Factors Affecting Implementation of Community Based Directly Observed Treatment of Tuberculosis, Short Course, in Hoima District - Uganda

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A dissertation submitted to the school of Graduate studies, Makerere University in partial fulfillment for the award of the Master of Public Health degree of Makerere University.

2006
DECLARATION

I, Amandu Karl Linus declare that this work is original and it has never been presented for any award before, either wholly or in part at any Institution. I therefore present it for the award of the Master of Public Health degree of Makerere University.

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DEDICATION

This book is dedicated to my wife Mildred, my children Lauryn, Anabel, Mable and Zion for their support, encouragement and for enduring my frequent absence during the course of working on this book. It is also dedicated to all my relatives and friends for their moral and material support during the preparation of the book.
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### ACRONYMS AND ABBREVIATIONS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>AIDS</td>
<td>Acquired Immunodeficiency Syndrome</td>
</tr>
<tr>
<td>CB-DOTS</td>
<td>Community Based Directly Observed Treatment of Tuberculosis Short Course</td>
</tr>
<tr>
<td>CBHC</td>
<td>Community Based Health Care</td>
</tr>
<tr>
<td>CV</td>
<td>Community Volunteer</td>
</tr>
<tr>
<td>DDHS</td>
<td>District Director of Health Services</td>
</tr>
<tr>
<td>DDSP</td>
<td>District Development Support Programme</td>
</tr>
<tr>
<td>DOTS</td>
<td>Directly Observed Treatment Short course</td>
</tr>
<tr>
<td>DTLS</td>
<td>District Tuberculosis and Leprosy Supervisor</td>
</tr>
<tr>
<td>FGD</td>
<td>Focus Group Discussion</td>
</tr>
<tr>
<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
</tr>
<tr>
<td>HIV/STI</td>
<td>Human Immunodeficiency Virus/Sexually Transmitted Infection</td>
</tr>
<tr>
<td>H/U</td>
<td>Health unit</td>
</tr>
<tr>
<td>H/W</td>
<td>Health worker</td>
</tr>
<tr>
<td>IUATLD</td>
<td>International Union Against Tuberculosis and Lung Diseases</td>
</tr>
<tr>
<td>KI</td>
<td>Key Informant</td>
</tr>
<tr>
<td>Km</td>
<td>Kilometre</td>
</tr>
<tr>
<td>MDRTB</td>
<td>Multi Drug Resistant Tuberculosis</td>
</tr>
<tr>
<td>MOH</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-governmental Organization</td>
</tr>
<tr>
<td>NTLP</td>
<td>National Tuberculosis and Leprosy Programme</td>
</tr>
<tr>
<td>SAT</td>
<td>Self-administered Treatment</td>
</tr>
<tr>
<td>SCHW</td>
<td>Sub-county Health worker</td>
</tr>
<tr>
<td>TB</td>
<td>Tuberculosis</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
<tr>
<td>UNAIDS</td>
<td>United Nations Joint Programme On Aids</td>
</tr>
</tbody>
</table>
OPERATIONAL DEFINITIONS

Community - Refers to a group of individuals who have something in common and will act together in their common interest (UNAIDS, 1997).

CB-DOTS Patient - A tuberculosis patient who chooses to get treatment in the community under supervision of a community volunteers after the initial two weeks treatment in a health unit.

Defaulter - A tuberculosis patient whose treatment has been interrupted for two or more months.

Retreatment - A patient who has re-started tuberculosis treatment after defaulting or after the first course of treatment has failed.

Treatment completion - A patient who has finished the whole course of the prescribed anti-tuberculosis treatment either as a CB-DOTS patient or as a Health unit based DOTS patient.

Sub-county Health worker - Is a health worker who has been trained to oversee CB-DOTS activities in a particular sub-county.

CB-DOTS Volunteer - Is a person who may be a relative of a TB patient, community member, health worker or an NGO worker who has undergone training to administer TB drugs to CB-DOTS patients in a particular community.
ABSTRACT

Introduction

Tuberculosis is a communicable disease of human beings caused by Mycobacterium Tuberculosis bacteria. In CB-DOTS, tuberculosis patients are initially treated in a health center by a health worker for two weeks before they are sent back to their communities to continue treatment, under supervision of a Community Volunteer.

Objectives

The specific objectives of the study were: To establish Patient related factors influencing implementation of CB-DOTS in Hoima district; to establish community related factors affecting implementation of CB-DOTS in Hoima district; and to establish health system related factors affecting CB-DOTS implementation in Hoima district.

Study design

This was a descriptive cross sectional study employing qualitative and quantitative methods of data collection, intended to identify factors affecting implementation of CB-DOTS in Hoima district in 2003.

Results

The findings of the study show that not having a community volunteer, long waiting time at the health unit, distance of over 5km from the health unit, and use of other drugs in addition to the anti-TB drugs provided at the health unit, affect implementation of CB-DOTS. Tuberculosis patients who had community volunteers and those who did not experience stock-outs of anti-TB drugs at the health unit of treatment were more likely to have completed treatment. CB-DOTS patients who collect anti-TB drugs themselves from the Sub-county Health Worker were more likely not to complete treatment.

Recommendations

From the findings of the study, it is recommended that community volunteers be trained before they begin to serve the communities, the district should ensure adequate supplies of anti-TB drugs and diagnostic materials at all TB treatment centers. It is further recommended that community members and HWs be sensitized on CB-DOTS and on how to humanely handle TB patients respectively. Traditional healers should also be integrated into TB care.
CHAPTER ONE

1.0 INTRODUCTION AND BACKGROUND

Tuberculosis is a complex communicable disease of human beings caused by *Mycobacterium tuberculosis* and less commonly by the related bacteria *M. africanum* and *M. bovis* collectively referred to as the tubercle bacilli (Haas 1995). With the advent of effective drug treatment in the 1950s and prophylaxis in the 1960s, many in the medical and public health communities, particularly in the industrialized countries, assumed that tuberculosis was conquered. This hubris led to several decades of neglect by the biomedical community, during which control efforts were ignored or deliberately weakened.

Unfortunately the economic, social and public health factors that foster the propagation of tuberculosis had not been eliminated, not even from the industrialized nations. So in the 1980s and 1990s as the deterioration of control programs coincided with the HIV epidemic, tuberculosis reemerged. Numerous outbreaks were seen in the larger cities of the United States, which had the highest incidence of the human immunodeficiency virus (Pitchenik 1999). More serious however was that in some areas of the developing world where tuberculosis and HIV are endemic, the incidence of tuberculosis doubled, and health facilities were overwhelmed by the dual epidemic.

In 1999, the World Health Organization ranked tuberculosis among the most serious health threats to the world. It is estimated that a third of the people in the world are latently infected with *M. tuberculosis*. In addition, 7 to 8 million new tuberculosis cases occur each year, and approximately 2 million people die from the disease. In recent years, a renewed effort to promote tuberculosis control has been launched.

Unfortunately, the wide distribution of the infection and its complex epidemiology and natural history, coupled with insufficient resources to adequately respond to
the epidemic, will ensure that tuberculosis will be a serious public health problem for many more years.

1.1 Directly Observed Treatment Short Course (DOTS)

DOTS as a tuberculosis control strategy was pioneered by the international Union against tuberculosis and Lung Disease ( IUATLD) and recommended by the WHO. The DOTS strategy takes simple technology and packages it with good management practices for widespread use. DOTS strategy implementation varies from country to country and requires flexibility in adapting the strategy to suit local circumstances.

1.2 Types of DOTS

There are two types of DOTS 1) Health unit based DOTS is where TB patients are treated in a health unit for the initial two months (intensive phase), following which they are discharged and given drugs to swallow at home during the continuation phase, under no supervision i.e. Self-administered treatment (SAT).

In Community Based Directly Observed Treatment of Tuberculosis Short Course (CB-DOTS), TB patients are treated for two weeks in a health unit (intensive phase), following which they are discharged. Each patient is thereafter assigned a community volunteer in his/her community who delivers TB drugs to the patient and observes the patient as he/she takes the drugs. Sub-county health workers (SCHWs) deliver TB drugs from the health units to the community volunteers and supervise their activities.
1.3 Essential elements of the Directly Observed Treatment Shortcourse (DOTS) strategy

Five essential elements are important for the implementation of the DOTS strategy. These are: Government commitment to sustained tuberculosis control; sputum smear microscopy to detect the infectious cases among those people attending health care facilities with symptoms of pulmonary tuberculosis; standardized short-course anti-tuberculosis treatment for at least all sputum smear-positive pulmonary tuberculosis cases, with direct observation of treatment for at least the initial two months; regular un-interrupted supply of anti-tuberculosis drugs and diagnostics; and monitoring and accountability system for programme supervision and evaluation of treatment outcome for each patient diagnosed. These elements are universal and recommended by the WHO and IUATLD (CARE/CDC, 1999).

1.4 Community Based Directly Observed Treatment Short course (CB-DOTS)

In community based DOTS, tuberculosis patients are initially treated in a health unit under direct supervision by a health worker for two weeks before they are sent back to their communities to continue treatment from there. In the communities Volunteers who may either be trained community members, NGO workers, or health workers supervise treatment. Volunteers ensure that TB patients are given the right drugs, in the right doses and at the correct intervals. They administer drugs to the patients and observe them as they swallow the drugs. CB-DOTS is currently being implemented in a number of Asian and African countries, including Uganda.
In Uganda, the problem of tuberculosis continues to be aggravated by the pandemic of HIV/AIDS. CB-DOTS continues to be expanded as a means of ensuring that patients take the prescribed drugs.

Over the period (2003/2004), case detection has improved from 50% to 53%; case treatment success for TB rose from 61.5% to 66%; availability of drugs for TB improved significantly and 20 laboratories in the districts received new equipment with associated supplies. While all districts are supported with essential supplies and guidelines to provide health facility based DOTS, only 18 out of 56 districts are implementing CB-DOTS. The expansion of CB-DOTS is progressing at a lower speed than desired. It is hoped that the expected Global Fund resources will assist in the acceleration of this key strategy for TB control (MOH, 2003).

Hoima district is found in mid-western Uganda. It is bordered by Masindi district in the North, Kibale district in the South, lake Albert in the West and Kiboga district in the East. It covers 5,755 square Km with a population of 349,000 and a population density of 61 persons per square kilometer (UBOS 2002).

