……

Name of Witness……

Date……