FACTORS CONTRIBUTING TO THE POOR ADULT TUBERCULOSIS REFERRAL SYSTEM IN LUSAKA URBAN, ZAMBIA

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A STUDY ON FACTORS CONTRIBUTING TO THE POOR ADULT TB REFERRAL SYSTEM IN LUSAKA URBAN, ZAMBIA.

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LIST OF ABBREVIATIONS

A.I.D.S   -   Acquired Immune Deficiency Syndrome.

B.C.G.   -   Bacillus Calmette Guerin

D.T.L.P.   -   District Tuberculosis and Leprosy Control Programme.

H.I.V.   -   Human Immune Deficiency Virus.

N.T.L.P.   -   National Tuberculosis and Leprosy Control Programme.

T.B.   -   Tuberculosis

U.T.H.   -   University Teaching Hospital

W.H.O.   -   World Health Organisation

DECLARATION

I hereby declare that the work presented in this study for a bachelor of science degree in nursing has not been presented wholly or in part for any other degree and is not being currently submitted for any other degree.
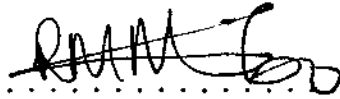
SIGNED . . . .

CANDIDATE

APPROVED . . . .

LECTURER

STATEMENT

I hereby certify that, this study is entirely the result of own independent investigations. The various sources to which I am indebted are clearly indicated in the text and in the references.

SIGNED . . . .

CANDIDATE

<u>DEDICATION</u>

This study is dedicated to Chadwick, Mum and Dad, Mr. and Mrs. Malambo, my brothers and sisters.

ACKNOWLEDGEMENTS

ABSTRACT

The main objective of this study was to analyse the current adult tuberculosis referral system in Lusaka Urban in order to identify factors contributing to the poor quality of the system and make recommendations to relevant authorities for appropriate action.

The study was conducted at the University Teaching Hospital Chest Clinic and eight health centres from the eight health centre Zones in Lusaka Urban. Data from 50 randomly selected patients currently on tuberculosis chemotherapy was collected using a semi structured interview schedule. Focus group discussions were used to collect data from chest clinic and health centre staff. A descriptive and explanatory study was undertaken.

Literature reviewed was based on patient, staff and the referral system factors that would affect the effectiveness of the Tuberculosis referral System.

Results from this study revealed that health workers involved in the treatment and control of tuberculosis had high theoretical knowledge on the current referral system. However, there was lack of communication between health centre and chest clinic, lack of contact tracing, follow up of referrals, and close supervision of patients' daily drug intake. There were long distances between chest clinic and patients residences, long waiting time at chest clinic, very ill patients were prescribed on ambulatory treatment and patients had minimal knowledge on the cause, treatment, prevention and control of tuberculosis. Health centres also had inadequate supply of drugs used in the treatment of tuberculosis.

From the above findings, it was recommended that the Tuberculosis and Leprosy control programme should have a policy on the follow up of referrals and a feedback system to ascertain the outcome of referrals, include public health nurses and environmental health officers at health centre level, hold frequent seminars for staff involved in the treatment of tuberculosis, intensify health education and provide all facilities necessary for the investigation, diagnosis and treatment of tuberculosis at health centres which were nearer patients' homes all in the effort of trying to improve case finding and case holding in Lusaka Urban.

1.0 INTRODUCTION

1.1 BACKGROUND INFORMATION

At no time in recent history has tuberculosis (TB) been as great a concern as it is today with a third of the world's population estimated to be infected with the mycobacterium tuberculosis, three million deaths occuring annually and the incidence rising by eight million every year. 95% of these TB cases occur in the developing world. In Sub-Saharan Africa and South East Asia, it is approximated that half the adult population aged between 20 to 40 years are infected with the mycobacterium tuberculosis (Pozniak, A.L. 1993).

In Zambia T.B. continues to be a major threat to public health with cases increasing from 8,500 in 1985, 25,000 in 1992 till 30,178 in 1993. It is estimated that there is a 15 to 20% annual increase in new TB cases in Zambia (Msiska, 1993). The world Health Organisation (WHO) attributes this increase to the Human Immune Deficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) infection.

Despite a cheap and effective cure, WHO says years of neglect have allowed the disease to spread and potent drug-resistant strains to emerge. Unfortunately doctors and public health officials have viewed the TB problem as unworthy of their attention. World countries have put in place TB control programmes and Well run programmes have already enabledcountries such as China, Chile, Honduras, Malawi, Malaysia and Tanzania to achieve cure rates of 80% or more (Bumgarner, 1994).