Administratively, it is demarcated into 2 counties, 11 sub-counties, 2 townships 55 parishes and 509 villages. There are 2 Health sub-districts (Bugahya and Buhaguzi) with 37 health units including Hoima Regional Referral Hospital.
Table 1: Top ten diseases in Hoima district

<table>
<thead>
<tr>
<th>Disease</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Malaria</td>
<td>31.8</td>
</tr>
<tr>
<td>2. Upper respiratory tract Infections</td>
<td>19.1</td>
</tr>
<tr>
<td>3. Diarrhea</td>
<td>16.6</td>
</tr>
<tr>
<td>4. Intestinal worms</td>
<td>11.5</td>
</tr>
<tr>
<td>5. HIV/STI</td>
<td>7.0</td>
</tr>
<tr>
<td>6. Skin diseases</td>
<td>5.1</td>
</tr>
<tr>
<td>7. Lower respiratory tract Infections</td>
<td>3.8</td>
</tr>
<tr>
<td>8. Eye diseases</td>
<td>3.2</td>
</tr>
<tr>
<td>9. Trauma</td>
<td>1.3</td>
</tr>
<tr>
<td>10. Dental diseases</td>
<td>0.6</td>
</tr>
</tbody>
</table>

(Hoima District HMIS, 2002)

In Hoima district, initial training of Community Volunteers and Health workers in preparation for CB-DOTS implementation was carried out in the year 2000. Following this, implementation stalled due to lack of funding. It was only in 2001 that the district was able to start implementing CB-DOTS with financial support from the District Development Support Programme (DDSP). DDSP provided funds for refresher training of health workers (H/Ws), purchase of fuel and payment of allowances for H/Ws involved in the programme. However for unknown reasons, CB-DOTS implementation had only taken off in five out of the eleven sub-counties in the district by 2003.
CHAPTER TWO

2.0 LITERATURE REVIEW
2.1 Rationale for CB-DOTS

CB-DOTS leads to improved patient compliance to TB treatment (Alwood 1994). DOTS makes it virtually impossible for a patient to develop multi drug resistant tuberculosis (MDRTB). Other treatment strategies are actually causing MDRTB and may be causing more harm than good.

DOTS is cost effective. A six-month supply of medicines for DOTS costs only $11 per patient in some parts of the world. The World Bank has ranked the DOTS strategy as one of the most cost effective of all health interventions.

CB-DOTS does not require hospitalization, a massive infusion of new technology or a new health care structure. CB-DOTS can use and improve the efficiency of the existing primary health care system and staff.

CB-DOTS extends the lives of AIDS patients. DOTS has been demonstrated to add as many years of life as currently available protease inhibitors to people living with HIV/AIDS, yet the medicines used for DOTS are only one hundredth the cost.

CB-DOTS cures the patient – DOTS produces cure rates as high as 95% even in the poorest countries. Tuberculosis programmes not using DOTS often cure only 40% of their patients.

DOTS prevents new infections by curing the infectious patient. A patient who is not cured will on average infect 10 to 15 other people each year (The TB Bulletin, March 2003).
2.2 DOTS and cure rates for tuberculosis

The greatest unmet Public health challenge in TB control is treatment completion. Worldwide, at least 20% of all patients treated for pulmonary TB in 1993 did not complete therapy even within 12 months.

DOTS increases cure rates for tuberculosis as compared to other non-supervised strategies for tuberculosis treatment. Treatment rates for pulmonary tuberculosis are most likely to exceed 90%, as recommended by the Centers for Disease Control and Prevention, when treatment is based on a patient centered-approach using directly observed therapy with multiple enablers and enhancers (Chaulk et al, 1998).

In Nepal, cure rates which were as low as 40% previously have risen to 60% or more with even higher rates of up to 80% in the DOTS sites (Kathmandu Post, 1999).

In Maldives, the DOTS strategy has been applied since 1994 and has led to impressive and consistent cure rates in excess of 85% (WHO 2001).

The current cure rate for tuberculosis in Uganda stands at 60%. The MOH had an objective of raising it to 80% by 2005 through: Promotion of TB control and treatment, provision of guidelines for standard treatment and reviewing treatment guidelines; Procurement and distribution of adequate anti-TB drugs and medical supplies; Development and implementation of a comprehensive mechanism for contact tracing, new cases and defaulters; Training health workers in the diagnosis and treatment of TB; Implementing a comprehensive surveillance system and conducting operational research on chemoprophylaxis; Implementation of community based DOTS (MOH 2000).
In the year 2001, only 31.9% of the patients in the Western Zone of NTLP (which includes Hoima district) completed TB treatment, in spite of the fact that three districts in the zone had already embarked on CB-DOTS implementation (MOH, 2002). Clearly there are problems that need to be overcome in CB-DOTS implementation in the district and Uganda as a whole.

2.3 CB-DOTS and stigmatization

Several studies show that TB patients are ostracized in their communities, although its effect on CB-DOTS implementation has not been investigated.

In one survey, three quarters of recently arrived Vietnamese immigrants to New York said that community members would fear and avoid someone known to have TB (Carey et al 1997). The adverse social impact of tuberculosis has also been noted in Honduran and Hispanic communities (Sumartojo 1993).

In a survey carried out in Egypt, 44% of the respondents said that they would not tell anyone of their sickness if they were diagnosed with TB because they did not want to stigmatize themselves. Twenty two percent of the respondents mentioned that they would not touch TB patients as shaking hands. Fifty one percent of the respondents would not approve a marriage of TB patients while 30% would not object (Zaher et al, 1996).

For the Sidama people of Ethiopia, the word for tuberculosis is used as an insult (Vecchiato, 1997).

In some cultures the stigma of tuberculosis remains as powerful as that of HIV. In many East African cultures, family and friends share food and eating utensils. One drinking cup may be used for a group of several people who are eating together. A family eats with their hands from a single plate of food. When a person becomes symptomatic from tuberculosis, he or she may fear that others
will refuse to share food and drink with him/her. This fear of social isolation may lead the persons to deny the true nature of the disease to themselves or others. Furthermore, because anti-tuberculosis medicines were not available until recently (and even today remain expensive and difficult to obtain especially in rural areas) some may not realize that the disease is curable. Thus persons with chronic cough may refuse to see health care providers for diagnosis and treatment, because if they are diagnosed with tuberculosis they may be forced to use their own cups and utensils, publicly signifying their illness (Tao Sheng Kwan-Gett 1998).

2.4 Volunteer motivation for CB-DOTS

Motivation of community volunteers for CB-DOTS may affect implementation of CB-DOTS. A study in South Africa found that attrition rates among volunteers was high (22% had dropped out of the programme within one year of joining); 75% of the drop-outs gave loss of interest and a desire for paid work as the reasons for leaving the TB programme. Other motivating factors included altruism, a need to find something to do with one’s spare time, gaining work experience, and the novelty of the community based TB programme. In resource-limited settings, it is important to identify and implement appropriate alternative incentives that could motivate laypersons in order to sustain community participation in high burden TB areas (Kironde et al 2002).

2.5 Supervision and training

Supervision of patients and health workers is very essential for the success of CB-DOTS implementation in the communities. SCHWs supervise Community volunteers who in turn supervise CB-DOTS patients. The DTLS carries out
supervision of SCHWs and health workers at the health units offering TB treatment. Any breakage in the chain of supervision causes problems.

In a study in Thailand, it was found that supervision was infrequent and monitoring of treatment was unreliable. Up to 50% of the patients defaulted from treatment, adding to the risk of emergence of MDRTB (Charkon, 1995). Elsewhere in Bangladesh, the sputum smear conversion and cure rates in new smear positive patients in a CB-DOTS project remained at around 85% and 75% respectively despite the rapid expansion of the project and involvement of various partners. This indicates that quality of services can be maintained under field conditions through adequate training and regular supervision of all components of service delivery. Up to 1997, a total of 27,728 staff of various cadres in different levels of the system were trained. Continuous support has been provided for trained staff through regular supervision and monitoring visits (Kumaresan et al, 1998).

2.6 Other factors

Access to health centers can be a problem to TB patients, who sometimes have to travel long distances to reach there. Costs incurred for investigations and transport to the health units may also prevent some patients from accessing treatment. In a study by Tekle et al, (2002) in Ethiopia it was found that DOTS patients being followed up at health units face the hardships of long distance and high costs for laboratory testing.

In another study conducted by Adatu et al (1998-1999) in the Ugandan district of Kiboga, TB patients reported traveling long distances to the health units, which could eventually lead to treatment interruption. In the same study, after CB-DOTS implementation 96% of TB patients were satisfied or very satisfied with
CB-DOTS. TB patients believed that CB-DOTS takes services to the people, they feel less isolated or neglected in the community, CB-DOTS encourages community participation, lowers cost, improves access to TB services and allows patients to continue to work. TB patients often cited ignorance, denial and length of TB treatment as reasons why patients refuse CB-DOTS.

TB patients on Self-administered treatment (SAT) may interrupt treatment once they start feeling better. Eighty one percent of defaulters interrupted treatment during the continuation phase. This may be because patients may feel that they are cured after the intensive phase.

A significant protective effect was observed of a patient's knowledge about the duration of treatment. The risk of defaulting was higher in those with inadequate knowledge about the duration of DOTS treatment. This may be due to the fact that these patients had the impression of being completely cured after some months of treatment (Lipsitch et al, 1998).

Family support, encouragement and counseling are very essential for CB-DOTS patients to seek treatment and complete it. A study by Liefooghe et al (1999) found that the risk of being a defaulter was lower in those TB patients who had family support. It is plausible that family support can alleviate patients' economic and social problems.

Family members can also observe patients taking their medications, provide encouragement and remind them to keep their medical appointments.

The presence of side effects of anti-TB drugs and long distance to the health unit were also reported as reasons for defaulting from TB treatment (Tekle et al, 2002).
Availability of resources is important for TB control. It was with this aim in mind that in April 2001, United Nations Secretary General Kofi Annan called for the establishment of a global fund to fight diseases of poverty namely AIDS, tuberculosis and malaria (GFATM). In October 2001 the Global Plan to Stop TB was presented at the Stop TB Partners Forum. It delineated a five-year plan costing US$9.1 billion, encompassing programme costs, new diagnostics, drugs and vaccines and advocacy, resource development and monitoring. Tuberculosis projects received about one quarter of the USS 1.6billion required over 5 years, 56% of which is for Africa, followed by 21% for South East Asia (Fujiwara, 2002). Uganda being a high TB burden country is set to benefit from this fund, which is expected to facilitate CB-DOTS expansion to more districts (MOH, 2003).

Integration of health services and collaboration with other stakeholders is required for effective TB control using CB-DOTS. Such a strategy is very useful in situations where there is a dual epidemic of HIV and AIDS as the case in South Africa. In order to develop a combined approach to manage TB and HIV/AIDS, the government of South Africa has developed new polices to manage the dual epidemic. In 1999, the Department of Health in South Africa started the process of developing TB/HIV pilot sites. Key areas of collaboration in the pilot sites include: development of joint operational plans, advocacy, health education, service provision including the promotion of VCT, prevention of active TB amongst people living with HIV/AIDS by providing INH prophylaxis, research, monitoring and surveillance (Matji, 2002).
In Uganda the NTLP has collaborated with The AIDS Support Organisation (TASO) in CB-DOTS implementation in Kawempe Division. TASO helped to mobilize community volunteers to supervise treatment while NTLP provided drugs and diagnostic facilities (Okot-Nwang et al, 2000).

Community and social mobilization is an essential element of CB-DOTS implementation. Tuberculosis is a major public health problem in Nepal. About 45% of the population is infected with TB. DOTS was introduced in the country in 1996, but has now expanded throughout the country. DOTS has succeeded in the diverse geographic areas of Nepal through significant community participation. The formation of DOTS committees in the communities was the key to mobilizing the communities for DOTS implementation. It includes social workers, political leaders; health services providers, journalists, teachers, students, and representatives of local organizations, medical schools and colleges, industries, private practitioners as well as TB patients. A key role of the DOTS committee is to identify local problems and their solutions (Bam et al, 2002).

