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TUBERCULOSIS AND COMPENSATION: A STUDY OF A SELECTION OF BASOTHO MINEWORKERS FROM MASERU DISTRICT

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A research report submitted to the Faculty of Health Sciences, University of the Witwatersrand, in partial fulfilment of the requirements for the degree

Of

Masters of Public Health

Johannesburg, 2004

DECLARATION

I, Lugemba Budiaki declare that this research report is my own work. It is being submitted for the degree of Masters in Public Health in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other University.

18th day of April 2005

DEDICATION

En la mémoire de mon père Budiaki Jean-Marie que la mort a arraché très tôt;

Ntonda ku ba tata Gaston Kifula ye Raphaël Ntombo mu ku nkumisa muntu;

Ku mama Emilie Lunieni, kiese;

A mon épouse Sylvie Lula Kintombo pour la soumission;

Last but no means least, to my daughters Grace and Nabila, and to my son Yanny for the sacrifices endured all along my studies...

To all of you my gratitude and thanks

ABSTRACT

The Employment Bureau for Africa (TEBA Limited) established in 1902 recruits mineworkers from Lesotho and neighbouring countries for South African mines. Information on mineworkers' health and welfare from Lesotho is scarce.

Tuberculosis prevalence ranged between 159/100000 and 506/100000 from 1991 to 2001 in Lesotho.

This cross-sectional study aimed to determine the proportion of mineworkers affected with tuberculosis among adult male patients attending TB clinics in Maseru District's three main hospitals and ascertain compensation of mineworkers affected by occupational lung disease including tuberculosis.

A structured questionnaire was used to interview 421 adult male TB patients at Queen Elizabeth II, Saint Joseph and Scott hospitals in Maseru.

38.5% of participants in the study were mineworkers (former and active) in South African mines. Among these mineworkers, 70.4% were employed in goldmines. 30.7% of mineworkers were considered eligible for compensation. 42 mineworkers received compensation for previous and current tuberculosis whilst 33 mineworkers had not.

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ABBREVIATIONS & DEFINITION OF TERMS

Adult male TB patient -In the study context, male of 15 years of age and above

AFB -Acid Fast Bacilli

AGOA -African Growth Opportunity Act

AIDS -Acquired Immune Deficiency Syndrome

BOS -Lesotho Bureau Of Statistics

Bukana ea Bophelo - Is a medical booklet in Sotho language. Patients in most of health institutions in Lesotho commonly use it. Health professionals such as medical officers, nurse clinicians and others record patient's health information during consultation is in this document.

CHAL -Christian Health Association of Lesotho formerly PHAL

COIDA -Compensation for Occupational Injuries and Diseases Act

CXR -Chest Radiological examination

Eligible mineworker refers to mineworker diagnosed with TB while at work or within a year after leaving the mines for retirement or retrenchment (ODMWA and COIDA).

GOL -Government of Lesotho

HIV -Human Immunodeficiency Virus

H.S.A -Health Service Area

ILO -International Labour organization

LFDS -Lesotho Flying Doctors Services

LHDA -Lesotho Highlands Development Authority

MBOD -Medical Bureau for Occupational Diseases

MOHSW -Ministry of Health and Social Welfare

NIOH - National Institute of Occupational Health

NCOH -National Centre for Occupational Health

NGO -Non Governmental Organization

NRC -Native Recruiting Company

NTP -National Tuberculosis Program

ODMWA -Occupational Disease in Mines and Works Act

OLD -Occupational Lung Diseases

PTB - Pulmonary tuberculosis

QEII -Queen Elizabeth the Second Hospital

R -Rand (South African currency)

RSA –Republic of South Africa

S.A -South Africa

Stones -This was different from gold. It was translated literally from "lejoe" in Sotho language. There were mineworkers who reported that they work / have worked in this type of mines in South Africa. These were quarries.

TB -tuberculosis

TB unit refers to TB clinics/wards where TB patients registered for TB treatment.

TEBA Limited: -The Employment Bureau for Africa

VHW(s) -Village Health Worker(s)

WHO -World Health Organization

WITS University - Witwatersrand's University

1. INTRODUCTION

1.1 BACKGROUND TO LESOTHO

Lesotho is a mountainous landlocked country of 30335 km^2. It is completely surrounded by the Republic of South Africa (RSA) and is situated between 28° and 30° south, and between 27° and 30° east. It has ten politico-administrative districts and all of them have boundaries with one of the following South African provinces: Free State, Kwazulu-Natal and the Eastern-Cape (**Fig.1.1**). According to the 2000 Population census by Lesotho Bureau Of Statistics (BOS), the Population is 2,144131. Maseru District, the capital city is also one of ten politico-administrative districts of Lesotho and has 3 main hospitals. These are: Queen Elizabeth II (QEII), Saint Joseph-Roma and Scott-Morija. While QEII is based in town, Saint Joseph and Scott are situated in semi-rural settlements 30 and 45 km from the city centre respectively.

Economically, the country relies on its neighbour for most of its needs such as food, energy and employment. There are not many industries in Lesotho. For years Basotho work in RSA as migrant labourers in mines, farms and other sectors. The construction of phase 1 of the Lesotho Highlands water project was completed recently as an important investment. Despite that, the Lesotho economy still depends to a large extent on exporting labour to South African mines (S.A mines). It also depends on foreign aid to secure continuation of its socio-economic development in a most difficult scenario.[1] However; in recent years Lesotho has attracted significant investment in the textile industry because of AGOA (African Growth and Opportunity Act) and many factories have been established providing employment opportunities.

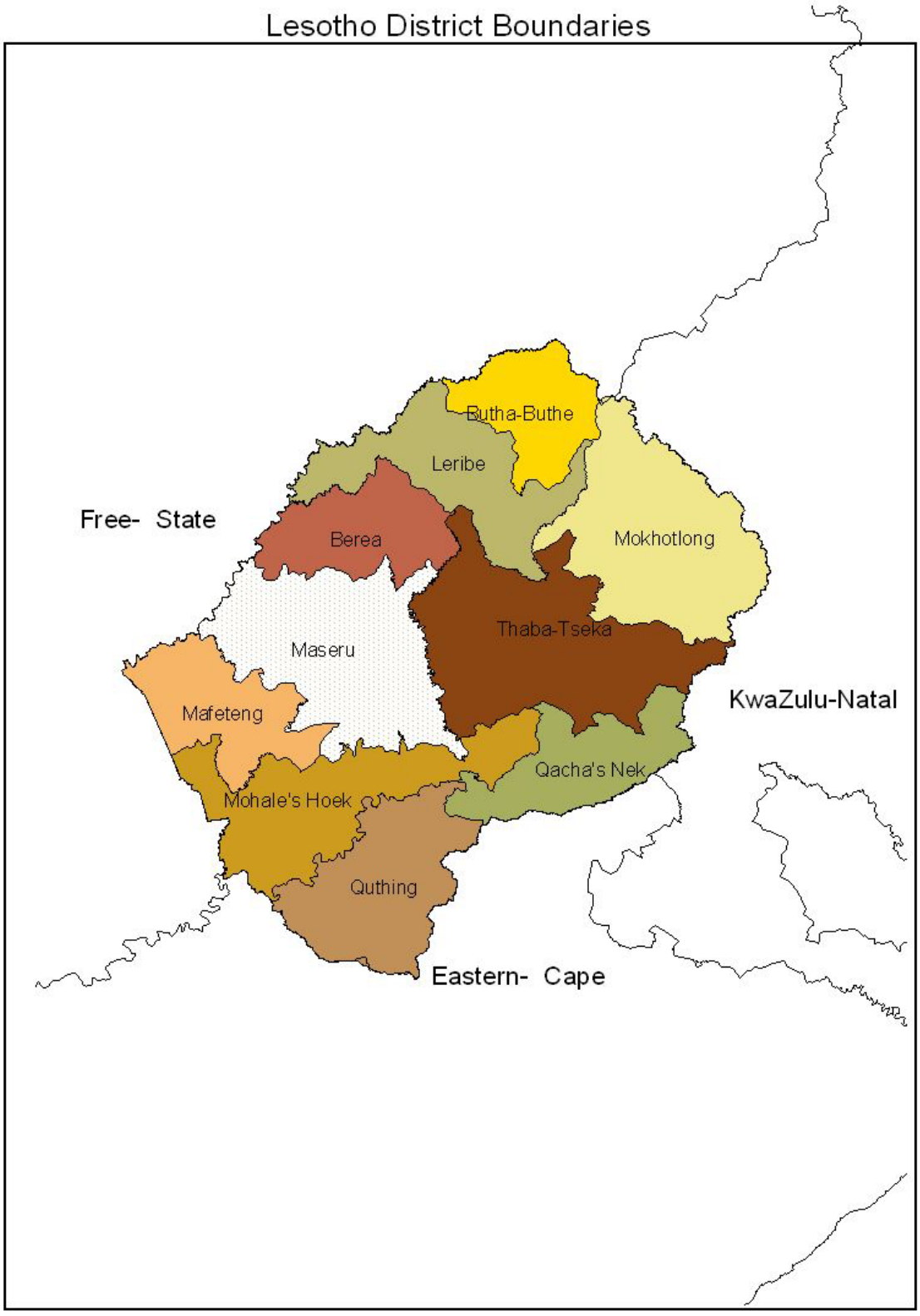

Figure1.1: Lesotho and its politico-administrative Districts

1.2 RECRUITMENT OF BASOTHO MINEWORKERS

The Employment Bureau for Africa (TEBA Limited) established in 1902 recruits mineworkers from Lesotho and neighbouring countries for South African mines. It was previously known as Native Recruiting Centre (NRC). TEBA Limited is involved in the deployment of mineworkers. It sets up community development projects such as schools, cooperatives and so on in the communities from which mineworkers originate. From 1998 to 2003, an average of 52 395 male adults were registered annually by TEBA Limited from Lesotho. 30% of these mineworkers were from the Maseru District alone (**Table 1.1**).