In Zambia, systematic TB control activities were initiated by the pre independence administration. After independence, the government established the National Tuberculosis Control Programme (N.T.P.) in 1964. In 1980 Leprosy
and TB control activities were integrated in the National TB and Leprosy Control Programme (N.T.L.P.), whose long term objectives are:-
i.   To reduce the incidence and prevalence of TB in Zambia.
ii.   To reduce morbidity and mortality from TB
iii.   To reduce physical and psycho-social suffering of the population from TB.

The government of the Netherlands has been supporting the N.T.L.P. since 1989 by supplying anti-tuberculosis drugs under the import- support programme of their government as requested by the Zambian Ministry of Health on a yearly basis.

Functions of the N.T.L.P. include organising diagnostic and curative services for TB patients. In the early 1980s, TB patients received the two months fully supervised initial phase of treatment in a general hospital or sanatorium. The next six months of chemotherapy was completed on ambulatory basis. Eventually the ambulatory treatment was extended to the initial phase of treatment due to the rise in the number of TB cases leading to a high demand for in patient facilities. (Elliot Anderson. 1992).

Ambulatory treatment is preferred because the family remains united and it is of low cost (Bradley, 1987). Prescription of treatment considers how the patient is referred and who is capable of supervising treatment in health centres. Patients must be carefully supervised because failure to complete the treatment can give rise to drug-resistant strains of the disease which can be costly or impossible to cure. The referral system is necessary and important in facilitating ambulatory treatment because health centres do not have TB investigation and diagnosing facilities.

In Zambia, patients on ambulatory treatment receive a two months supervised chemotherapy of streptomycin injection, isoniazid, rifampicin and pyrazinamide tablets. This initial phase is followed by a six months treatment of ethambutol and isoniazid. In older men, pregnant women and sputum negative cases, ethambutol is used in place of streptomycin.

The N.T.L.P. involves general health staff of the primary health care services in the control of TB in the community, health centres and hospitals. At health centres there is identification and referral of TB suspects to diagnostic centres, supervision of ambulatory chemotherapy, maintenance of TB treatment register tracing contacts and defaulters. The hospital level also identifies TB suspects, conducts investigations and diagnosis of TB, delivers treatment to in patients and refers patients back to nearest health centres for treatment (Anderson 1992).

The N.T.L.P. case finding and diagnosis of TB patients is based on the principle of passive case finding. In Lusaka urban, University Teaching Hospital (UTH) is the principle referral hospital for TB suspects. TB suspects are referred to filter clinic where they are seen by clinical officers who decide on further investigation, diagnostic procedures and admission of the patient. From filter clinic, all TB suspected clients required to give three early morning sputum specimens on three consecutive days are referred to the chest clinic for follow up of the diagnostic process. Only severely ill patients are admitted to hospital and chest clinic receives the names of these patients for follow up on the wards.

All patients with a chronic cough should have a chest X-ray to detect pulmonary TB and sputum examination for alcohol fast bacilli. Sputum samples from chest clinic are sent to

the chest disease Laboratory in National Scientific Research Centre in Chelston, Lusaka. TB diagnosis is made by radiological and bacteriological results. Newly diagnosed TB cases are entered in the chest clinic TB register. Patients on ambulatory treatment and those discharged from hospital are given treatment cards which are supposed to be kept at treatment centres and serve as a source of information for the TB register. Information entered in the register includes the case index number, name, address, type of TB, type of treatment, investigation results before start of treatment, onset of treatment, date of notification, occupation, next of kin, name of medical staff, health centre of referral, dates of admission and start of treatment for former in-patients.

Diagnosis, prescription of ambulatory treatment, chemotherapy regimen, registration and notification of TB patients is carried out at chest clinic. Then patients are referred or transferred back to nearest health centres with referral/transfer form MH/103/4/11 and a TB out patient's treatment record card medical form number 43. When patients report for treatment, health centre staff send a feedback to chest clinic on the outcome of their clients. Health centres also keep a register for dispensed drugs, daily patient attendances for treatment or review and a register for defaulters. Smear positive patients are referred back to hospitals for re investigation at two months, five months and at the end of treatment. Sputum Smear negative patients and patients with extra pulmonary TB are removed from the treatment register by the District TB control officer after completion of treatment or if absent for 3 months or in case of death. This system only applies to adult TB patients.