Another study in Lusaka, Zambia by Makasa et al, (2002) found that there was inadequate knowledge about TB both among patients and carers. This was influenced by level of education, religion and locality. Sixty percent of the respondents used alternative treatment, including herbs concomitantly with their TB drugs. Sixty percent of the respondents also felt that TB patients should be secluded either in Hospital or at home. He concluded that Information Education and Communication (IEC) can play a pivotal role in control of tuberculosis and there is need to strengthen or develop practical, cost-effective IEC community strategies.
In a CB-DOTS program implementation in Quito, Ecuador the following problems were identified: The detection rate of patients with respiratory symptoms was low. Three sputum samples were not always obtained from suspected TB cases and some CB-DOTS patients had problems in accessing health units. Risk factors for defaulting from treatment included previous TB treatment in a private clinic, low level of education, cultural beliefs in natural, occult and alternative medicine, and presence of other diseases such as gastritis, arterial hypertension and diabetes. To overcome these problems health workers in the health units were trained; visits were encouraged to homes of people with respiratory symptoms. Community leaders and families of TB patients were trained to administer and observe medication. Specialists were consulted from health institutions to handle other diseases (Romero-Martínez, 2002). Thus in the DOTS strategy everyone can participate in TB control. Peralta (2002) also came up with similar findings about DOTS in the rural areas of Ecuador. He reported that DOTS TB treatment is difficult for the people to accept because of their culture of religious and magical cures. Only 66% of the patients completed treatment. He recommended that people in the rural areas need more personal and medical attention for DOTS to succeed.

Patient mobility and difficulty in contact tracing can sometimes interfere with CB-DOTS implementation in urban areas. In Kathmandu municipality in Nepal, it was discovered that the annual risk of infection is 4% compared to 1.8% for the rest of the country. Migration, poor late patient tracing, poor public health infrastructure and lack of public private collaboration were a threat to the fight against TB so a separate strategy was developed and implemented in the municipality. A high level steering committee and action committee was formed to develop policy and action plan. DOTS committees were formed and basic training on TB and defaulter tracing was given to the community volunteers. Orientation was given to the DOTS committee members, members of the district development council, and municipality including local NGO/clubs (Yoshiyama et al, 2002).
CHAPTER THREE

3.0 STATEMENT OF THE PROBLEM

Hoima district adopted CB-DOTS in 2001. Prior to this, the district had been practicing health unit based DOTS. The following activities were undertaken by the Hoima DHT to strengthen CB-DOTS implementation: identification and training of SCHWs, training of community volunteers and sensitization of communities on TB through radio and posters in public places. A sensitization workshop was also held for all sub-county leaders in the district.

In spite of the above efforts by the DHT, cure rates for tuberculosis have remained low in the district e.g. the cure rate for Hoima district stands at 6% (MOH, 2002) compared to the national figure of 55% (MOH, 2002). Case finding for tuberculosis is not adequate. In 2001, case finding was only at 20% in the district (Hoima District HMIS). This is a potential for spread of tuberculosis to more community members. The Hoima DHT and NTLP were concerned about the low cure rates and inadequate case finding for tuberculosis in the district.

Factors affecting implementation of CB-DOTS in the district are not known.

The DHT had embarked on community sensitization on TB and frequent support supervision of H/Ws and CVs, but there was no improvement in the above parameters.

3.1 Justification for the study

This study aimed at establishing factors that adversely affect implementation of CB-DOTS in Hoima district, with a view of using the findings to plan for improved CB-DOTS implementation in Hoima and other districts in Uganda. Besides, no studies have so far been done to find out factors affecting CB-DOTS implementation in Hoima district.
3.2 Research questions
What factors hinder implementation of CB-DOTS in Hoima?
Are there any factors that make CB-DOTS implementation in Hoima easier? What can be done to improve CB-DOTS implementation in Hoima district?

3.3 Conceptual framework

Community factors
- Knowledge
- Sensitization/Awareness
- Cultural factors
- Traditional treatment
- Poor health seeking behavior
- Religious factors

Patient related factors
- Patient too ill
- Lack of family/community support
- Poverty
- Cultural beliefs
- Religious beliefs
- Stigmatization
- Available alternative treatment
- Poor compliance
- Adverse effects of treatment
- Ineffective treatment
- Long waiting time at health unit
- Quick symptoms reduction
- Long duration of treatment
- Lack of awareness
- Health unit far away

Health systems related factors
- Laziness of H/W
- Heavy workload
- Ignorance
- Training
- Motivation
- Poor planning
- Health education
- Transport
- Staff shortage
- No health education
- Long waiting time
- Unco-operative H/W
- Inadequate supervision
- No supervision
- H/W rude to patient
- H/W demands money for TB drugs

The conceptual framework outlines the various factors that could potentially affect CB-DOTS implementation. Cultural beliefs regarding the cause and treatment of tuberculosis could affect CB-DOTS implementation. Likewise, health system related factors like stock outs/irregular supply of anti-TB drugs can have an impact on CB-DOTS implementation.
CHAPTER FOUR

4.0 OBJECTIVES

4.1 General Objective

To identify factors affecting implementation of CB-DOTS in Hoima district in order to design strategies to improve CB-DOTS implementation in Hoima district.

4.2 Specific Objectives

1. To establish Patient related factors influencing implementation of CB-DOTS in Hoima district.

2. To establish community related factors affecting implementation of CB-DOTS in Hoima district.

3. To establish health system related factors affecting CB-DOTS implementation in Hoima district.
CHAPTER FIVE

5.0 METHODOLOGY

5.1 Study area
This study was conducted in five sub-counties of Hoima district in mid-western Uganda, in 2003.

5.2 Study population
The primary population for this study consisted of TB patients on CB-DOTS. The secondary population included health workers, community volunteers and community members in Hoima district. TB patients were traced to their homes and interviewed using semi-structured questionnaires. Community volunteers for FGDs and H/Ws for the key informant interviews were purposively selected. Community members for FGDs were selected from ten sites at random in the five sub-counties implementing CB-DOTS in the district. Two FGDs were conducted with community members in each sub-county implementing CB-DOTS.

5.3 Study Design
This was a descriptive cross sectional study employing both qualitative and quantitative methods of data collection.
5.4 Sample size determination

The calculated sample size for this study consisted of 132 CB-DOTS patients, determined using the Formula by Lemeshaw et al (1974) i.e.,

\[ n = \frac{Z^2 \cdot \frac{1-P}{P}(1-P)N}{d^2(N-1) + Z^2 \cdot \frac{1-P}{P}(1-P)} \]

Where P is the proportion of tuberculosis patients on CB-DOTS in the district and Z is the estimated number of Tuberculosis patients in the district.

The following assumptions were made:

Anticipated proportion of CB-DOTS patients among tuberculosis patients = 50%.
Population size of TB patients in Hoima district = 200
Using the assumptions above, the sample size at 95% confidence interval is 132.

5.5 Sampling method

Simple random sampling was used. A list of all CB-DOTS patients in Hoima district was used as a sampling frame. This list was obtained from the office of the Hoima District Director of Health Services. One hundred thirty two patients were picked from the sampling frame, using a table of random numbers.

For the community's views, two villages were picked at random from each sub-county from a list of all the villages in the five sub-counties that are implementing CB-DOTS. From the two villages in each sub-county, 10-12 adults were selected for the FGD. Between 10 and 12 community volunteers were purposively picked from each of the 5 sub-counties implementing CB-DOTS for FGDs. For FGDs, an attempt was made to have balanced representation of males and females.
Key informants included the DDHS, DTLS SCHWs and the in-charges of all health units providing TB treatment in the district. Key informants were purposively selected.

5.6 Inclusion and exclusion criteria

5.6.1 Inclusion criteria

Patients with tuberculosis diagnosed within the last two years were studied irrespective of whether they were still on treatment or not at the time of the study. Only those TB patients who were residents of Hoima district at the time of the study were included in the study. Also, all TB patients included in the study had to be ten years old or above at the time of the study. For the FGDs only adults (18 years old and above) were selected. The persons selected had to have been living in the community for the last two years.

5.6.2 Exclusion Criteria

Tuberculosis patients diagnosed more than two years ago, patients who were less than ten years old at the time of the study and those who had transferred out of Hoima district were excluded from the study. Tuberculosis patients diagnosed more than two years ago were excluded from the study because CB-DOTS implementation had only taken off in the district in 2001 and those TB patients diagnosed more than 2 years back had had no chance of benefiting from CB-DOTS.

Also tuberculosis patients who had been getting TB treatment from private clinics, those who were too ill and those who refused to participate in the study were excluded. For the FGDs, children (10 years and below), persons who had
lived for less than two years in the community at the time of the study and mentally ill persons were excluded.

5.7 Study Variables

5.7.1 Dependent Variables

Dependent variables for this study included: defaulting from TB treatment, treatment completion.

5.7.2 Independent variables

Independent variables included: age, sex, education level, marital status and distance to health unit of the respondents.

Other independent variables included:

Health systems' factors: availability of community volunteers, direct observation of treatment, availability of drugs, and long waiting time at health units.

Socio-cultural factors: belief in traditional treatment, witchcraft, stigma, religious beliefs and lack of awareness on TB among community members in the district.

Economic factors: Lack of money for transport, food, and investigations.

5.8 Data collection

The principal investigator provided close supervision to research assistants during the entire period of data collection. The PI recruited and trained research assistants before the start of data collection. Semi-structured questionnaires were made, pre-tested and used to collect data from CB-DOTS patients. If the research assistants failed to find a patient at home, they made three follow-up visits to the home of the patient.
Interviews were conducted with key informants (KI) and focus group discussions were (FGDs) conducted with Community volunteers and Community members in the district.

Key Informants for this study included the District Director of Health Services, DTLs, in-charges of health units overseeing CB-DOTS implementation and Sub-county Health workers in Hoima district. KIs were purposively selected and interviewed to obtain information on CB-DOTS implementation in the district. KI interview guides were used to obtain information from KIs.

FGDs were done with CB-DOTS volunteers and community members in the district, who were purposively selected. Each FGD consisted of 10 to 12 participants. The PI ensured balanced representation of males and females in the FGDs. Fifteen FGDs were conducted, of which five were for community volunteers and ten for community members. FGD guides were used to obtain information from the participants.

5.9 Quality control

Good quality of data was ensured in the following ways:

1. Five research Assistants were recruited and trained on data collection before sending them to the field to collect data.

2. The questionnaires were pre-tested among TB patients on CB-DOTS in the district. Data was not collected for the study among TB patients on whom the questionnaires had been pre-tested.

3. The questionnaires were translated from the English version into Lunyoro and Alur (Local Languages). The version in the local languages was then translated back to English and the meanings compared to ensure consistency.

4. The Principal investigator provided daily supervision for research Assistants in the field.
5. At the end of each day, there was a meeting between the Principal Investigator and research Assistants to identify and solve problems affecting data collection in the field.

6. A tape recorder was used to record Key informant Interviews and Focus FGDs in addition to the notes taken during discussion. Information on the Audio tapes and the hand written notes were compared before a fair version written for analysis.