Table1.1: Recruited mineworkers-Lesotho Districts 1998-2003.

DISTRICTS	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
BUTHA BUTHE	5,392	4,465	4,350	4,167	4,354	4,769
LERIBE	9,245	9,194	9,252	9,425	11,194	10,839
MAFETENG	8,491	7,743	8,261	7,754	8,303	8,409
MASERU	**16,340**	**14,683**	**14,874**	**14,868**	**17,355**	**17,621**
MOHALE'S HOEK	5,801	5,213	4,632	3,870	4,312	4,501
MOKHOTLONG	1,599	1,234	1,230	1,017	1,187	1,048
QACHAS NEK	2,371	1,810	1,636	2,054	1,554	1,342
QUTHING	4,778	3,754	3,324	3,205	2,910	3,154
TEYATEYANENG	6,428	4,390	3,792	3,239	3,221	2,519
THABA TSEKA*	-	-	-	-	-	-
TOTAL	60,450	52,436	51,351	49,599	54,390	54,202

*THABA TSEKA district does not have an established TEBA Limited office.

1.3 TUBERCULOSIS: PUBLIC HEALTH ISSUE IN LESOTHO

Tuberculosis prevalence ranged between 159/100000 and 506/100000 from1991 to 2001 in Lesotho (**Table1.2**). In some statistics from National Tuberculosis Program (NTP), mortality due to TB is more than 15% every year. According to compiled TB figures in 2001 for instance, males (66%) were more affected than females (34%). The World Health Organization (W.H.O) indicates that a country with more than 200/100 000 cases of TB should be considered as experiencing a TB epidemic. Therefore Lesotho can be regarded as a TB epidemic country.

Table 1.2: Lesotho National TB prevalence 1991-2001

Year	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
/ 100 000 *	159	172	200	224	249	263	297	352	377	420	506

***National TB prevalence**

1.4 COMPENSATION FOR LUNG DISEASES IN MINEWORKERS

Mineworkers employed in the South African mining sector affected with occupational diseases like pneumoconiosis and other compensatable diseases such as tuberculosis, permanent obstruction of the airways and scleroderma are entitled to compensation.[2] For tuberculosis, the affected mineworkers receive a refund for loss of wages. This is stipulated in the Occupational Diseases in Mines and Works Act (ODMWA) No. 78 of 1973 and in the Compensation for Occupational Disease Act (COIDA) 1993, 1997. TB has to be diagnosed while the mineworker is still employed or within a year after leaving the mines.[3]

1.5 BRIEF OVERVIEW ON HEALTH PROVISION AND TB PROGRAM IN LESOTHO

For health provision purposes, the country is subdivided into eighteen Health Service Areas (H.S.As) plus the Lesotho Flying Doctors Services (LFDS) also considered as an H.S.A. These are different from politico-administrative entities (**Fig. 1.2**). Thus Maseru district comprises 3 H.S.As and contains 3 main health institutions (QEII, Saint Joseph Roma and Scott-Morija). In every politico-administrative district, there is at least one district hospital owned by the government of Lesotho (GOL). There may also be private or church hospital(s) as well. Church owned hospitals form part of an association called Christian Health Association of Lesotho (CHAL) formerly known as the Private Health Association of Lesotho (PHAL).

TB diagnostic facilities are available in all hospitals in the country. NTP in the Disease Control Unit of the Ministry of Health and Social Welfare coordinates and manages all TB activities. Treatment is free of charge in GOL hospitals while it is subsidised in CHAL hospitals. Medical and health staff such as nursing sister, TB coordinator, assistant nurse, nurse clinician or health assistant supervises TB treatments in TB units (TB clinics) in hospitals or health centres. In the community, village health workers (VHWs) sign patient's medical booklet after the TB medication is taken. Since the introduction of TB coordinators in H.S.As in 1996, TB cases reporting improved quite significantly (**Table 1.2**). They are in charge of keeping up to date TB registers in TB units and following up TB cases in the communities. They work closely with VHWs.

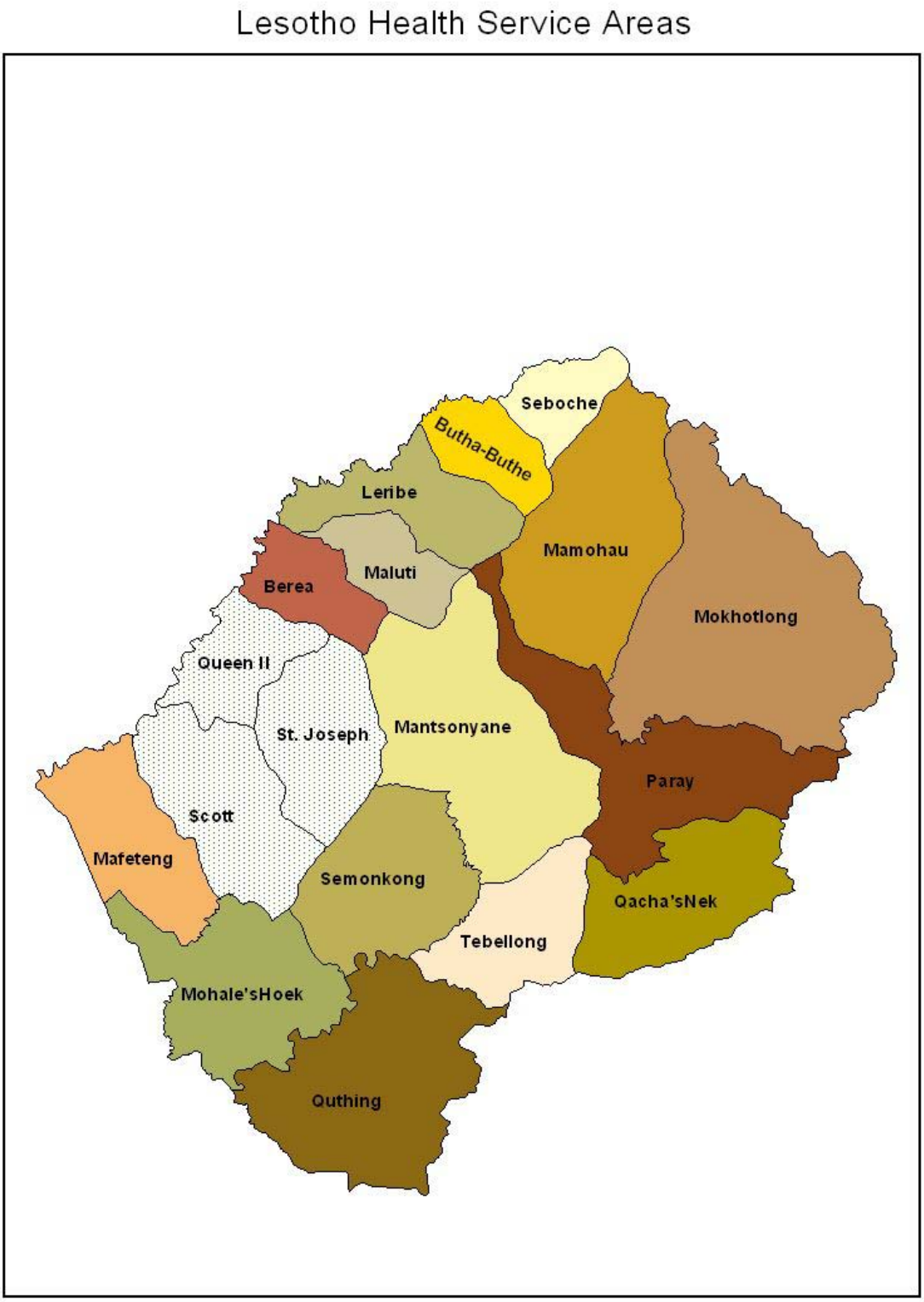

Figure1.2: Lesotho Health Services Areas' Map

1.6 JUSTIFICATION FOR THE STUDY

Information on mineworkers' health and welfare from Lesotho is scarce; yet TEBA Limited operates for more than one hundred years in Southern Africa.