Children suspected of TB visiting the paediatrics outpatient department of UTH are admitted to general wards for investigations. After investigations children are discharged home and are given a review date when investigation results will be available. Children with sputum smear positive are referred to chest clinic for notification and there after go to clinic two for treatment under the supervision of a health worker. Very ill children are admitted to hospital until they recover. They are then discharged to clinic two after notification in chest clinic.

1.2   STATEMENT OF THE PROBLEM

Tuberculosis presents a major threat to the health of the population in Lusaka urban where a 388% increase was recorded in chest clinic in the last seven years (Msiska, 1993). The N.T.L.P recorded 6525 new cases in the year 1993.

The increase in the number of TB cases does not allow admission to the adult 1,055 bedded UTH. Only very ill patients are admitted for a maximum of two weeks while continuation of the remaining treatment is at the nearest health centre. To facilitate home treatment or ambulatory treatment, an effective referral system is necessary.

Unfortunately no organisational measures appear to have been taken to enable the health centres cope with the increased case load of patients who need daily supervised ambulatory treatment. In many instances patients are treated inadequately or lost sight of. The TB cure rate in Lusaka is estimated at 33.4% and a defaulting rate of 25.5% (Msiska et al 1993).

A study on "factors contributing to default of treatment among TB patients in Lusaka" by Ketata (1993) also indicated that the poor referral system had a strong bearing on the problem of defaulting. This researcher sought to study "factors contributing to the poor referral system for adult TB patients." There has been no study done on the subject in Zambia.

The researcher in this study sees an effective referral system to be one of the factors which could improve case finding and case holding in the effort of controlling the spread of TB in the community.

A poor referral system does not only increase the defaulter rate but can lead to delay in patients diagnosis and delay in starting anti-tuberculosis chemotherapy thereby complicating its treatment. Some patients may decide not to go to nearest health centres for treatment after all. These problems would prolong the dissemination of the mycobacterium to other members of the family thereby increasing the number of TB cases in the community even further.

The problem of poor referral system could be related to many factors linked with different aspects of the referral system itself. The assumptions are that,

- Inadequate communication between ward staff and the chest clinic, and between chest clinic and the health centre staff.
- Patients knowledge on TB
- Long distances between health centres and patients residency.
- Lack of referral follow up care considering that the disease is infectious and communicable.
- Inadequate knowledge on the referral system by health workers involved in TB control.
- Feed back of care from health centre staff to chest clinic.
- Patient's confidence in the nearest health centre.
- Availability of referral forms at chest clinic.

FACTORS CONTRIBUTING TO THE POOR ADULT TB REFERRAL SYSTEM

PATIENT FACTORS

- Knowledge on TB

- Confidence in the services
  offered at the health centre

- Severity of illness
- Distance from home to health
  centre.
- Waiting time before
  notification and referral.
- Socio-economic.

STAFF FACTORS

- Communication between ward staff and
  chest clinic and health centre staff and
  chest clinic

- Knowledge on the referral system.
- Attitudes towards TB patients.

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Poor
Adult
Referral
System
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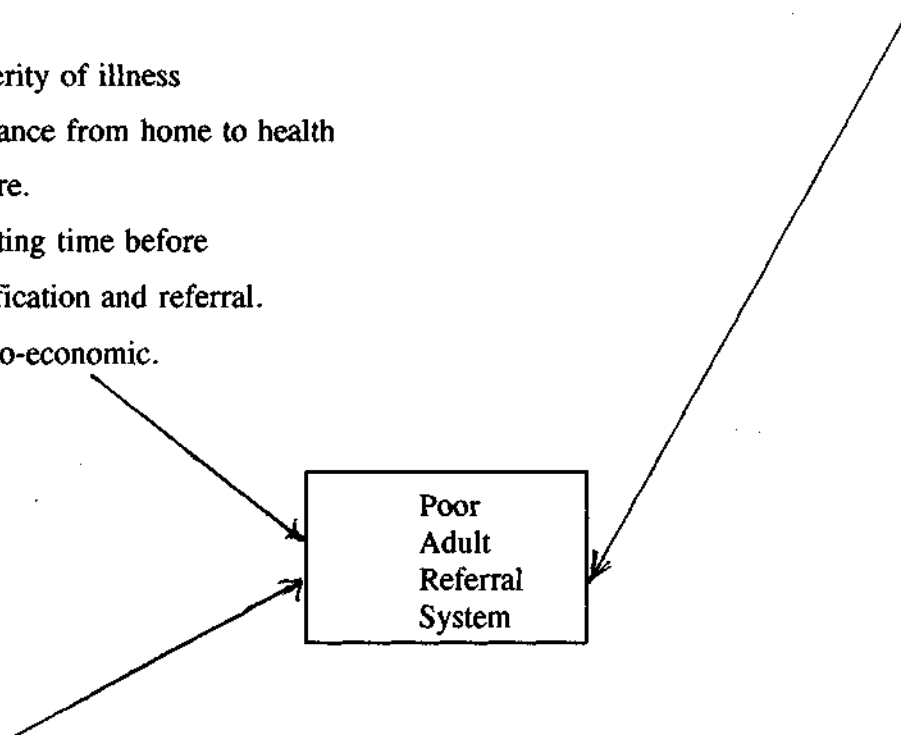
REFERRAL SYSTEM FACTORS