5.10 Data management

The Principal investigator read through, edited and coded the data after collection. He then entered it into the computer for analysis.

5.10.1 Quantitative data

Epi-Info 2002 and Microsoft Excel statistical packages were used for analysis of quantitative data. Odds ratios and p-values were used to test for statistical significance. Cross tabulation of variables was done to come up with Odds ratios, which were used to measure association between the variables. Odds ratios were used to determine the risk factors for defaulting from TB treatment e.g. not having a Community volunteer and distance of over 5km from the health unit. Frequencies were also determined for various factors, after which graphs and frequency tables were drawn.

5.10.2 Qualitative data

Qualitative data was divided into various themes and sub-themes. It was then analyzed manually using a master sheet. The principal investigator compared the information on the audiotapes with that in the notebooks before writing a fair version for analysis. Triangulation was done on data from various sources to prevent exaggeration of information and to increase validity. Qualitative data was presented in the form of text.
5.11 Ethical considerations

Permission to do the study was sought from Hoima District authorities, the Makerere University Institute of Public Health Higher degrees Research and Ethical Committee and the National Council of Science and Technology. This ensured that ethical principles were strictly adhered to during implementation of the study.

Written informed consent was sought from all patients and DHT members before participating in the study. For respondents below 18 years of age, consent forms were signed by their parents/guardians.

Strict confidentiality was observed. Names of study participants were not recorded on questionnaires and interview guides. Filled questionnaires were kept under lock and key and only the principal investigator had access to them. Information obtained during the study was used only for purposes of the study.

5.12 Study Limitations

This was a cross sectional study done at a point in time. There could have been biased recall of past events.

It was not possible to trace some of the patients selected for the study, even on repeated visits to their homes. Such patients were presumed to have died or migrated out of the district. Thus, the sample size dropped from the calculated value of 132 to 105. This factor could have greatly reduced the power of the study, so the findings must be interpreted with caution.
It was difficult to translate some expressions in the FGD guides and questionnaires into Lunyoro, the local language. This must certainly have led to loss of some information.

P-values for factors associated with treatment completion were calculated without giving an allowance for those patients that were still on treatment, had defaulted, or were on retreatment. A cohort study design might have been more suitable for calculating this p-value.

5.13 Dissemination

The study findings will be submitted to the school of Graduate Studies, Makerere University in partial fulfillment for the award of the Master of Public Health Degree of Makerere University. The findings will later be disseminated to the Hoima DHT, Hoima district Local Government and the Institute of Public Health, Makerere University.


CHAPTER SIX

6.0 RESULTS

6.1 Introduction

One hundred five TB patients on CB-DOTS were included in the study. None of the respondents refused to consent for the study. Twelve key Informants were interviewed and fifteen FGDs were conducted, ten with community members and five with Community Volunteers.

6.2 Socio demographic characteristics of respondents

Table 2: Socio Demographic Characteristics Of Respondents

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Number of respondents</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>38.2</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>42.0</td>
<td></td>
</tr>
<tr>
<td>Mode</td>
<td>36.0</td>
<td></td>
</tr>
<tr>
<td>Minimum</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>62</td>
<td>59.0</td>
</tr>
<tr>
<td>Female</td>
<td>43</td>
<td>41.0</td>
</tr>
<tr>
<td><strong>Sub-county</strong></td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Kigorobyta</td>
<td>36</td>
<td>34.3</td>
</tr>
<tr>
<td>Kabwoya</td>
<td>23</td>
<td>21.9</td>
</tr>
<tr>
<td>Kiziranfumbi</td>
<td>21</td>
<td>20</td>
</tr>
<tr>
<td>Buhanka</td>
<td>13</td>
<td>12.4</td>
</tr>
<tr>
<td>Kitoba</td>
<td>12</td>
<td>11.4</td>
</tr>
<tr>
<td><strong>Distance to H/U</strong></td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>&gt;5km</td>
<td>34</td>
<td>32.4</td>
</tr>
<tr>
<td>&lt;5km</td>
<td>71</td>
<td>67.6</td>
</tr>
<tr>
<td><strong>Education level</strong></td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>62</td>
<td>59.0</td>
</tr>
<tr>
<td>None</td>
<td>27</td>
<td>25.7</td>
</tr>
<tr>
<td>Secondary</td>
<td>12</td>
<td>11.4</td>
</tr>
<tr>
<td>Tertiary</td>
<td>4</td>
<td>3.8</td>
</tr>
</tbody>
</table>
The number of respondents were 105 in total. Their ages ranged from 15 to 75 years with a mean age of 38.2, mode 36.0, median being 42.0, variance 212.2 and standard deviation 14.6. Most respondents were males (59%), and the biggest proportion (59%) had primary education as indicated in Table 1. The distances from the homes of the respondents to the health units of treatment ranged from 1.0 to 15.0 kilometers, with a mean of 5.6 kilometers and variance of 9.8 kilometers. The median and modal distances were 5.0 and 4.0 kilometers respectively, while the standard deviation was 3.1 kilometers.

Only five sub-counties in the district were found to be practicing CB-DOTS. According to the DDHS, “The SChWs in the sub-counties that are not practicing CB-DOTS are lazy and lack commitment to their work. Some of the SChWs want to be paid separate allowances for practicing CB-DOTS, yet CB-DOTS is supposed to be integrated with other health programs e.g. immunization, water and sanitation programs”.

6.3 Status of tuberculosis treatment

Majority of the respondents (47.6%) were still on treatment and about 37% had completed treatment as indicated in Table 3.

Table 3: TB treatment status of respondents

<table>
<thead>
<tr>
<th>Status of TB treatment</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed treatment</td>
<td>39</td>
<td>37.1</td>
</tr>
<tr>
<td>Defaulted</td>
<td>9</td>
<td>8.6</td>
</tr>
<tr>
<td>Retreatment</td>
<td>7</td>
<td>6.7</td>
</tr>
<tr>
<td>Still on treatment</td>
<td>50</td>
<td>47.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>105</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
6.4 Patient related factors influencing implementation of CB-DOTS

6.4.1 Defaulting on TB treatment

Eight point six percent of the respondents (9/105) had defaulted from treatment. Seventy seven point eight percent of the defaulters (7/9) were male while 22.2% (2/9) were female. As shown in Table 4, 66.7% of the respondents who had defaulted from tuberculosis treatment said they defaulted because they felt better after taking the drugs for a few days, while 22.2% said they were too ill to take the drugs and 11% stopped treatment because of adverse effects from drugs.

Table 4: Reasons for defaulting on TB treatment

<table>
<thead>
<tr>
<th>Reason for defaulting</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adverse effect of drugs</td>
<td>1</td>
<td>11.1</td>
</tr>
<tr>
<td>Felt better</td>
<td>6</td>
<td>66.7</td>
</tr>
<tr>
<td>Too ill</td>
<td>2</td>
<td>22.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

6.4.2 Risk factors associated with defaulting from anti-TB treatment

From the results in Table 5, not having a community volunteer, long waiting time at the health unit and distance of over 5km from the health unit were significant risk factors to defaulting from TB treatment (p-values: 0.00018, 0.01611, 0.0305,) respectively.
Table 5: Risk factors for defaulting from TB treatment

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>Odds ratio (Crude)</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not having a community volunteer</td>
<td>6.58</td>
<td>2.28 – 19.02</td>
</tr>
<tr>
<td>Long waiting time at H/U</td>
<td>5.10</td>
<td>1.21 – 21.53</td>
</tr>
<tr>
<td>Distance of &gt; 5km from the H/U</td>
<td>4.85</td>
<td>1.13 – 20.79</td>
</tr>
<tr>
<td>Use of other drugs in addition to those provided at the H/U</td>
<td>3.75</td>
<td>0.93 – 15.11</td>
</tr>
<tr>
<td>Stigma</td>
<td>2.04</td>
<td>0.51 – 8.19</td>
</tr>
<tr>
<td>Having financial problems</td>
<td>1.84</td>
<td>0.28 – 7.38</td>
</tr>
<tr>
<td>No formal education</td>
<td>1.20</td>
<td>0.22 – 6.00</td>
</tr>
<tr>
<td>Male sex</td>
<td>0.29</td>
<td>0.06 – 1.44</td>
</tr>
</tbody>
</table>

6.4.3 Factors affecting treatment completion

As shown in Table 6, having community volunteers and not experiencing drug stock-outs were statistically significant factors affecting completion of TB treatment (p-values: 0.00036 and 0.00343) respectively.

Table 6: Treatment completion factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>Odds Ratio (Crude)</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Having Community volunteers</td>
<td>6.02</td>
<td>2.09 – 17.31</td>
</tr>
<tr>
<td>Patient reporting drug stock-out</td>
<td>0.13</td>
<td>0.02 – 0.61</td>
</tr>
<tr>
<td>Patient collects drugs himself/herself</td>
<td>0.86</td>
<td>0.35 – 2.09</td>
</tr>
<tr>
<td>Male sex</td>
<td>0.49</td>
<td>0.21 – 1.12</td>
</tr>
</tbody>
</table>
6.4.4 Reactions of families of tuberculosis patients

About 48.6% of the respondents reported that their families did not react in any way to the news that they had tuberculosis i.e. there was no difference in the way their families treated them before and after they contracted tuberculosis. Twenty six percent of the respondents said that their families subjected them to stigma, while 21.9% of them reported being treated better by their families on learning that they had tuberculosis.

Of those who were treated well by their families, 60% reported being provided with meals; 30% received counseling from their families while 10% said that their families provided them with company.

6.4.5 Types of stigma suffered by tuberculosis patients

Twenty six percent of respondents (27/105) reported being stigmatized by their families. Of the respondents who were stigmatized by their families, 51.9% reported that they were not allowed to share meals with their families during the entire course of their treatment, while 33.3% said that they were labeled HIV/AIDS victims. Seven percent of them were subjected to abuse from their families and another 7.4% were made to leave their homes and seek shelter with relatives.

6.4.6 Effects of stigmatization

Thirty seven percent of the respondents who were stigmatized reported that the stigma they suffered made them think of leaving tuberculosis treatment while 29.6% of them felt like hiding the fact that they had tuberculosis.
6.4.7 Influence of cultural beliefs on TB treatment seeking behaviors

Eleven percent (12/105) of the respondents reported that cultural beliefs prevented them from seeking TB treatment. Of these, 6/105 reported that they thought they had been bewitched, whereas 33.3% thought that they had been poisoned. Another 16.7% of the respondents reported trying traditional treatment before reporting to the health unit for treatment.

6.4.8 Treatment from other sources

About 28% (29/105) of respondents reported getting treatment for TB from other sources. Of these, 55.1% got treatment from traditional healers, 27.5% from drug shops and 17.2% from clinics, in addition to the treatment obtained from the health unit as shown in Figure 1.

Figure 1: Other sources of TB treatment

6.5 Community related factors affecting implementation of CB-DOTS

In this section, both qualitative and quantitative results were obtained from the respondents. A total of ten FGDs were conducted in two villages in each of the five sub-counties where CB-DOTS was being implemented. The findings from these discussions are presented below.
6.5.1 Knowledge on tuberculosis, its treatment and control

Most of the groups had heard about tuberculosis, but the majority of them did not know what its signs and symptoms were, neither did they know about the roles of H/Us and H/Ws in its prevention and control. Quotations from various FFGDs illustrate this. "TB is caused by witchcraft", said a member of one FGD while a member of another FGD in Maya B village reported that: "TB is hereditary and runs in families".