People exposed to crystalline silica are predisposed to pulmonary tuberculosis. This was experimentally demonstrated in Gardener's work in 1929.[4]

Health and welfare of migrant labourers including mineworkers are seriously neglected public health issues. Mineworker's ill health may constitute a heavy burden to health care provision in Lesotho, particularly in the current century of HIV/AIDS pandemic.[5]

Mineworkers' health problems are still unknown to most people and organisations interested in health care provision and welfare of vulnerable population groups. Recruiting agencies can play an important role in contacting mineworkers whenever they are needed for one reason or another. Interventions that help to curb TB epidemics are various and may be directed to affected individuals or groups. TB awareness campaigns for mineworkers are one of the activities.

The findings of this study will help to highlight unsolved mineworkers health issues. It is hoped that this investigation will be a valuable contribution in this area of public health to policy makers and authorities in the country.

1.7 LITERATURE REVIEW

Many studies have proven the linkage between exposure to mining silica quartz dust and tuberculosis. The predisposition of silicosis to pulmonary tuberculosis was established since the beginning of the last century. In 1935, Gardner reported the evidence of coexistent TB in silicotic individuals from various industries. In 1963, Chadgidakis reported that advanced silicosis was likely to cause greater incidence of active TB. In 1974, Baily et al published a study in which sandblasters died of silico-tuberculosis in New Orleans.[6]

No compiled information is available in Lesotho with regard to this topic. Nevertheless, there has been some interesting research done in the migrant sending communities in the southern region in relation to this subject in which findings were published.

Cowie RL in a cohort study in 1994 confirmed and quantified the high risk of pulmonary and extra-pulmonary tuberculosis in gold miners with silicosis. This is an investigation involving 1153 older gold miners, with and without silicosis, who had or did not have tuberculosis. They were followed up for 7 years by a routine mine surveillance program for tuberculosis detection and it was discovered that 178 of the men developed tuberculosis. The incidence of tuberculosis during that study period suggested that a quarter of these miners with silicosis would develop tuberculosis by the age of 60 years.[7]

Work published by Murray J et al's in 1996 showed that the prevalence of tuberculosis and silicosis increases with age and duration of service. These findings resulted from an

autopsy-based study in which data were analysed for 16454 black gold miners. It was noted that the prevalence of tuberculosis increased by more than 4 fold in 16 years between 1975 and 1991. The prevalence of silicosis increased by less than 2 fold during the same period. They recommended that dust level in the mines should be reduced in order to prevent the increase of the disease burden.[8]

In a retrospective cohort analysis carried out on the workforce of Freegold Mines served by the Ernest Oppenheimer hospital in Welkom, the prevalence of TB was higher in the oldest miners. This suggests that TB is strongly associated with age. It was also noted that there was a significant association between TB and occupations such as drilling, with a rate ratio of 2.3 compared with low dust surface and maintenance work. It was concluded that any TB screening program should take special cognisance of high-risk groups of gold miners.[9]

Steen TW, Gyi KM, White N M et al in 1997 published the result of a survey study done in Thamaga village. This is a semi rural community in Kweneng district in Botswana with a history of work in R.S.A. mines. 304 former miners were examined by means of protocol including a questionnaire, chest radiography, spirometry and medical examination. The high prevalence of three major health events such as disabling injuries, PTB and pneumoconiosis was noted among these former miners. 26.6% had a history of tuberculosis. It was also noted that many former mineworkers participating in the investigation were entitled to compensation.[3]

A survey study involving 238 ex-mineworkers in Libode, a rural district in the Eastern Cape, RSA investigated the incidence of TB. Chest radiography and spirometry formed part of the study protocol. It was found that the prevalence of previously undiagnosed and uncompensated pneumoconiosis was high. The incidence of tuberculosis was also noted to be high. 24% of subjects were eligible for compensation. The study concluded that failure to diagnose and compensate occupational lung diseases results in a social and economic burden to the individual (mineworker), his household and the migrant sending community.[10]

Hnizdo E. et al in 1999 reported the result of a cohort study of 2255 white South African gold miners. They were followed up from 1968 to 1971, when they were 45-55 years of age, to 31 December 1995 for incidence of PTB. 1592 men died during the follow up period and of these, 1296 had necropsy done at the National Centre for Occupational Health (NCOH) to determine the presence of silicosis and PTB. The results showed that 115 had developed PTB. The study concluded that exposure to silica dust is a contributing factor to the development of pulmonary TB even after the exposure has ceased.[11]

Steen T W, Mabongo N, Moeti T et al in 2000 cited that recent experiences have shown that successful compensation claims were possible. Efforts are being made to address mine-related lung disease problems especially in neighbouring countries from where migrant workers originate. In Botswana, the government is actively involved in these matters. Practical steps for medical examination involving compensation claims of

mineworkers employed in RSA mines were also described in this study.[12]

In a study done by White N.W et al published in 2001, the outcome and follow up data on compensation result of two cross-sectional investigations were compared. 234 former underground mineworkers were interviewed in Thamaga (Botswana) against 238 from the rural area of Libode district (Eastern Cape, S.A.). The level of undiagnosed occupational lung diseases was high in both areas; 51.1% of Libode men reported past TB treatment against 29.0% in Thamaga. 26% of former miners in Libode were certified for compensatable disease against 16.1% in Thamaga. Compensation payments were made within 30 months of claims for South African men and after more than 52 months for Botswana men.[13]

1.8 LIMITATIONS

- All participants did not have documents during the interview proving that they have worked in the mines or had been employed somewhere else.
- It was not possible as principal investigator to be part of the interviewing team in all the three TB units. This for the fact that TB patients are seen on same days at QEII Maseru and Saint Joseph Roma (Tuesday & Thursday).
- Findings in this study cannot be generalised since each district in Lesotho may have its own particularities.
- Some patients might have been missed during the study period.

1.9 ETHICAL APPROVAL

Authorities in the Ministry of Health and Social Welfare in Maseru were contacted and a proposal was submitted and permission was given (**appendix 5**) for this study to be conducted. Management teams of concerned hospitals in Maseru district were also approached and were favourable to the research. The research protocol was submitted to the Ethics Committee for Research on Human Subjects of Witwatersrand's University (WITS) in Johannesburg for clearance, approval and registration. Research was approved and the clearance certificate issued (**appendix1**).

2. STUDY OBJECTIVES

The main aim is to determine the proportion of mineworkers affected by TB among adult male TB patients registered in TB units over a one-month period in three main hospitals of Maseru District and ascertain the compensation of mineworkers affected by an occupational lung disease including TB.

The specific objectives are:

-To determine the proportion of Basotho mineworkers affected with TB.

-To determine the proportion of active and ex-mineworkers affected with TB.

-To determine average age of mineworkers affected with TB.

-To determine the link between TB and different types of mines.

-To determine the association between TB and length of service in the mines.

-To determine the proportion of tobacco smokers amongst mineworkers TB patients.

-To compare the proportion of mineworkers diagnosed with TB in R.S.A and in Lesotho.

-To ascertain the refund of wages of mineworkers affected by TB.

-To determine the average time of processing compensation claims.

-To ascertain the compensation of any OLD.

-To find out whether mineworkers diagnosed with OLD have the MBOD Certificate.

3. METHODS

After receiving the clearance certificate No 03-09-52 (**appendix 1**) from WITS Human Research Ethics Committee (medical) in Johannesburg approving the research, preparations were made and the questionnaire tested in a pilot study. Interviewers were also trained prior to the main study besides the training offered to them during the pilot study. Adult males treated for tuberculosis in three 3 main hospitals of Maseru District (Queen Elizabeth II, Saint Joseph-Roma and Scott-Morija) were interviewed. A total of 421 participants were interviewed according to a protocol using a questionnaire and patient medical booklet **(bukana ea bophelo).**

3.1 STUDY POPULATION

Adult male TB patients in TB units from these three mentioned health institutions in the Maseru District constituted the study population.

3.2 STUDY SAMPLE

Adult male TB patients, who registered at TB units during the study period to collect their TB drugs, formed the study sample.

3.3 SAMPLE SIZE

421 adult males TB patients were interviewed in all of the three TB units in those major hospitals of the district over a period of one month. Out of that number, 318 were from QEII while 54 and 49 were from Saint Joseph-Roma and Scott-Morija respectively.

3.4 SELECTION

Convenience sampling technique was used. Looking at the disease burden in the country, the time and the limited resources to carry out this study, 421 samples were taken.

This included adult male TB patients who were identified among all TB patients visiting the clinics during the study period. These were males over the age of 15 years among females and children at TB clinics prior to the start of the interview.

3.5 MEASUREMENT

The type of study design was descriptive cross sectional.

The main measurement tools were:

-**Questionnaires**. These were principally used to get detailed information on profession/occupation on all adult male TB patients at TB units during the interview period.

-The **medical booklets** of participants. These provided information on participant (TB patient) identity, age, TB register No, date and means of diagnosis of current TB. Therefore it was straight forward for the interviewers to obtain the above parameters from medical booklets.

Other measurement instruments used for records review:

-TB **Registers of** different health institutions where this research was carried out.

-Occupational Health Unit **registers** at Queen Elizabeth II hospital were also checked as mineworkers diagnosed and treated for lung diseases are referred to this unit.

-Any relevant documents such as patient's **medical referral notes** confirming TB diagnosis were also valuable tools in this study.