- Availability of referral forms

- Follow up of referrals

- Feed back system on referred cases

- Supervision of treatment

- Appropriateness of referral forms

1.3 LITERATURE REVIEW

INTRODUCTION

Tuberculosis is a specific droplet communicable disease caused by mycobacterium tuberculosis in man. Unfortunately TB carries with it stigma of being a disease of the poor. Consequently upper class people resent the diagnosis. General public health measures are important and can be enforced only if socio-economic conditions can be improved simultaneously. Public health education should be directed towards reduction of the spreading of the causative agent (Felsenfield 1966).

HIV is the strongest risk factor for the TB disease observed in the last 100 years in subjects infected with the tubercle bacilli. Its impact upon TB incidence is so great that it has disrupted the balance between the tubercle bacillus and the community (Styblo 1992).

TUBERCULOSIS TREATMENT

A successful medical programme ensures job satisfaction and job security for staff while providing better services for patients. A successful medical programme will also depend upon patients' cooperation which in turn depends upon patient's programme acceptability (Curry, 1975).

Patients with smear culture proven TB do not need to be hospitalised because chemotherapy can be initiated on an ambulatory basis. However some smear or culture positive patients who are toxic and generally too ill to be cared for at home, must be hospitalised for initial treatment (Bates et al 1975).

The NTLP plan of action in Zambia for 1994 to 1995 indicates that smear positive pulmonary TB cases should be treated on a short-course chemotherapy of, Daily

- Ethambutol or streptomycin, isoniazid,rifampicin and pyrazinamide for two months. Followed by six months of daily ethambutol and isoniazid.

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Smear negative pulmonary and extra pulmonary TB cases receive,

- Daily isoniazid, rifampicin and pyrazinamide for two months followed by six months of isoniazid and ethambutol.

According to Bumgarner (1994), patients must be carefully supervised during TB treatment to prevent development of drug resistant strains of the disease which can be costly or impossible to cure. The author further indicated that health workers must directly observe the swallowing of drugs, record it in a ledger and analyse the ledger for tangible results.

Charatan (1994) indicated similar findings. He attributed the reduction in TB cases in New York City to an increase in numbers of patients receiving directly observed treatment, in which a health worker observed a patient take every dose of anti TB treatment.

Chemotherapy has failed through being started too late. The acquisition of resistance during the course of treatment is associated with inadequate cooperation in taking anti TB drugs. Furthermore, Chronic tubercle bacilli excreters tend to be present due to inadequate hospital accommodation and patients treated at home where insufficient supervision could be attained (Miller, 1970).

CONTROL OF TUBERCULOSIS

The short chemotherapy is the cornerstone of TB control. Successful implementation of a national control programme requires political commitment and government structure (Glennon, 1992).

Control of TB largely depends on curing smear positive TB cases. Patients can be cured provided that they have a correct drug combination, taking the current dose regularly with proper combination. Failure to follow treatment means the patient can not be cured and may become infectious again or even worse, never become non infectious (Vennema, 1982).

According to Adetokumbo et al (1987), the TB Control Programme can consider the entire population in 4 groups.

i   -   Population with no previous exposure to the tubercle bacilli would require protection from infection.

ii   -   Population with healed primary infection have some immunity but must be protected from reactivation of disease and reinfection.

iii   -   Population with active disease require effective treatment and remain under supervision until they have recovered fully.

iv   -   Population with active disease but are not yet diagnosed. Without treatment the disease may progress further causing irreversible damage and a potential source of infection.