Only a member of one FGD knew what CB-DOTS is and could describe how it is practiced. After explaining to FGD participants what CB-DOTS is, majority of the members said that they prefer it to self-administered treatment. Some of the reasons given for preferring CB-DOTS to self-administered TB treatment were: "The community volunteer ensures that the drug is taken by the patient" and "seriously sick patients may fail to collect drugs from the health units, so CB-DOTS ensures that they do not default from treatment". In another FGD a participant stated that "Patients do not suffer expenses on food and transport" and "If the patient is not observed, he can throw away the drugs and spread disease".

The only reason given by some FGD participants who favored self-administered treatment to CB-DOTS was "We are old enough to follow instructions of taking TB drugs".

None of the groups had received sensitization on CB-DOTS through radio, posters or from H/Ws.

Some members of FGDs said that TB patients are stigmatized in their communities, while others said that TB patients are not stigmatized. One group
member reported that: “We do not want to share food with TB patients because they can spread TB”, while another said: “Those people who claim to have TB are suffering from ‘slim’ (HIV/AIDS).

6.5.2 Cultural factors

Majority of the groups reported that TB patients first seek traditional treatment in the communities and only report to the health units after the traditional treatment has failed. This contributes to late reporting and poor treatment outcome. Many members of FGDs said that: “People who are coughing first take herbs or visit witchdoctors, and only go to H/Us when the cough persists”.

One participant at a FGD in Mparangasi village reported that: “TB is caused by poison”.

It was also reported that in some cases, TB patients are not taken for treatment to the H/Us, in the belief that they are suffering from HIV/AIDS and that TB drugs would be too strong for them and could kill them. “Sometimes we think that TB patients are suffering from HIV/AIDS and they should not take TB drugs because the drugs are very strong and can kill them,” reported a participant.

Many members of FGDs said the belief that TB is caused by witchcraft is common in the communities. They said “Witchdoctors are visited to cleanse the patient of the evil spirits” and “Sometimes, traditional medicines are administered to the patient so that he can vomit out the witchcraft, which is causing the cough, e.g. herbs are pounded and mixed with water for TB patients to drink”. 
6.5.3 Factors interfering with CB-DOTS implementation

Some group participants identified factors that interfere with CB-DOTS implementation in Hoima. These included:

“Community volunteers are not given any incentives to motivate them in their work”. “They also lack means of transportation”.

“Some H/Us lack anti-TB drugs, microscopes and reagents”.

“Some H/Ws treat patients rudely”.

“Some TB patients refuse to take drugs and prefer dying, while others use traditional medicines to treat TB”.

“There is a belief that TB is caused by witchcraft”.

“Some TB patients buy cough syrup, thinking that it can cure TB”.

“Support of local leaders and government to the program is lacking.”

6.5.4 Questions asked by community members

At the end of each FGD, community members were given an opportunity to ask questions. Most of the questions were about tuberculosis, its transmission, treatment, prevention and CB-DOTS. Some of the questions are reproduced below: “Suppose a family member is attacked by TB, can’t other members be affected?” a participant at one FGD in Kiganda village asked. ‘If most people in a family have been attacked by TB should they all go to a health unit for treatment?’ and ‘Does a community volunteer serve the whole village or just one TB patient?’ a group member in Maya A village asked.
6.6 Health system related factors affecting CB-DOTS implementation

One FGD was held with community volunteers in each of the five sub-counties where CB-DOTS is being implemented. An interview was also conducted with key informants in the district. Both quantitative and qualitative findings are presented below.

6.6.1 Waiting time at the health unit

The majority of the respondents (86.7% of TB patients on CB-DOTS) reported that the time they spent waiting for tuberculosis treatment at the health unit was not long, whereas 13.3% of them said that the time they spent waiting for treatment was long.

'Long' waiting times reported ranged from 1 to 5 hours with a mean, mode and median of 2.6, 1.0 and 2.0 hours respectively.

6.6.2 Absence of anti-TB drugs at the health unit

Twenty one point nine percent (23/105) of the respondents reported that there were times when there were stock-outs of anti-TB drugs at the H/U. Of these, 68.2% said that it had happened once; 18.2% said that it had happened twice and 13.6% reported that it occurred three times during the course of their treatment.

6.6.3 Knowledge on tuberculosis and its treatment

Three participants of the FGDs had not been trained before starting work as Community volunteers. Many group members were not giving health education to the communities because of lack of facilitation, while one member said he was giving health education to the community.
Four group members mentioned at least one anti-TB drug correctly, but only one of them knew the correct dosages.

Only two participants of the FGDs knew the schedules of the anti-TB drug whereas the majority did not know the schedules of the drugs.

6.6.4 Community volunteers and their services

About 63% of the respondents [66/105] had community volunteers (CVs). Of these, 40.0% said that the CVs always bring the tuberculosis drugs, while 60% reported that the CVs do not always bring the drugs.

About 71% of the respondents said they sometimes collect TB drugs themselves from the sub-county health worker (SCHW), while 28.6% said that they do not collect the drugs themselves from the SCHW.

Of those who do not go to collect the drugs themselves from the SCHW, 50% said that a relative collects the drugs for them, while 20% said that a neighbor collects the drugs for them. Ten percent of them reported that a friend collects the drugs for them, 20% of them reported that a parent collects the drugs for them as shown in Table 7.

Table 7: Other people reported to be collecting drugs from the SCHWs

<table>
<thead>
<tr>
<th>Person collecting drug</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friend</td>
<td>3</td>
<td>10.0</td>
</tr>
<tr>
<td>Neighbor</td>
<td>6</td>
<td>20.0</td>
</tr>
<tr>
<td>Parent</td>
<td>6</td>
<td>20.0</td>
</tr>
<tr>
<td>Relative</td>
<td>15</td>
<td>50.0</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100</td>
</tr>
</tbody>
</table>
6.6.5 Direct observation of treatment

Forty eight percent of the respondents who were served by community volunteers reported that the volunteers always observe them as they swallowed the anti-tuberculosis drugs, while 34.3% of them are not directly observed. A further 17.9% of the respondents said that the volunteers observe them sometimes as they swallow the drugs.

6.6.6 Volunteer motivation

Some group members reported that they are not motivated in any way, while others said they get some motivation in their work. The following sources of motivation were mentioned: "We get motivated when patients express appreciation for our work" and "Financial rewards from the office of the DDHS also motivate us" reported one participant at one FGD in Kiziranfumbi sub-county. Another group member in Buhanika sub-county stated: "When patients recover, we get motivated in our work".

Participants at FGDs in Kitoba and Kabwoya sub-counties said that local leaders support them in their work on mobilization, whereas those in Kiziranfumbi, Kigorobya and Buhanika sub-counties said that local leaders do not support their work in mobilization.

Four group member in Kigorobya sub-county had been supervised at least once, while one member had not been supervised at all.
6.6.7 Cultural and religious practices interfering with CB-DOTS implementation

All FGDs reported cultural practices that are interfering with CB-DOTS implementation. These included: “Sharing of cups and food utensils”; “There is a misconception in the communities that tuberculosis is caused by witchcraft”; “Some people believe that tuberculosis is inherited and cannot be treated using western medicine”.

A religious belief that was identified to be interfering with TB control was that: “Tuberculosis can be cured by drinking ‘holy’ water and by praying for the patients, instead of going for medical treatment”. This belief is found among the Bisaka sect.

6.6.8 Other factors interfering with CB-DOTS implementation

These were identified by all the five FGDs in Kitoba, Kabwoya Kiziranfumbi, Buhanika and Kigorobya sub-counties. They included: “Communities have not been adequately sensitized on CB-DOTS”; “Community volunteers are not motivated”; “Health workers do not regularly supervise community Volunteers”; “Some community volunteers are not trained” “Review workshops on CB-DOTS are not held at the lower level”; “There is no facilitation for community volunteers to enable them work”; “Local leaders and government are not putting much emphasis on CB-DOTS.”

The DDHS also reported that; “Lack of microscopes and reagents in H/Us, inadequate support supervision of community volunteers, absence of monitoring and evaluation for CB-DOTS, lack of fuel between January and March 2003 and the lack of refresher training for health workers on CB-DOTS interferes greatly with its implementation.”

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The DTLS said: “Health workers perceive CB-DOTS as a vertical program of the National Tuberculosis and Leprosy Programme” and “Lack of laboratory staff at some health units is also a problem in implementation.”

6.7 Suggestions to improve CB-DOTS implementation in Hoima

6.7.1 Suggested solutions to improve CB-DOTS

Thirty seven percent of CB-DOTS patients interviewed reported that awareness on CB-DOTS should be increased, whereas 32% of them said that incentives should be provided for tuberculosis patients on DOTS and community volunteers to improve CB-DOTS implementation. Eighteen percent of the patients said that more community volunteers should be trained to improve CB-DOTS, while 12% of them said that health workers should not be rude to TB patients.

Strategies suggested by the different FGDs on how to improve CB-DOTS implementation among the communities included: “Increase awareness on TB and its treatment by using radio programs, drama and posters at H/Us”. “TB patients should be supported by providing them with food, just as is done for HIV/AIDS patients”. “Community volunteers should be motivated financially and through training”.

“Provide adequate drugs at H/Us for TB treatment”. “Community members should be sensitized to identify patients and refer them for treatment”. “Community volunteers should be the relatives of a patient, so that they can provide better care for the patient”. “Involve local leaders e.g. local councils in CB-DOTS implementation”.

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“Communities should be intensively sensitized on CB-DOTS” - said one group member in Kigoroya sub-county. Previously, only sub-county leaders had been sensitized – community members had been left out.

One community member at an FGD in Kitoba sub-county suggested “Health workers should supervise Community Volunteers regularly” and “Community Volunteers should be motivated and facilitated to do their work”

In Kabwoya sub-county, the participants made the following suggestions: “Government and local leaders should put more emphasis on CB-DOTS because it is patient friendly”; “Community Volunteers should be trained before starting to work”; and “Review workshops on CB-DOTS should be conducted at lower level, with participation of Community Volunteers”.

CHAPTER SEVEN

7.0 DISCUSSION

7.1 Socio Demographic characteristics of respondents

Up to 60% of the patients are in the economically active age group of 15 – 50 years old and the majority of the TB patients are male. These findings are similar to those of Gresely (2002). He reported in a study in Guayas, Ecuador that 77% of new pulmonary smear positive TB patients were between the ages of 15 – 50 years and 65% of the new pulmonary smear positive patients were males. Gimon (1993) also found that the majority of TB patients (82%) were in the economically productive age group of 16 to 45 years. Community sensitization messages on CB-DOTS could specifically target this group to have an impact on TB control in the community.