-Statistics on recruited mineworkers were obtained from Maseru TEBA Limited office.

-Some compiled statistics on TB figures from NTP in the disease control unit of the Ministry of Health and Social Welfare in Maseru were also useful.

3.6 PILOT STUDY

The pilot study was intended to pre-test the questionnaire, and was carried out in two health centres/clinics:

Likotsi Ha Tikoe and Mabote situated on the outskirts of Maseru town.

Its purposes were to:

1) Check the feasibility of the investigation by looking at subjects or participants available for interview and their willingness to participate.
2) Find out about the expectations of subjects such as the need for incentives to participate in the study.
3) Reassure the affected eligible mineworkers to assist them in their compensation process without raising too much hope for payment.
4) Assess the questions' relevance and completeness.
5) Identify the human resources required to carry out interviews, their training needs and incentives
6) Training of interviewers

Twenty-one adult male TB patients were interviewed, and were those attending the

clinics for their TB drug under supervision by the health staff at the health facilities. A brief introduction was given and general information was read out to them. One questionnaire was handed to each TB patient. Myself, the principal investigator together with my assistant investigators (interviewers) helped the respondents fill in the questionnaire. Interviewees and assistant investigators input and comments were taken into consideration. These were used to improve the questionnaire.

The following results were noted: 13 participants (62%) were mineworkers out of 21 participants interviewed in the pilot study against 8 participants (38%) non-mineworkers. 11 (84.6%) out of 13 mineworkers have worked or are working in gold mines; one mineworker in a platinum mine and one mineworker in a gold and platinum mine. 7 (53.8%) mineworkers had TB previously and the other 6 (46.2%) mineworkers were being treated for TB for the first time. 3 (23%) mineworkers out of the 13 mineworkers treated for TB in this pilot study sample were eligible for compensation for TB. One was compensated, one was promised compensation and one was not compensated.

Participants and the staff at the clinics were very cooperative. At the end of this pre-testing stage, it was estimated that the study would be feasible.

3.7 MAIN STUDY DATA COLLECTION.

General information (**appendix 2**) was given and explained to adult male TB patients present at TB units in 3 main hospitals of Maseru district (QEII, Saint Joseph and Scott). Those who agreed to participate in the research without being coerced have signed a

consent form (**appendix 3**). 421 Participants were each supplied with a questionnaire (**appendix 4**).

The **questionnaire** was the main instrument used in this study to collect data. Its purpose was to gather the following information on participants (adult male TB patients):

- Age
- Address
- Level of education
- Profession
- Marital status
- Smoking history
- Year of first TB diagnosis
- Completion of TB treatment during first TB diagnosis
- Type of work during first TB diagnosis
- Date of diagnosis of current TB
- Place of diagnosis of current TB
- Diagnosis means of current TB
- Type of mines
- Date of start of employment in the mines
- Date of end of employment in the mines
- Medical exit examination
- Information on compensation on TB and OLD.

The questionnaire was filled in with the help of the assistant investigator (interviewer) after interpretation and explanation in Sotho, patient's best-understood language.

The **Medical booklet** of the participant was an important asset to obtain the information on current TB such as: date and place of start of TB treatment, means of diagnosis etc since it is routinely recorded in this document. Three stamps from the TB program are applied in the patient's medical booklet in Lesotho, once a patient is diagnosed with TB. Information on TB is filled in this booklet and patients carry it every time when visiting health facilities for any health problem. All TB patients in the study each had a medical booklet. It was easy for the investigator or assistants to get the required information on all participants' identification and current TB status.

3.8 DATA ANALYSIS.

Epidemiological software (Epi-Info version 6.0 2000, CDC, Atlanta, USA) was the main tool used to capture and analyse the data. We also made use of basic statistics to analyse data. Microsoft excel was used to generate graphics such as pie charts and histograms. All adult male TB patients involved in the study constituted the denominator for the study sample. The next step of data analysis, and most important for the study was to analyse all parameters on mineworkers such as: age, level of education, ex or active mineworker, type of mines and length of service (duration), disease (TB) history and compensation.

4. RESULTS

A total of 421 adult male TB patients (participants) were successfully interviewed in TB units of three Maseru District major hospitals.

4.1 PARTICIPANTS BY OCCUPATION

Participants were grouped according to the following categories of occupation with the results as shown below.

Table 4.1: Participants by Occupation

Participants by categories of occupation	No	Percentage
Group I: Active mineworkers (Am)	18	4.3%
Group II: Ex mineworkers (Em)	144	34.2%
Group III: Employed non-mineworkers (Enm)	124	29.4%
Group IV: Unemployed non-mineworkers (Unm)	130	30.9%
Group V: Abstained participants (Ap)	5	1.2%
Total of participants	421	100.0%

The above grouping or classification of interviewees was favoured to avoid cumbersome listing of different occupations found during the investigation. These groups are:

- **Group I and Group II (Mineworkers)**

In total, 162(38.5%) of participants (adult male TB patients) had a history of work in South African mines. 144(34.2%) had previous history in mines whilst 18(4.3%) had

current history in mines (**Table 4.1**). In the study context, participants with past history of work in the mines were identified as ex or former mineworkers and participants with current history of work in the mines were labelled active mineworkers.

- **Group III: Employed non-mineworkers**

All adult male TB patients who declared during the interview that: 1) they are employed in the public or private sector, 2) they are self-employed or 3) they have an income generating activity, were included in this group. 124(29.4%) of adult males TB patients constituted this group (Enm).

- **Group IV: Unemployed non- mineworkers**

These were participants (Unm) who claimed in their interview questionnaire that they are not working and have never worked. They formed 130(30.9%) of the study sample.

- **Group V: Abstained participants**

These are adult males TB patients (Ap) who did not fill in the questionnaire. 5(1.2%) of adult males TB patients constituted this portion of the study sample.

4.2 PARTICIPANTS INTERVIEWED IN 3 TB UNITS

Table 4.2: Participants by TB Units in Maseru District.

TB units	No.	Percent
Queen E II.	318	75.5%
Scott	54	12.8%
SJ-Roma	49	11.6%
Total	**421**	**100%**

4.3 MINEWORKERS AGE DISTRIBUTION

Table 4.3: Mineworkers (active & ex mineworkers) per age groups

Age group	Below 31yrs	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71+	Adults	Total
Number	3	12	17	23	21	29	11	21	7	14	4	162
%	1.8%	7.4%	10.5%	14.2%	13.0%	17.9%	6.8%	13.0%	4.3%	8.6%	2.5%	100%

Mean=51.418, Variance=148.681, Std. Dev=12.194, Std. Err=0.970, Min=29, Max=84
Student's "t", testing whether mean differs from zero.