7.2 CB-DOTS implementing sub-counties

Only five sub-counties in the district were found to be practicing CB-DOTS, yet SCHWs had been trained in all sub-counties, prior to the beginning of CB-DOTS implementation. Several reasons were advanced for this anomaly. The SCHWs in the sub-counties that were not practicing CB-DOTS are lazy and lack commitment to their work. Some of the SCHWs want to be paid separate allowances for practicing CB-DOTS, yet CB-DOTS is supposed to be integrated with other health programs e.g. immunization, water and sanitation programs. A single allowance is supposed to be paid for an outreach activity, which is supposed to be integrated. Other SCHWs in the district have not fully understood the principle of integration of health programs (Hoima DDHS, 2003). CB-DOTS could be expanded to the remaining six sub-counties if communities are sensitized on it and the SCHWs change their attitude about it.
7.3 Distance to health unit of treatment

Most patients lived within <5 Km of their health unit of treatment, which is the distance recommended in the Health Sector Strategic Plan (HSSP) (MOH, 2001), yet many of them complained of transport to the health units being a problem to them. This could be because many patients delay to go for treatment until the time when they are seriously sick, by which time they are too weak to walk to the health unit, necessitating motorized transportation, which is costly. Besides, many of the patients are too poor to afford transportation to the health units. These findings tally with those from a similar survey in Kiboga district of Central Uganda, which showed that TB patients traveled long distances (median 4.5 Km, range 1-21 Km) to the health unit from their residence; 63% of the Kiboga patients felt that this distance was long (Adatu et al, 1998-1999).

7.4 Default from TB treatment

Up to 8.6% of the respondents were TB treatment defaulters. This figure is much higher than that of 1.4% and 0% found in a CB-DOTS survey in Kiboga district of Uganda (Adatu et al, 1998-1999) and Hlabisa, South Africa respectively (Colvin et al, 2003). The main reason given by the patients for defaulting from treatment was that they felt better after taking anti-TB drugs for a few days. Clearly, the health workers need to emphasize to the patients that feeling better after a few days of anti-TB treatment does not mean that one is cured. The practice only leads to emergence of MDR forms of TB and spread of TB to other community members. The communities also need to be empowered to follow up and refer TB patients who have defaulted from treatment to the health units. Health workers should be trained on management of TB drug reactions, because some TB patients defaulted from treatment because of the adverse effects of the
drugs. They should also educate patients about TB drugs and their side effects. A study in Ethiopia (Tekle et al, 2002) found out that inadequate knowledge about treatment duration and side effects was one of the factors contributing to the high rates of treatment default among DOTS patients. Wares et al (2003) also discovered in a study in Nepal that the most common reasons given by TB patients for stopping treatment were side effects of drugs, H/W mistakes or behavior and health service failure. Drug reactions are likely to continue to be a big problem because of their association with HIV-related tuberculosis. Community members should be encouraged to seek health care early to avoid becoming too ill, which also leads to default of TB treatment. In contrast, Gimon (1993) found out that the main reason for patients to default from anti-TB treatment was lack of money for transport to the H/U.

7.5 Risk factors for defaulting from TB treatment

The absence of a CV in an area was the biggest risk factor for defaulting from TB treatment. Patients who did not have CVs had to go to collect the anti-TB drugs themselves from the SCHW. Perhaps they found it cumbersome to collect the drugs themselves, leading to the high chances of treatment default among them. Patients who did not have CVs also had less chances of receiving health education on the importance of adhering to TB treatment. This could also explain the high default rates among them.

Patients residing over 5km from the H/U were also more likely to default from TB treatment. Transport to the H/U would most likely have been a problem among this group because of the long distances involved and lack of funds for transportation. Wares et al (2003) found out in a study in Eastern Nepal that
patients who were not adhering to TB treatment had long distances to travel to a
health facility (p<0.001), and fewer patients had been informed by health workers
about the consequences of not completing treatment. All TB patients should be
sensitized on the importance of completing treatment. Even if they live far away
from the H/U, they should be encouraged to come for treatment.

Patients who reported a long waiting time at the H/U were also more likely to
default from TB treatment. Such patients could have felt frustrated by what they
perceived as poor quality services at the H/U and decided to abandon TB
treatment. Another study done in Vietnam (Buu et al, 2003) showed that
defaulting from TB treatment was mainly caused by some patients’ negative
perceptions of working procedures and/or treatment strategy in the National
Tuberculosis programme. He recommended that the NTP needs to improve
patients perceptions of the treatment strategy and develop more user-friendly
services that enable more patients to access treatment. Likewise, the services at
the H/Us in Hoima could be re-organized such that TB patients get treatment
faster.

Also, patients who used other drugs in addition to those provided at the H/U
were more likely to default from TB treatment. These patients might have felt that
the anti-TB drugs given at the H/U were not effective. Alternatively, poor quality
of services at the H/Us could have forced these patients to try treatment from
other sources. The onus is therefore on the Hoima district health authorities to
ensure that TB patients are informed on the necessity of getting treatment from
H/Us. Health workers should also be sensitized to serve patients humanely and
quickly to avoid long waiting times at H/Us.
Stigma towards TB patients was not found to be a significant risk factor for defaulting from treatment. Although 37% of the TB patients who were stigmatized reported thinking of leaving tuberculosis treatment, most of them did not apparently do so. All the same, it is essential to sensitize the communities to avoid stigma towards TB patients, as it could force them to abandon treatment in the long run. A study on CB-DOTS study in Thailand also reported ‘felt stigma’ among TB patients (Ngamvithayapong J et al, 2001). Interventions to reduce TB and AIDS stigma in the community are needed. Stigma can be overcome through community sensitization and openness about the problem of HIV and TB. Community volunteers and health workers should treat the diagnosis of tuberculosis with the same sensitivity and confidentiality they would reserve for sexually transmitted diseases and HIV. Health workers must take time to discuss the social ramifications of the disease. If the patient is not infectious, reassure him/her that full social participation should continue as before the diagnosis. Family members should also be reassured that the patient can participate in meals and family activities without the danger of infecting others (Tao Kwan-Gett, 1998).

Having financial problems was not a risk factor for defaulting from anti-TB treatment. This is so because diagnostic and curative services for TB are provided free of charge by the government of Uganda. Hence financial problems faced by the TB patients would, as expected, not lead to default from TB treatment.
7.6 Treatment completion factors

Patients who had CVs were more likely to complete treatment than those that did not have one. The CV delivers drugs from the SCHW to the TB patient and observes the patient as he/she takes the drugs. This ensures that the TB patient takes the drugs and completes the full course of treatment.

Patients who did not report drug stock-outs at their H/U of treatment were also more likely to have completed treatment than those that reported drug stock-outs. This scenario is expected because a TB patient cannot be expected to complete treatment if there are no anti-TB drugs at the H/U. It is important that Hoima district and NTLP institute measures to ensure prompt supply of anti-TB drugs to health units once they get finished or expire. This will prevent treatment default by patients and emergence of MDRTB.

TB patients who collected anti-TB drugs themselves from the SCHW were more likely not to have completed treatment. Perhaps patients who collected their own drugs eventually stop doing so due to the long distances involved, or due to the high costs of transport.

7.7 Community volunteers and their services

Thirty six point two percent of the TB patients did not have a community volunteer inspite of having been registered in the TB register as CB-DOTS patients. This anomaly could not be explained.

Even among those TB patients who had community volunteers to supervise their treatment, up to 60% reported that the community volunteer brought the drugs irregularly. They either had to go to collect the drugs themselves, or another
person had to do it. The fact that most of the community volunteers in Hoima district never got the initial training could explain their lack of seriousness in performing their duties. Untrained community volunteers are unlikely to know the dangers of unsupervised TB treatment, which include treatment default, emergence of MDR TB, infection spread to other community members and death of a patient. Lack of commitment by community volunteers and lack of facilitation as mentioned below could also have led to this scenario.

On the other hand, this also provides an opportunity for Hoima district to experiment with using community volunteers who are relatives or neighbors of a TB patient, since a good number of either relatives or neighbors are already supervising TB patients. Besides, Manders et al (2001) in a study in Malawi found out that guardians can supervise TB treatment just as well as H/Ws during the intensive phase of treatment.

Less than half of the CB-DOTS patients who have CVs are directly observed by the volunteers as they swallow the anti-TB drugs. Patients who are not directly observed as they swallow anti-TB drugs are less likely to have treatment success. Direct observation of treatment goes beyond merely observing the patient as he/she swallows drugs – it fosters a trusting relationship between the patient and the CV. Tuberculosis physicians have observed that the establishment of a good and trusting patient – health worker relationship is essential to success of treatment (Sbarbaro 1990/1991).
7.8 Reactions of community members and families of TB patients

Support of communities and family members is vital to encourage TB patients initiate and complete the course of treatment. Communities and family members can encourage TB patients by providing food, counseling and company. Subjecting TB patients to abuse as reported by some of the patients in Hoima can only make an already bad situation worse.

This is evidenced by the fact that 37% of the patients who were stigmatized by their communities and family members reported considering abandoning TB treatment, while 29.6% of them wanted to hide the fact that they had tuberculosis. Such actions can only lead to default of treatment, emergence of MDRTB and infection of more community members with MDRTB (Okot Nwang, 1993). Lack of support from families of TB patients has been found to be associated with a higher chance of defaulting from treatment (Tekle et al, 2002). Communities and families of TB patients should be sensitized to be humane and supportive towards TB patients. They need to be told that TB can no longer be infectious after two weeks of intensive treatment in the health units. So TB patients should be provided with adequate care, counseling and support when they return to continue with treatment in their communities.

7.9 Cultural beliefs and other sources of treatment

Cultural beliefs prevented some patients from seeking treatment – they thought that they had either been bewitched or poisoned. Others initially tried traditional treatment and only reported to the health unit once it had failed to cure them. Traditional beliefs are common in all areas of Uganda and beliefs about the causes of sicknesses vary. While it may be difficult to eradicate traditional beliefs
from our communities, people in the communities should be empowered to know the signs and symptoms of TB so that they seek treatment early.

Traditional healers command a lot of respect and prestige in our communities. They could also be used for TB treatment and control by training them to work as community volunteers. Community members are more likely to follow the advice given by traditional healers than that given by other people, since they are respected and are usually the first ones to be consulted for healthcare in the communities. A similar approach is already being piloted in Hlabisa, South Africa where traditional healers provide an additional option for CB-DOTS supervision (WHO, 2001). And the WHO supports integration of traditional medicine into modern health care systems (Akerere, 1984).

Besides, some TB patients reported getting additional treatment from other sources – the majority (55.1%) having got it from a traditional healer, while others got treatment from private clinics and drug shops. Thus, it is important to involve all these providers of health care in TB treatment and control if the district is to succeed in CB-DOTS implementation. Modalities for collaboration with the various health care providers have to be worked out first.

Collaboration has the advantage of enabling modern health care workers to influence other providers of treatment e.g. traditional healers to change for the better.

**7.10 Enabling factors for tuberculosis treatment**

Counseling from health workers, community and family members made it possible for many of the respondents to initiate and maintain TB treatment. Availability of anti-TB drugs at health units, nearby health units and support from relatives also made it possible for patients to continue with TB treatment.
Awareness on CB-DOTS needs to be raised in the communities to improve its implementation.

Health workers at the health units must treat TB patients politely. Provision of incentives for CVs could also improve CB-DOTS implementation in the district.