T statistic = 53.003, df =157, p-value = 0.00000

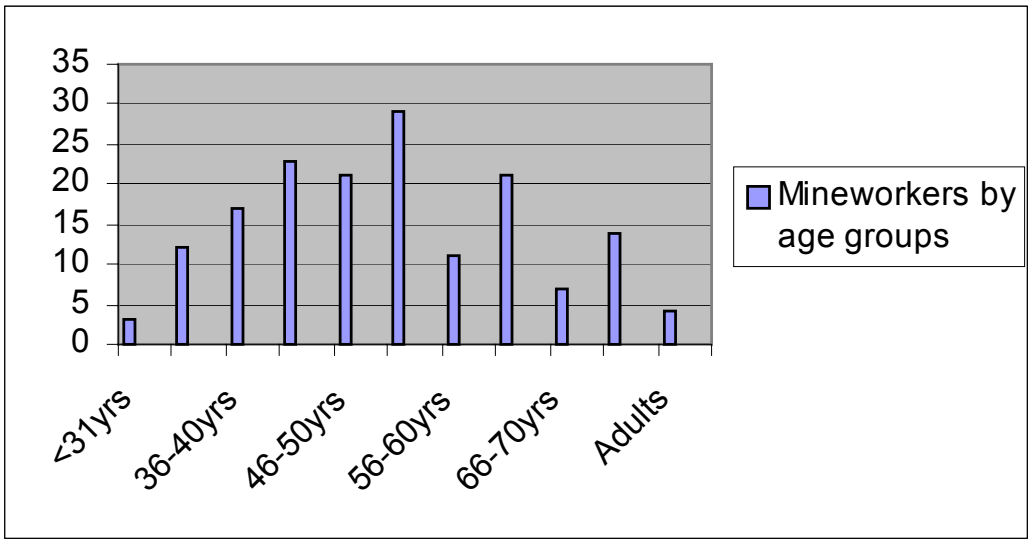

Figure 4.1: Mineworkers (active & ex mineworkers) per age groups

4.4 MINEWORKERS' LEVEL OF EDUCATION

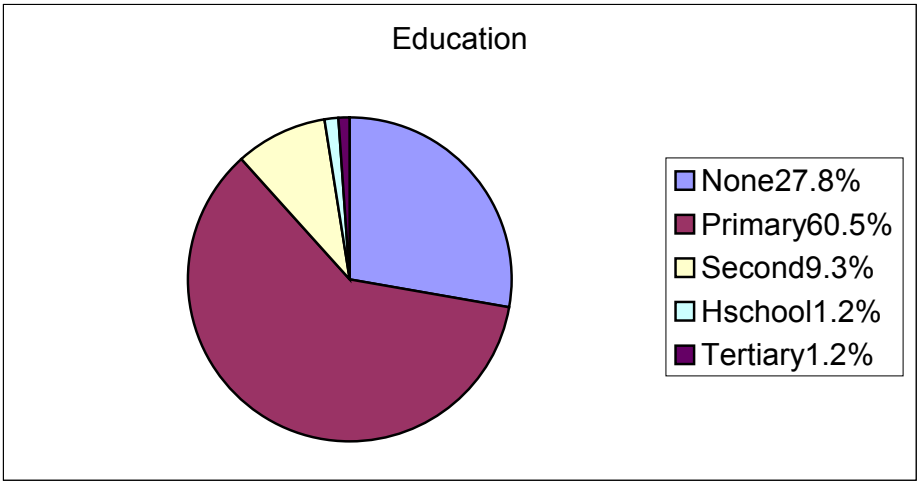

Figure 4.2: Level of education of mineworkers

Keys:
Second = secondary school
Hschool = high school

4.5 PREVIOUS TB TREATMENT FOR MINEWORKERS

Table 4.4: **Mineworkers with previous TB**

Work in Mine	No	Percent
Yes	31	19.1%
No	131	80.9%
Total	162	100.0%

4.6 CURRENT TB

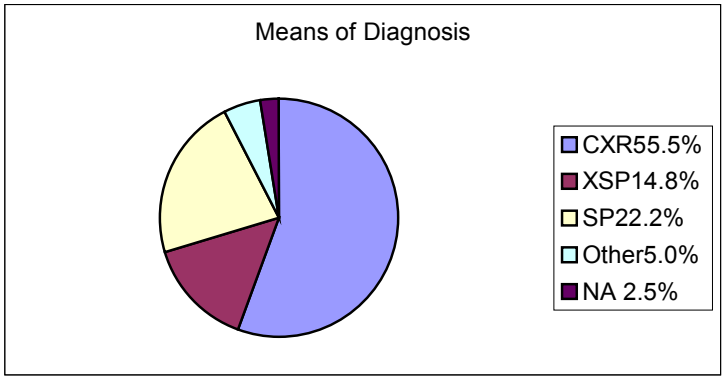

Figure 4.3: **Mineworkers & Means of diagnosis for current TB**

Keys:
CXR = chest x ray
XSP = chest x ray
SP = sputum
NA = No answer

Table 4.5: **Place of diagnosis of current TB**

Diagnosis place	**No**	**Percent**
Lesotho	129	79.6%
RSA	31	19.2%
NA	2	1.2%
Total	162	100.0 %

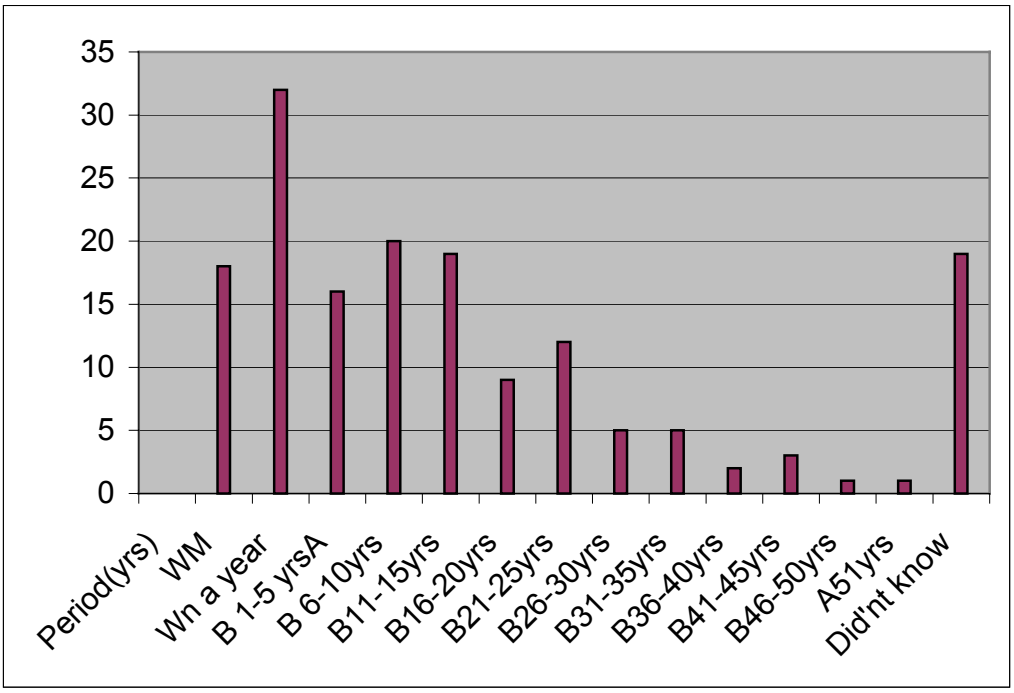

Figure 4.4: **Mineworkers & period of diagnosis of current TB**

Keys: WM = while in the mines
Wn = within
B = between

Table 4.6: Referral notes for mineworkers diagnosed with TB in RSA.

Referral notes	No	Percent
Yes	23	74.2%
No	8	25.8 %
Total	31	100.0 %

4.7 SMOKING IN MINEWORKERS WITH TB

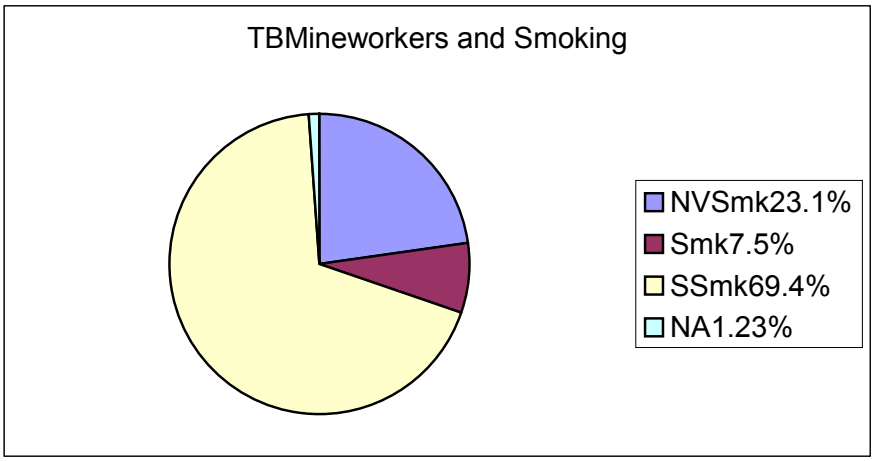

Figure 4.5: **Smoking and TB**

Keys:
NVSmk = never smoke
Smk = smoking
SSmk = stop smoking
NA = no answer

4.8 MINING HISTORY, CLAIMS & COMPENSATION

Information on mining history, claims and compensation of diseases and other benefits, and claims processing time was obtained from participants' questionnaires.

Table 4.7: **Lesotho District TEBA Limited offices and mineworkers.**

Lesotho districts	**No**	**Percent**	**Cum.**
MASERU	118	72.8%	63.6%
LERIBE	6	3.8%	65.4%
TEYATEYANENG	9	5.6%	68.4%
MAFETENG	15	9.3%	76.4%
MOHALE'S HOEK	1	0.6%	80.0%
QUTHING	3	1.8%	81.8%
QACHAS NEK	1	0.6%	82.4%
SOUTH AFRICA	2	1.2%	83.6%
Did not indicate	7	4.3%	100.0%
TOTAL	**162**	**100.0 %**	

Table 4.8: **Active mineworker's age & length of service in the mines**

Active mineworkers age in years and length of services (in years)								
29(?).	32(6).	34(1).	36(5).	36(12).	37(10).	38(6).	38(18).	42(8).
43(12).	43(21).	44(8).	46(25).	48(13).	51(33).	53(30).	55(37).	64(24)

(N): length of service in the mines in years

Table 4.9: **Mineworkers per type of mines and years spent in the mines**

Type of mines	Length of services (years)									Total	%
	<1	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36+		
	Number of mineworkers in different types of mines										
Asbestos & Gold					1					1	0.6
Asbestos Coal & Gold			1							1	0.6
Asbestos Coal &Platinum		1								1	0.6
Coal		1	1					1	1	4	2.7
Coal & Gold		1	1	1			2			5	3.3
Coal Gold & Platinum			1			1				2	1.3
Coal& Platinum				1						1	0.6
Coal & Stones					1					1	0.6
Copper		1								1	0.6
Diamond	1	2								3	1.8
Diamond & Gold		1								1	0.6
Gold		23	20	11	9	17	14	13	7	114	70.4
Gold& Platinum					1					1	0.6
Platinum		2								2	1.3
Stones*				1		1	1			3	1.8
Did not remember.										21*	13.3
Total	**1**	**32**	**24**	**14**	**12**	**19**	**17**	**14**	**8**	**162**	**100**

Stones*: Some few participants reported that they worked in that type(s) of mines.