7.11 Community related factors

7.11.1 Knowledge on tuberculosis, its treatment and control

The fact that many group members did not know what tuberculosis is, its signs and symptoms and its cause suggests that community sensitization on tuberculosis has either been inadequate or nonexistent in the district. The communities were not involved right from the initial stages of CB-DOTS implementation. Although the DTLS reported sensitizing sub-county leaders on CB-DOTS, the message failed to reach the grass roots – it was assumed that sub-county leaders would take the message to the people in their communities, but they did not do so. The DTLS should find ways of ensuring that all the communities know about tuberculosis and CB-DOTS.

Health workers should be urged to sensitize community members in their catchment areas about TB and CB-DOTS. Opportunities to take for such sensitizations include immunization outreaches and Local Council (LC) meetings. Other avenues that could be used for community mobilization on CB-DOTS include Radio, posters and drama.

Local political and religious leaders should head the sensitization drive, so that the masses can be convinced.

Community involvement has the advantage of enabling the SCHWs make contact with the communities at parish level, asking the communities to identify a
community volunteer and then training and supervising this community volunteer (Adatu et al., 1998-1999). Communities and their leaders should be involved more in the planning and implementation of CB-DOTS, so that they give it the seriousness it deserves and feel a sense of ownership of the program.

CB-DOTS is clearly very popular among the community members by the fact that after explaining to them what it entails, most of them said that they prefer it to self-administered treatment. They were able to enumerate its many advantages over self-administered treatment. The Kiboga study in Uganda showed that CB-DOTS had the advantages of less costs per patient treated, shorter length of hospital stay and good acceptability from patients as they could stay with their families, continue to work and spend less money on care (Adatu et al., 1998-1999). These are the same advantages mentioned by the communities in Hoima.

7.11.2 Role of incentives in CB-DOTS implementation

The CVs deserve incentives for doing CB-DOTS work in the communities, considering the sacrifices that they make. The incentives do not necessarily have to be financial. Community volunteers can be motivated through training, adequate support supervision and recognition as is done through the “Yellow Star” program for health workers in the Uganda Ministry of Health (MOH, 2001). Facilitation could also be availed to them in form of bicycles for transportation, which should be returned to the H/U once a patient has completed treatment. In this way, the district can avoid buying a new bicycle for every TB patient treated.

Supporting TB patients by providing food and other incentives would be too costly and is not feasible in our circumstances, although some studies show that
providing various forms of incentives to TB patients increased adherence to DOTS in the United States (Ngamvithayapong J, 1997).

Drug shops in the district should be adequately supervised to ensure that qualified personnel staff them. This will eliminate the problem of TB patients buying cough syrups, thinking that it can cure TB.

7.11.3 Cultural and religious practices
The practice of sharing cups and food utensils contributes to the spread of TB as noted by FGDs with CVs and the key informant interviews. Misconceptions that TB is caused by witchcraft and can be inherited need to be corrected through intensive health education. Members of the Bisaka sect should be persuaded to understand that TB can only be cured by medical treatment, and not by drinking 'holy' water. If they still refuse to seek medical treatment after various attempts have been made to convince them, the district authorities may have to resort to radical measures like banning the religion.

7.12 Health systems related factors affecting CB-DOTS implementation

7.12.1 Knowledge on tuberculosis and its treatment
Many CVs involved in FGDs stated that they (CVs) had not been trained before starting to work in the communities. No refresher trainings have been conducted for CVs and H/Ws on CB-DOTS implementation. These factors could explain why some FGD participants could not even mention one anti-TB drug – some of them did not even know the schedules of administering the anti-TB drugs. One wonders how they were administering the anti-TB drugs to their patients!
What is rather encouraging is that some participants could correctly describe the signs and symptoms of TB. Hence it might be easy to train them. Regular support
supervision and monitoring and evaluation of the CB-DOTS program should supplement training. A CB-DOTS program in Bangladesh involved training all levels of staff involved in implementation of DOTS in the field and achieved a cure rate of 75%. Institution of a rigorous monitoring system for recording the progress of individual patients and the system of regular quarterly reporting on case finding /treatment outcomes identifies weaknesses in program implementation (Kumaresan et al, 1998). Such systems for CB-DOTS monitoring and patient reporting must be instituted in Hoima. This will enable district health managers and CB-DOTS supervisors to work with staff in the field to overcome weaknesses that are discovered in the system.

The Office of the DDHS Hoima is to be commended for providing guidelines to the CVs and for providing motivation for some of them. These are good efforts at facilitating CB-DOTS in the district.

Some community volunteers derive motivation from their work, especially if a patient recovers from TB. This is a sign of commitment. Similar findings were reported in a CB-DOTS study in Nepal: the staff reported that as the patients’ health improved, they felt their own worth and self esteem grow (Wares et al, 2001).

7.12.2 Availability of services

Service availability has sometimes been constrained by inadequate funding, erratic and sometimes late release of Primary Health Care (PHC) funds by the central government. Support supervision for CB-DOTS had to be halted between January and March 2003 due to the late release of funds. The district authorities should always remind the Ministry of Finance to release funds early.
Microscopes and reagents are not available in some of the Health Center threes (HCIIIIs) which should be TB treatment centers. Patients have to travel to Hoima Regional hospital for diagnosis, which is far away. This necessitates transport expenses. The district should lobby to get enough drugs, microscopes and reagents for at least all HCIIIIs so that TB treatment services are brought nearer to the people.

Inadequate staffing in some of the health units also means that TB treatment services are sometimes not available. Staff members should be taught to re-organize their work, so that they work more efficiently (Ngamvithayapong J, 2001). For example, SCHWs could combine CB-DOTS outreaches with those for maternal and child health services. This will in turn eliminate the need to pay separate allowances for CB-DOTS outreaches – it is both cost saving and convenient.

The vertical nature of the NTLP sometimes makes health workers in the H/Us to assume that TB control is solely the work of the DTLS, SCHWs and the CVs, which is not true. They sometimes distance themselves from CB-DOTS implementation. CB-DOTS needs to be implemented in a holistic manner, by binging aboard all stakeholders if it is to succeed in the district. In Ndola, Zambia, integration of the DOTS strategy for TB control with an existing HIV/AIDS home care programme led to an improved TB programme performance (Miti et al, 2003). Adoption of a similar strategy in the CB-DOTS programme implementation in Hoima district might give better results.

Some SCHWs refuse to co-operate with the health unit staff. Some of them even refuse to be supervised by the health unit incharges, claiming that they are
answerable only to the DTLS. SCHWs in the district need to co-operate with the health unit staff in CB-DOTS implementation. They need to should realize that it is only through co-operation that success can be achieved in TB control.

Prompt payment of outreach allowances to the SCHWs could motivate them further. As noted above, the allowances need not be for CB-DOTS outreaches only, but for outreaches that are integrated. The sub-counties could provide the extra funding needed to procure fuel as their contribution to TB control in the sub-counties. This would make the sub-counties feel a sense of ownership of the program and ensure better supervision.

Parish mobilizers should be trained in the communities. They will help in all forms of mobilization for all sectors, including health.
CHAPTER EIGHT

8.0 CONCLUSION AND RECOMMENDATIONS

8.1 Conclusion

Risk factors for defaulting from treatment among CB-DOTS patients in Hoima district are: not having a community volunteer, long waiting time at the health unit and distance of over 5km from the health unit.

Tuberculosis patients who have community volunteers and those who do not experience stock-outs of anti-TB drugs at the health unit of treatment are more likely to have completed treatment. CB-DOTS patients who collect anti-TB drugs themselves from the SCHW are more likely not to complete treatment.

Most community volunteers in the district are not trained and do not take their duties seriously; hence TB patients are not adequately counseled on drug reactions and treatment compliance. This leads to treatment default among TB patients. Community volunteers also lack motivation and facilitation, leading to poor supervision of TB patients on CB-DOTS.

The absence of diagnostic materials and adequate amounts of drugs at some health units is still a problem to CB-DOTS implementation in the district. Some of the H/Us are not adequately staffed.

The perceived vertical nature of NTLP and CB-DOTS among health workers in the district interferes with CB-DOTS implementation.

SCHWs in the district have generally not performed very well in implementing CB-DOTS.
Cultural and religious beliefs in the communities interfere with CB-DOTS implementation.

Counseling and support from health workers, community and family members encouraged many CB-DOTS patients to seek treatment.

Community sensitization on CB-DOTS is not adequate. Most community members do not know what CB-DOTS is. Community members prefer CB-DOTS to self-administered treatment, once they get to know what it is, and how it is practiced.

Relatives of CB-DOTS patients sometimes collect TB drugs from the SCHWs instead of the community volunteers.

Political and civic society support, though present is still not enough for CB-DOTS.

8.2 Recommendations

8.2.1 Health systems related recommendations

The DHT should make sure that all TB patients have CVs. All CVs should be trained before they begin to serve the communities. The district should also endeavor to motivate and facilitate the community volunteers.

The DDHS Hoima should ensure that there are adequate supplies of anti-TB drugs and diagnostic materials at all times in all TB treatment centers in the district.
Health workers should be sensitized on humane handling of patients by the DDHS. This measure will eliminate the problems of stigma suffered by the TB patients and the harassment they get from health workers.

SCHWs need to be re-oriented to understand that CB-DOTS has to be integrated with other health programs. SCHWs should also cooperate with other staff at the health units.

There is need to recruit more staff in the health units, especially laboratory technicians to man some of the diagnostic centers for TB in the district.

### 8.2.2 Community related recommendations

The office of the DDHS Hoima should sensitize community members on TB and CB-DOTS.

Members of the *Bisaka* sect should be persuaded to seek medical care when they fall sick. This could be achieved by designing a specific health education campaign targeting members of the *bisaka* sect.

Traditional healers could be integrated into TB care by educating them on TB care and timely referral of suspected TB cases. The district could also pilot the use of relatives as community volunteers because many relatives of TB patients are already administering TB treatment to patients.

Health workers and community members should be encouraged to continue offering more counseling and support to TB patients in the communities. Such an attitude encourages more patients to seek treatment.

Political, civic and community leaders in the district should offer more support to TB control and CB-DOTS in the district by mobilizing the communities and advocating for allocation of more local resources to it, to ensure sustainability.
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APPENDICES

APPENDIX I: SEMI-STRUCTURED QUESTIONNAIRE

1. Id no----------------Date----------------District---------------------

2. Name of interviewer-----------------------------------------------------

3. Age---------------------------------------------------------------

4. Sex Male-----------------Female---------------------------

5. Tribe a) Munyoro------b) Mukiga------c) Muganda------d) Alur------e) Other
   (specify)-----------------------------------------------------------------

5. Village-------------------------------------------------------------

6. Parish-------------------------------------------------------------

7. Sub-county-----------------------------------------------------------

8. County--------------------------------------------------------------

9. Residence (tick where appropriate)
   a) Urban---------------b) Rural--------------c) Peri-urban----------

10. Marital status (tick)
    a) Married-----b) Single-----c) Widow-----d) Divorced-----e) Widower-----

11. Religion a) Catholic------b) Protestant------c) Muslim-----
    d) Other (specify)-----------------------------------------------------------------

12. Education level a) None------b) Primary------c) Secondary------d) Tertiary--

13. Occupation a) Peasant------b) Business------c) Civil servant------d) Other
    (specify)-----------------------------------------------------------------

14. When were you diagnosed with tuberculosis (Month and Year)----------

15. From which health unit are/were you receiving treatment?
    (Name)-----------------------------------------------------------------

16. How far is the health unit from your home? (km)---------------------

17. What is the status of your tuberculosis treatment? (Tick one)
a) Completed treatment
b) Defaulted
c) Still on treatment
d) Retreatment

18. If you have defaulted from treatment what was the reason for defaulting?
   a) Adverse effects of the TB drugs
   b) Drugs are not effective
   c) I felt better after taking drugs for a few days
   d) Long duration of treatment
   e) Available alternative TB treatment
   f) I was too ill to take TB drugs
   g) Other (specify)

19. Was money a limiting factor as far as your access to tuberculosis treatment was concerned?
   a) Yes
   b) No

20. If yes what was the nature of the problem?
   a) No money for transport to H/unit
   b) No money for investigations
   c) No money for buying TB drugs
   d) No money for buying food
   e) Others (specify)

21. Is the time you spend waiting for treatment at the H/unit too long?
   a) Yes
   b) No
22. If yes, for how long do you normally have to wait for treatment at the H/unit? (Minutes)-----------------

23. Do health workers ask you to pay for tuberculosis treatment?
   a) Yes-----------------  b) No------------------

24. If yes, how much do you pay each time you go for review? [Ushs]-----------------

25. Are health workers rude to you when you go for tuberculosis treatment?
   a) Yes-----------------  b) No------------------

26. If yes, what do they do to you? (Specify)

27. Do you have a CB-DOTS volunteer to supervise your treatment?
   a) Yes -----------------  b) No ------------------

28. Does the CB-DOTS volunteer always bring the tuberculosis drugs?
   a) Yes -----------------  b) No ------------------

29. Do you sometimes have to go to collect drugs from the Sub-county supervisor yourself?
   a) Yes -----------------  b) No ------------------

30. If no, who collects the tuberculosis drugs apart from the CB-DOTS volunteer?
   a) A neighbor -----------------
   b) Relative ------------------
   c) Friend ---------------------
   d) Parent ---------------------
   e) Other (specify) --------------

31. Does the CB-DOTS volunteer always observe you as you swallow anti-tuberculosis drugs?
   a) Yes --------------- b) No --------------- c) Sometimes-------------------
32. Were there some times when there were no TB drugs at the health unit?
   a) Yes------------------------       b) No------------------------

33. If yes, how many times did this happen?
   a) Once --------------b) Twice---------c) Three times -----------d) Other (specify)---

34. What was the reaction of your family, relatives and community members towards you when they knew that you had tuberculosis?
   a) None (there was no difference between the way they treated me before and after I had TB) ------------------------------
   b) I was treated worse (stigmatized) ------------------------------
   c) I was treated better ----------------------------------------
   d) Other (specify)---------------------------------------------

35. If you were stigmatized, what actually happened?
   a) I was made an outcast from the community -----------------
   b) I was not allowed to share meals with other family members ------
   c) I was labeled a HIV/AIDS victim -----------------------------
   d) Subjected to abuse from the community/family ----------------
   e) Others (specify) ---------------------------------------------

36. Did such treatment/attitude from community and family members make you think about leaving tuberculosis treatment?
   a) Yes --------------       b) No ------------------------

37. Did such treatment/attitude make you feel like hiding the fact that you had tuberculosis?
   a) Yes --------------       b) No ------------------------
38. If you were treated well by community and family during tuberculosis treatment, what actually happened?
   a) Provision of nourishing meals
   b) Counseling and comfort from community members
   c) Company from family/community
   d) Others (specify)

39. Did the cultural beliefs of your community prevent you from seeking TB treatment?
   a) Yes
   b) No

40. If yes, how?

41. Apart from the TB drugs provided at the health unit, did you get any other drugs for TB treatment from other sources?
   b) Yes
   b) No

42. If yes, please name the drugs
   a) 
   b) 
   c) 

43. Where did you obtain the drugs from? (source)
   b) Traditional healer
   c) Witch doctor
   d) Drug shop
   e) Clinic
   f) Other (specify)

44. Are there any factors that made it easier for you to get TB treatment?
   b) Yes
   b) No

45. If yes, list them
46. Do you believe the CB-DOTS approach is a useful strategy in treating tuberculosis?  
   a) Yes---------------------  
   b) No---------------------  

47. If yes, what do you think could be done to improve CB-DOTS implementation in your community?  
   a) Increase awareness on TB -------------------------------  
   b) Provide incentives for TB patients (transport, food, etc) ------------------  
   c) Train more CB-DOTS volunteers -------------------------------  
   d) Health workers should not be rude to TB patients ------------------  
   e) Others (specify) -------------------------------  

48. If no, why do you think CB-DOTS is not a useful strategy? List reasons  
   -----------------------------------------------  
   -----------------------------------------------  
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APPENDIX II: FGD GUIDES FOR COMMUNITY VOLUNTEERS

- Date-----------------------
- Introductions
- Words of welcome by principal investigator; introduction of research topic, objectives and methods. Assure respondents that strict confidentiality will be observed and information obtained will be used only for the purposes of the study. Encourage them to feel free and participate lively in the discussions.

Discussion

**What factors hinder your work in CB-DOTS in the community?**

Were you trained before starting to work?

Do you know the dangers of TB if not treated?

Why is it important to trace contacts and do active case finding?

Do you give health education to TB patients and the community?

If yes, how frequent and what opportunities do you utilize? E.g. funerals, home visits, church/mosque functions, drama.

What is TB?

What is the importance of early diagnosis and treatment - benefits of treatment to the patient and the community.

Knowledge of TB drugs, dosages and schedules.

Are you supervised at all?

If so by who and how frequent? What are you normally supervised on?

Do you receive any motivation in doing your work?

If yes, what motivation e.g.

1. I am happy when a patient appreciates my work.
2. Financial rewards given by TB/Leprosy programme for work well done.

3. Material rewards.

4. Provision of transport/ fuel for work.

Are TB drugs supplied to you regularly?
Are there periods when there are no drugs?
Are you given guidelines for CB-DOTS to follow?

Do you think laziness on your part interferes with your work?
Is it what you perceive as heavy workload that is interfering with your work?
Are you rude to your patients? Do you show empathy to your patients?
What about the attitude of the local community leaders – Do they support your work in mobilization/health education?

Are there any cultural practices in your community that interfere with TB control?
If so what are they? E.g. sharing of cups/food utensils; the belief that TB is caused by witchcraft and can only be cured by witch doctors.
What about religious beliefs e.g. sick people should not be taken for treatment but prayed for instead?
Does poor planning of your work result into poor CB-DOTS implementation?

What factors make your work easier with CB-DOTS?
Training on importance of health education, contact tracing, strict adherence to treatment, drug dosages, schedules, reactions.
Support supervision – frequent, thorough.
Motivation – financial, material, appreciation of service by patients, provision of transport, training.

Provision of treatment guidelines.
Monitoring and evaluation workshops.

Policy framework – emphasis on CB-DOTS.

Regular, prompt supply of drugs, logistics.

Diligence, hardworking.

Empathy, welcoming to patients.

Support of local community leaders.

Absence of restrictive food taboos – patients given plenty nutritious food.

Separate food servings for family members.

Religious beliefs.

Cultural practices.

Make suggestions to improve CB-DOTS implementation in your community.
APPENDIX III: FGD GUIDES FOR COMMUNITY MEMBERS

- Date:------------------------
- Particulars of participants i.e. name, sub-county, village
- Introductions
- Words of welcome by principal investigator; introduction of research topic, objectives and methods. Assure respondents that strict confidentiality will be observed and information obtained will be used only for the purposes of the study. Encourage them to feel free and participate lively in the discussions.

Societal factors
- What is tuberculosis? Its signs and symptoms, treatment, the role of health units, health workers.
- What is CB-DOTS?
- How is it practiced?
- What mode of Tuberculosis treatment do you prefer – CB-DOTS or self-administered treatment?
- Give reasons for preferring either mode of treatment.
- Sensitization/Awareness – radio, posters, health workers, etc – were you sensitized on CB-DOTS?
- Stigmatization of tuberculosis patients – is it practiced?
- Cultural factors – belief that TB is caused by witchcraft, patients not taken for treatment, etc
- Administration of traditional medicines to tuberculosis patients – is it done?
- Late reporting for treatment/poor health seeking behavior (Yes/No).
- What factors do you think make implementation of CB-DOTS easier in your community? (sensitization, community participation, support to TB patients, co-operation from community volunteers, etc.........probe for more factors)

- What factors interfere with CB-DOTS implementation in your community (Lack of motivation for community volunteers, inadequate community sensitization on TB, cultural beliefs (specify), religious beliefs, unco-operative and rude health workers, etc............probe for more factors)

**Suggest ways of improving CB-DOTS implementation in your community.**
APPENDIX IV: KEY INFORMANT INTERVIEW GUIDE

Date----------------------------------------

Designation of person interviewed----------------------------------------

Interviewer----------------------------------------

Introductory remarks
I am from the Institute of Public Health, Makerere University. I am doing a study on the factors, which affect implementation of CB-DOTS in Hoima and Kibale. I request you kindly to provide me with information concerning implementation of CB-DOTS in Hoima and Kibale districts.

I am carrying out this study to identify the factors that affect implementation of CB-DOTS in Hoima and Kibale district.

The information I will generate from this study will help our district officials to plan for better implementation of CB-DOTS in these districts.

I promise to hold the information given to me in confidence.

What are the factors that could be interfering with the implementation of CB-DOTS in Hoima district? Could it be;

• Inadequate/poor supervision of health workers and CB-DOTS volunteers.

• Lack of monitoring/evaluation.

• Inadequate funding.

• Lack of political support.

• Absence of an enabling policy.

• TB not a district priority.

• Lack of drugs /equipment.

• Inadequate staffing.

• Staff not trained in TB management.

• No TB treatment guidelines.
What factors have made CB-DOTS implementation easier in this district.

- Adequate funding.
- Training of staff.
- Regular provision of drugs/supplies.
- Adequate supervision.
- Political support.
- Community sensitization/health education.
- Enabling policy environment.

What suggestions do you have for improving CB-DOTS implementation in this district?
APPENDIX V: CONSENT FORM

The office of the DDHS Hoima is doing a study on the factors affecting implementation of CB-DOTS in Hoima district. I am requesting you to kindly participate in the study. The findings of this study will be used to improve CB-DOTS implementation and TB control in Hoima district. Any information obtained from you will be used only for the purposes of the research and will be kept strictly confidential. You are free to stop the interview at any stage if you no longer wish to answer the questions.

DR. AMANDU K LINUS
Principal Investigator

.................................................. give permission to Dr. Amandu to ask me questions related to the above study. I have clearly understood the objectives of the study. He has made it clear to me that this study is voluntary, strict confidentiality will be maintained and I will not be victimized for any answers given.

Signed............................................

Witness...........................................

Date.............................................