21*: These participants did not remember either the year when they started working in the mines or the year they stopped working in the mines.

Table 4.10: **Ex-mineworkers exit medical examination (Exit Med Exam)**

Exit Med Exam	**No**	**Percent**
Yes	84	58.4%
No	28	19.4%
No answer	32	22.2%
Total	**144**	**100%**

Table 4.11: MBOD certificates

MBOD certificates	**No**	**Percent**
Yes	37	22.8%
No	11	6.8%
TB diagnosed more than a year after leaving the mines	112	69.1%
No answer	2	1.2%
Total	**162**	**100 %**

Table 4.12: Compensation of mineworkers (active and ex-) for previous TB

Mineworkers	**No**	**Percent**
Compensated.	15	53.6%
Not compensated.	10	35.7%
No answer.	3	10.7%
Total	**28**	100 %

Table 4.13: Compensation of mineworkers (ex and active) for current TB

Mineworkers	**No**	**Percent**
Compensated	27	54 %
In process	17	34 %
Not compensated.	6	12%
Total	50	100%

Table 4.14: Processing time for claim payment (previous and current TB)

Claim processing time	**Number of Mineworkers**		**No**	**%**
	Previous TB	**Current TB**		
Below 3mo.	-	7	7	16.6%
B 3mo. to 6mo.	3	20	23	54.7%
B 7 mo. to 11mo.	3	-	3	7.0%
B12 mo. to 17mo.	3	-	3	7.0%
B 18 mo. to 23mo.	1	-	1	2.3%
24 mo. to 36 mo. or more	2	-	2	4.7%
*	4	-	4	9.5%
Total	**15**	**27**	**42**	**100.0%**

*Did not remember the processing time.
mo.= months
B = between

-Offices for claim submission

Participants, who claimed, reported that submissions were made at the workplace in most of the cases. Those are mineworkers who still at work (active mineworkers). Some made their submission to the recruiting company (TEBA office) through the hospital where TB was diagnosed.

-Amounts received for TB compensation

Amount received for compensation varied between 600.00 Rands paid in 1984 to 6,000.00 Rands in 2003. In between these two amounts, Mineworkers received 1,000.00; 1,200.00; 1,800.00; 2,000.00; 2,400.00 and 4,000.00 Rands. Some mineworkers did not remember how much they received while others did not want to disclose the amount saying that it is confidential.

-Other compensation payments or benefits

No compensation payment was reported during the investigation with regards to Other Occupation Lung Diseases (OLD). However, there were types of compensation that participants reported to have received. These amounts were too high (e.g. 42,000.00 Rands) to be considered as being for TB compensations, and were probably for severance pay and or injuries. Some participants claimed that the amount paid for compensation was too little. Others claimed that they received compensation for injuries such as limbs amputations while some did not receive anything even for diseases such as occupational asthma.

-Time of processing other OLD claim

OLD claims are not mentioned in our study since no information was obtained from interviewees on these diseases.

-Amount received for other OLD compensation

No information was obtained during the study.

-Reason(s) for not claiming

Some participants said that they were not aware or told that they were supposed to claim. The majority of mineworkers in the research reported that they were diagnosed TB a long time after leaving the mines and could not now claim.

-Other information concerning compensation

Some participants responded that they would like to see the Lesotho authorities involved in migrant workers affairs (welfare and health).

5. REVIEW OF OCCUPATIONAL HEALTH UNIT CLINIC REGISTERS

The records for the last five years of occupational health unit clinic have been reviewed and the following findings were noted.

Table 5.1: compensation claims occupational health registers 1998-2003

YEAR	No of mineworkers	AGE (Years)	Type occupational Disease.	Amount received
1998	3	46	Tuberculosis	-
		50	Silicosis	44700Rands
		30	Silico-tuberculosis	11634 Rands
1999	1	54	Silico-tuberculosis	7200 Rands
2000	*	*	*	*
2001	3	-	Silicosis (pneumoconiosis)	-
		-	Silico-tuberculosis	-
		-	Tuberculosis	-
2002	3	45	Tuberculosis	1050 Rands
		64	-	-
		-	Silicosis	-
2003	4	-	Tuberculosis	-
		78	Tuberculosis	-
		58	Tuberculosis	-
		-	Tuberculosis	-

Note
* No register for the year 2000 found.
- Missing information

6. DISCUSSION

The study main objective of determining the proportion of mineworkers diagnosed with TB among adult male patients in Maseru district's three main hospitals was achieved. Related compensation issues to occupational lung diseases including TB in Basotho mineworkers were also looked into. This investigation did not only reveal that Basotho mineworkers were largely affected by TB in the study sample, but the unemployment rate among adult male TB patients was also high. National TB Prevalence has been high for more than a decade as shown in **Table 1.2;** unfortunately there is no compiled report on TB by profession or group of occupation to compare to this study. 34.2% adult male TB patients were former mineworkers. 4.3% adult male TB patients were active mineworkers and 30.9% adult male TB patients were unemployed (**Table 4.1**).

Participants' (adult male TB patients) mean age was 43.06 with an age range of 16-84. The minimum age was 29 years while the maximum age was 84 years with a mean age of 51.42 years (age range 29-84). In a similar study in Botswana, mineworkers' age range was 28-93.[3] 102(63%) of the 162 were between 31 and 55 years of age. 2.5% of mineworkers did not know their age and they were categorised as adults (**Fig.4.1 & Table 4.3**).

More than two thirds of participants were literate since 60.5% had completed the primary level of education. 9.3% have attended secondary school and 27.8% never had any formal education (**Fig. 4.2**).

31 (19.1%) out of 162 declared that they were treated for previous TB while employed in the mines. The remainder claimed that they have never been treated for previous TB in the mines (**Table 4.4**).

129 (79.6%) had their current TB diagnosed in Lesotho and only 31 (19.2%) were diagnosed in RSA (**Table 4.5**).

TB was mainly diagnosed by CXR alone (55.5%) followed by sputum alone (22.2%) and by CXR and sputum (XRSP) combined (14.8%). TB diagnosed by other diagnostic means such as analysis of pleural fluid, lymph nodes biopsy etc (5%). No diagnostic means (NA) were recorded for 2.5% of Mineworkers TB patients (**Fig 4.3).** In a X-ray-based study in the former Republic of the Transkei in RSA PTB was evident in 64.2% of the X-rays[14]; proportion largely high compare to our study.

The diagnosis period for current TB in relation with the time being at work or outside mines varied between less than a year after leaving the mines to more than 50 years after leaving work for good (e.g. retirement, retrenchment or absconding). Of course there were mineworkers who had TB diagnosed during the course of employment. 18 (11.1%) of mineworkers had their TB diagnosed while in the mines (MW), 32 (19.7%) had it diagnosed within a year after leaving the mines (Wn), 19 (11.7%) did not recall during the interview when they left the mines and the remaining 93 (57.4%) had their TB diagnosed after 1 year to 50 years or more after leaving the mines.

Mineworkers eligible for TB compensation are 18 (11.0%) + 32 (19.7%) → 50 (30.7%); based on the fact that TB was diagnosed while in the mines and within a year after leaving the mines (**Fig. 4.4**).

The following parameters were used to estimate the period of diagnosis of current TB. These are: 1) Date of diagnosis of current TB

2) Mineworker being at work or outside mines at the time of interview

3) Date of interview.

Mineworkers diagnosed with TB at their workplace and referred home to Lesotho for continuation of TB treatment were 23 against 8 without referral notes (**Table 4.6**).

69.4% said that they have stopped smoking (SSmk), 7.5% responded that they were still smoking until when they were diagnosed with TB and were labelled smokers (Smk) during this study, 23.1% of interviewed mineworkers treated with tuberculosis claimed that they had never smoked (NSmk) and no answers were obtained from 1.2% of TB mineworkers (**Fig. 4.5**). The majority of mineworkers (76.9%) in this study had smoked tobacco. Many studies have shown that tobacco smoking is a risk factor to develop lung diseases. Workers exposed to silica dust who smoke are at higher risk as the two exposures act synergistically in causing chronic obstructive lung disease[15].

Mineworkers in this study were mainly recruited from TEBA limited Maseru office. 118 (72.8%) of the 162 in the study joined the mines in RSA through this office; followed by 15 (9.3%) from TEBA limited Mafeteng office and no information was obtained from 7(4.3%) participants (**Table 4.7**).

The duration of mining ranged from less than a year to more than 36 years. 0.6% of mineworkers spent less the one year in the mines, 19.8% spent between 1 and 5 years,

14.8% spent between 6 and 10 years, 8.6% spent 11 and 15 years, 7.4% spent between 16 and 20 years, 11.7% spent between 21 and 25 years, 10.5% spent between 26 and 30years, 8.6% spent between 31 and 35 years, 5.9% spent more than 36 years and 13.0% did not remember exactly when they were employed or when they left the mines. Recruitment age (RA) was calculated by subtracting the age of active mineworkers at the time of interview by the length of service (LS) (**Tables 4.8** & **4.9**). The maximum duration of mining in our study is more than what was found in a study done inTranskei.[14]

The majority of mineworkers, about 114 (70.4%) worked only in gold mines, and another 11 (6.8%) have worked in gold mines and other type of mines in their life. 21 (13%) did not mention the type of mines they worked. The remainder worked in mines such as: Asbestos, Coal, Platinum, Diamond, etc. (**Table4.9**). Very high rates of tuberculosis were also reported among gold-miners by Godfrey-Faussett et al.[16]

Medical examination before leaving the mines was performed on 84 (58.4%) of 144 ex-mineworkers, while 28 (19.4%) did not have any examination. No answer was obtained from 32 (22.2%). This is only applicable to former mineworkers (144) and not for 18 active mineworkers (**Table 4.10**).

The investigation revealed that 37 (22.8%) of mineworkers had MBOD certificates while 11 (6.8%) did not. No answer was obtained from 2 (1.2 %) of mineworkers. 112 (69.1%) mineworkers reported that they developed Tuberculosis many years after leaving the mines (more than a year) (**Table 4.11**).

With regard to compensation for previous TB, among 28 mineworkers eligible for TB compensation, 15 (53.6%) claimed to have been compensated against 10 (35.7%) who never receive any compensation for TB. No answers were obtained from the other 3 (10.7%), (**Table 4.12**).

For current TB, among the 162 interviewed, 50 were eligible for current TB compensation. 27 (51.9%) claimed to have received their TB compensation, 17 (34 %) reported that their claims still in process and 6 (12 %) said that they did not receive compensation (**Table 4.13**). 10 out of a possible 29 mineworkers said that they had been compensated for pulmonary tuberculosis and one was unsure in a study done in by Steen TW, Gyi KM, White NW et al.[3] Tuberculosis accounted for 50 % of all black compensation cases in a by study Anderson N.[17]

The processing time for compensation claims varied from less than 3 months to 36 months. Some mineworkers reported that they received the payment after 5 years (60 months). Some beneficiaries reported that they did not recall for how long they waited to be compensated after lodging their claim for payment (**Table 4.14**). Compensation payments were finalised within 30 to 52 months in the study done by White NW, et al.[13]

The amount paid for TB compensation ranged from R600 to R6000 depending on the year they were diagnosed with TB. For instance the R600 were paid in 1984 for compensation to a mineworker who was first diagnosed with TB that year. In the study, quite a number of mineworkers did not want to disclose the amount received saying that

it is a secret. A good number of mineworkers reported that they did not claim for compensation because they contracted TB many years ago after leaving the mines (e.g. from more than a year to several years).

As for other OLD, no single mineworker participant in this study mentioned having been diagnosed with such diseases.

Besides compensation for TB in the mines, some mineworkers revealed that they had injuries such as loss of limb(s) or finger(s) for which they had received compensation. Whereas there were mineworkers who said that they had never been compensated for injuries or diseases such as occupational asthma. Some mineworkers with TB also claimed that the money wages for their TB compensation was included in their severance pay.

The interview did not single out any other occupational lung diseases beside TB but the review of health occupational unit registers at Queen Elizabeth II hospital did. Compensation claims and medical examination for occupational lung diseases such as silicosis and silico-tuberculosis were recorded in this unit. The 2000 register was not found. 1 mineworker received compensation for tuberculosis in 2002. 3 mineworkers received compensation for silicosis and silico-tuberculosis (in 1998 and 1999) as noted in **Table 5.1**.

7. LIMITATIONS

Limitations were general, resources and interviewees related.

7.1 GENERAL LIMITATIONS

This study being the first of its kind in Lesotho, therefore no comparisons can be made with previous study. Although the number of miners recruited on a monthly basis from Lesotho for years is significant, no information is available on Basotho mineworkers' health and welfare. It did not determine the number of new TB cases, interrupted TB treatment, and failures or relapses among mineworkers in the study sample. The proportion of TB in the sample according to occupations or group of professions such as public servants, textiles or factory workers, bricklayers and so on was not determined. We thought this could generate long listing of different type of occupations. Records from registers in general were incomplete and unavailable.

7.2 RESOURCES LIMITATIONS

The original intention was to collect information on all TB units through out the country and determine the prevalence of TB in Basotho mineworkers. This was not possible for the following reasons: 1) Lesotho terrain needs of lot of resources in terms of finance, and time and 2) the time assigned to complete the Masters programme is limited.

It was not possible for the principal investigator to be part of the interviewing team as TB clinics are held on the same day at each hospital. Some questionnaires were not filled in completely although interviewers received training during the piloting phase of the research and prior to the main study.

7.3 INTERVIEWEES LIMITATIONS

Participants did not have their document(s) from the mines. As a result, some mineworkers had problems providing precise answers to questions.

8. CONCLUSIONS

This study has shown how crucial it is to carry out periodical investigations in mineworkers on their health and welfare. It has provided unique and important information that justify expanded effort to screen mineworkers.[3]

It has revealed that mineworkers are more susceptible to TB than to other working groups in Lesotho. The proportion of TB among mineworkers was found to be very high in the study sample. Close to 40% (38.5%) of participants diagnosed with TB were mineworkers (ex and active). Though efforts are made to curb the epidemics, high-risk groups such as mineworkers as shown by our study need to be targeted.

It was noted that TB in mineworkers was largely diagnosed by chest X Ray (CXR) only, 56 (53%) out of 162 mineworkers. Microscopic examinations with Ziehl Nielson coloration are required for suspected TB patient[18].

Compensation is very important especially when the unemployment rate seems to be high in the community. This study found quite enormous the unemployment rate or proportion (30.9%). This study found that 42 mineworkers were compensated (**Table 4.14**) but a significant number did not get their claim paid (**Table 4.12** & **4.13**). There were also mineworkers who reported that they have waited for compensation payment for more than 60 months (5 years). Regarding the amount, some had expressed their dissatisfaction that what they received was not enough (e.g. amount varied between R600.00 paid in 1984 to R6000.00 in 2003).

Occupational health surveillance is also crucial especially in a labour sending community such as Maseru looking at the number of mineworkers recruited per month. This was suggested in a study in Libode and Thamaga.[13]

Lack of crucial information in various departments dealing with occupational health and vital medical records was a major problem faced by this study.

Being the first of its kind, this research has provided quite a good insight into some aspect of Basotho mineworkers' health and welfare.

9. RECOMMENDATIONS

With regard to TB in mineworkers

In general, recommendations to curb TB epidemics in Lesotho are no different to those from NTP and those contained in the WHO guidelines. Improved data reporting and research are needed to identify occupational groups at risk and the calculation of prevalence.[19] However some practical recommendations with regard to TB in mineworkers are mentioned below.

Practical recommendations:

1-Any mineworker suspected or diagnosed with TB should have the sputa analysed [18]and CXR interpreted by an experienced medical office in TB or radiologist.

2-Statistics on TB should be completed and compiled on a regular basis (e.g. monthly or quarterly). They have to be made available to those who need to know (e.g. health care providers, health authorities, mining corporations, mineworkers recruiting companies such as TEBA Limited and mineworkers union).

3-Mineworkers should be made aware that they are vulnerable to certain diseases (e.g. TB) even after they have stopped working in the mines. They should be provided with all the necessary information on health education, good life style to avoid most illnesses and on prevention and treatment of TB. Those diagnosed with TB should become more knowledgeable about treatment and cure and be encouraged to organise themselves in support groups. This will enable them to take TB medication properly with encouragement by others within the group at work or in the living places (e.g. hostels, villages).

4-Contact tracing of mineworkers diagnosed with TB in their workplace, living place (hostels), household and possible communities contact should be encouraged and initiated. Contact tracing programs may therefore act as a screening program of a high-risk population.[15]This can help detect and treat cases of TB as soon as possible.

5-Recruiting agencies or companies and mining companies should make the newly employed mineworkers aware of risks of injuries and diseases in mines.

6-Keeping of records at all levels is very crucial as they can be referred to time to time.

With regard to compensation

The intention is not to introduce new structures or new concepts since there is already an existing occupational health unit within the Ministry of Health and Social Welfare, whose use is highly recommended. Nevertheless I would like to suggest how this unit can function more efficiently and how it can benefit mineworkers and different stakeholders.

Some recommendations

1-Strengthen the occupational health unit in the ministry of Health in Lesotho with more logistical support and resources (human, financial and others).

2-The role of the occupational health unit in the ministry of Health should be known to all those interested. People have to know how it operates or functions.

3-Create a committee[12] specifically to deal with mineworkers who are desperate and have lost hope of getting their compensation or benefits. Members of this committee should be from the following units or ministries:

-The occupational health unit in the Ministry of Health and Social Welfare.

-The Social Welfare department in the Ministry of Health and Social Welfare.

-The ministry of Labour.

-The Home affairs or the Local government or District Secretary office in Maseru.

-The Basotho Mineworkers' Union.

4-Mineworkers should know their rights prior to taking up employment in the mines.

5-The medical officers, nurse clinicians diagnosing TB, and TB coordinators, should refer mineworker with TB and any occupational injuries or diseases to the occupational health unit.

6-Medical staff and health professionals in Lesotho should be aware of occupational diseases or conditions for which mineworkers are compensated.

7-Mineworkers recruiting agencies or companies and mining corporations' roles should not only be limited to recruitment, deployment and employments. They also have to assist the mineworkers by empowering them as most of mineworkers have limited knowledge and education.

8-Mining companies should process compensation claims in time, so that payments are made as soon as possible.

9-TEBA Limited or any recruiting organisation has to be involved in the compensation process by persuading the mining companies that mineworkers must receive the benefits due to them. At present, the mineworkers recruiting company (TEBA Limited) or agencies are not involved.

10- Problems of uncompensated eligible mineworkers (cases of previous and current TB) be investigated thoroughly and compensation paid. This will be the first task of the proposed committee in point No3 above.

11-Creation of a research unit and trust fund for Basotho mineworkers looking at all the years that TEBA Limited has been recruiting them for RSA mines (since 1902).

10. DISSEMINATION OF FINDINGS

Research findings will be made available to:

- Health and Social Welfare authorities in Lesotho.
- Local authorities in Lesotho.
- Authorities in the Ministry of Labour.
- Health organization in Lesotho.
- Hospitals management teams in Lesotho.
- Mining recruiting agencies/companies.
- Mining corporations in RSA.
- Mineworkers' organisations, union or associations.
- Those who will be interested to know.

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APPENDIX 1 CLEARANCE CERTIFICATE

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Division of the Deputy Registrar (Research)

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
R14/49 Budiaki

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER 03-09-52**
PROJECT	Tuberculosis and Compensation: A Study of a Selection of Basotho Mineworkers from Maseru District
INVESTIGATORS	L Budiaki
DEPARTMENT	School of Public Health
DATE CONSIDERED	03-09-26
DECISION OF THE COMMITTEE*	Approved unconditionally

Unless otherwise specified this ethical clearance is valid for 5 years and may be renewed upon application.

DATE 04:02:03 **CHAIRPERSON** .....
(Professor PE Cleaton-Jones)

*Guidelines for written 'informed consent' attached where applicable

cc: Supervisor : Prof JCA Davies
NCOH

DECLARATION OF INVESTIGATOR(S)
To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10005, 10th Floor, Senate House, University.
I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to a completion of a yearly progress report.**

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

APPENDIX 2 GENERAL INFORMATION

Dear Sir,

Re: TUBERCULOSIS AND COMPENSATION: A STUDY OF A SELECTION OF BASOTHO MINERWORKERS FROM MASERU DISTRICT

There is an ongoing study on the above subject at…….……I am Dr Lugemba Budiaki and I am doing research for a Masters degree at the University of the Witwatersrand. The research is being conducted in order to find out how many patients who worked or are working in the mines are diagnosed with "tuberculosis" collect their TB medication at this health facility per month and have received any sort of compensation for an occupational lung disease from the mines where they are working or they have worked.

All adult male TB patients present at the TB clinic this month are candidates or participants to the research. The doctor(s) and nurse(s) in the ward will give you all the care you require unconditionally as usual regardless of your acceptance to participate in the investigation or not. There is no preferential treatment for any patient.

We are not doing any experimentation. Any information you provide during the research will be confidential with no possible legal implication whatsoever. Your name will not appear on any study document and only participating staff in the investigation will have access to the information.

Participation in this study is voluntary and you are free to refuse or withdraw from the investigation at anytime. Such withdrawal or refusal will not affect any care to be provided from this hospital; now or at follow up as well. If you decide to participate, please sign an informed consent to participate in the research and you will be provided with a questionnaire to be filled with the help of the researcher or his assistant.

Thank you.

Dr Lugemba Budiaki, principal investigator.

If you have any questions, you can contact me at Tel No 22324131 or 22312501.

APPENDIX 3 INFORMED CONSENT

TUBERCULOSIS AND COMPENSATION: A STUDY OF A SELECTION OF BASOTHO MINERWORKERS FROM MASERU DISTRICT

I agree to participate in the above study after the principal investigator or his assistant has explained to me the purpose of the research which is to know the number of miners and former miners who are affected by tuberculosis (TB) and issues related to compensation (refund or remuneration) received as result of being affected by an occupational lung disease including TB. All adult males TB patients present at TB clinic today are invited to participate in the study.

I have understood as a patient*/ next of kin* that there is no risk to life whatsoever in relation with the study. The willingness to participate to the study or not will not affect any care or further care offered by this hospital. All the information provided during the study will be confidential and only the investigating team will have access to the information. My name will not be recorded in any document.

Consent given:
Patient*/ next of kin*signature:…….
Witness signature:……...
Place:……..
Date:……
*Delete where not applicable.

APPENDIX 4 QUESTIONNAIRE FOR PARTICIPANTS

(Adult male TB patients)

General information

0. Participant No Non-miner □ Yes □ No (for office use only)
Miner □ Yes □ No Active miner □ Yes □ No Ex miner □ Yes □ No

1.Interviewer's identification: _____

2.Place of interview: □Queen E II □ Scott □ SJ-Roma

3.Date of interview: _____

4.Patient's serial number: _____

Patient's profile or socio-economic or socio-demographic profile

5.Date of birth/age in years _____

6.Address where you have resided for the last one Year period: _____

7.Education level: □None □ Primary □Secondary □High School □ Tertiary

8.Describe your present or last occupation

□ unemployed

□ self employed as _____

□ currently unemployed, past occupation as _____

□ currently employed as _____

9. What is your marital status? □ Single □ Married □ Separated □Divorced
□Widower

10.If married, describe the occupation of the spouse_____

11.Number of dependent(s) (how many people do you directly care for?) ___

Information on tuberculosis

12.Are you smoking? □Yes, since when_____

□Never smoked

□ Stopped smoking after (in months/years) _____

13.Is it the first time to be treated for TB? □ Yes □ No

14.If no, how many times have you been treated for PTB? ___

15.When was TB first diagnosed (year)? _____

16.If you were at any time treated for TB, did you complete the treatment? □Yes □No

17.If you are a mineworker, were you working in the mines in that time? □Yes □No

18.When was the current TB diagnosed or date of start of treatment? _____

19.What was the means of diagnosis for current TB? (Please tick).

□ CXR □ Sputum □ Other Please specify _____

20.Where was the current TB diagnosed? Please tick. □In Lesotho □ RSA

21.If current TB diagnosed in Lesotho, in which hospital and district? _____

22.If current TB was diagnosed in RSA, were you referred with a letter for continuation of treatment in Lesotho? □Yes □Told or referred verbally □No □Not applicable (N/A)

Detailed employment 's history for mineworkers TB patients

23.As a miner, from which district of Lesotho you were recruited? _____

24.Give the name(s) of mines, listing them by types, date started and ended (year) and stating the first to the last or the current mines.

Name of mining company/Province	Type	Date started	Date ended

25.If currently unemployed, were you examined medically before leaving the mines? □Yes □No

Information on compensation for mineworkers TB patients

26.In case your TB was diagnosed while you were still working for the mines or within a year after leaving the mines, were you compensated for that? □Yes □No

27.How long did it take you to get your claim paid (in months or years)? _____

28.How much did you receive if you do not mind? _____

29.Did you claim for compensation for any other OLD beside TB? □Yes □No

30.If yes, for what disease was it? _____

31.How long did it take you to get your claim paid this other OLD (in months or years)? _____

32.How much did you receive for this other OLD if you do not mind? _____

33.If claim(s) have not been paid, give the name of the office(s) where the claim was submitted. _____

34.When was that claim submitted (date)? _____

35.If you did not claim, do you have a certification letter from the MBOD? □Yes □No

36.Do you have reason(s) for not claiming? _____

37.Do you have any other information as mineworker you would like to share with us concerning compensation? _____

Thank you for your cooperation or collaboration

APPENDIX 5 PERMISSION FOR RESEARCH FROM MINISTRY OF HEALTH & SOCIAL WELFARE IN LESOTHO



Ministry of Health & Social Welfare
Private Bag A212
MASERU

25th August 2003

To Addressees

Dear Medical Superintendent,

RE: PERMISSION TO ACCESS PATIENTS AND THEIR RECORDS FOR RESEARCH ON TUBERCULOSIS AND COMPENSATION:A STUDY OF A SELECTION OF BASOTHO MINEWORKERS FROM MASERU DISTRICT

I have received and reviewed the protocol on the above topic together with Diseases Control Unit. We have no objection to the study being conducted and would appreciate your collaboration with the Principal Investigator (Dr. Lugemba Budiaki, Medical Officer, Ministry of Health & Social Welfare) to access him TB patients records and interviews with TB patients.

By this letter, the Ministry endorses the undertaking of this study which will involve the three Health Services Areas in Maseru District i.e. Queen II, St Joseph and Scott H.S.As

I thank you for your attention

Yours sincerely

DR. T. RAMATLAPENG
DIRECTOR GENERAL OF HEALTH SERVICES
MINISTRY OF HEALTH & SOCIAL WELFARE

ADDRESSEES
Medical Superintendent, Queen Elizabeth II Hospital
Medical Superintendent, St Joseph Hospital
Medical Superintendent, Scott Hospital