Low percentages for continuity and completion of treatment can be due to failure to provide an effective transition from an in patient to an out patient treatment setting, failure to provide policy on frequent supervision for ambulatory patients having difficulties in complying with treatment and failure to report defaulters. The control programme can be affected by inadequately trained incompetent, unmotivated and insufficient field staff (Vennema, 1982).

A study done in South Africa by Griffiths et al (1981), indicates that control measures in TB failed because of neglect of the socio-economic factors. The blame was also on inadequate chemotherapy, difficult in tracing defaulters and discharges from hospitals due to problems of communication and inadequate addresses.

Bubovsky (1987) identified traditional beliefs as causing TB control problems. He indicates that Blacks do not ask how the illness arose but rather the metaphysical why. Patients seek help from traditional healers thought to possess supernatural powers of spiritual significance. Traditional healers emphasize spiritual and religious healing rather than medical treatment. Often times patients are advised to discontinue treatment prescribed by health workers.

The control of TB also includes general improvement in housing nutrition, personal hygiene, immunisation with B.C.G., Chemoprophylaxis, case finding and treatment.

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PATIENT KNOWLEDGE OF TUBERCULOSIS

Education of patients and the general public, establishing good physician - patient communication and trust are necessary for increasing use of referral letters (Shirahama, et al 1991). Cauffman (1974) also indicates that for appropriate referral levels, agencies providing health information and referral services should consider including health education as an integral part of the service to motivate patients to effectively utilise the service.

A study done in women attending a Urodynamic Unit by Declan et al (1992), indicated that improved awareness of continence and urodynamic services would make patients more readily to refer themselves for treatment.

According to Crofton et al (1992), every patient with TB has to be educated on the cause of the disease, the treatment, prevention and control. Patients families are given the same information during contact tracing and follow up care. Local leaders and traditional healers can be educated to send patients suspected of TB to health centres for diagnosis and treatment. Traditional healers should be told that they would not cure the disease thereby giving themselves a bad reputation to community members.

THE REFERRAL SYSTEM

The referral of patients whose management is beyond the capabilities of community health workers and personnel in health centres is important in the developing countries. There is need to develop a mechanism whereby such cases can be referred to an appropriate higher level. If such a system does not exist or is not used promptly and efficiently, the study of this issue is of very priority and should be part of the effort made to develop and strengthen the health services (WHO 1984).

Referral services provide a vital link in the delivery of health care. The referral systems should be part of an integrated organisational structure in health care. Ideally, comprehensive referral services should be continuously accessible and available to all people in the community. Written records enable health workers perform referral follow up (Cauffman et al 1974).

In another article, Cauffman indicates that people referred for health care in some instances should be followed to determine the outcomes of these referrals. An on-line telecommunication patient tracking system was used to link referring agencies health care providers and patients themselves. Patients receiving care can also be motivated by committed follow up action by written notice or telephone calls from referral agencies.

Park (1986) also indicates that when a patient fails to collect his drugs on the due date, a letter can be written to him and in the event of no response in seven days, a home visit should be paid by the health staff. In a well organised control programme each officer does his best to get the patient treated while showing some concern and care.

COMMUNICATION IN THE REFERRAL SYSTEM

The NTLP in Zambia facilitates communication in the referral system using a Tuberculosis Referral/transfer form filled in triplicate. When patients report and register for treatment, health centre staff send a feed back to diagnosing hospital using the bottom part of the referral form.

Mercer-Mary Anne, et al (1987) in the study of TB risk among migrant farm workers in Delmarva Peninsula in America, facilitated referrals by completion of a detailed referral form which the patient carried to diagnosing and treatment agencies. All referral appointments were made by personal advocacy often requiring several phone calls to identify an agency which would accept the patient. They sometimes arranged referrals by direct phone calls and follow up of serious referred conditions was mandatory. Out reach nurses made regular visits to screen symptomatic workers and contacts to determine cases requiring clinic referral.

A closer cooperation at local level among consultants, general practitioners and other health workers would improve referrals. Diagnosis should always be reported back to first level referring officers (Tuck and Crick, 1991). A Telephone based information and referral help line is also useful in disseminating knowledge about resources to care givers (Coyne, 1991).

A significant variation in the amount of details in the referral letters was found in a psychiatry service among general practitioners. Low referrers wrote detailed letters while high referrers wrote less detailed letters. (Creed, et al 1990).

In a study done in a children's hospital in Cape Town, South Africa, it was found that the quality of letters influenced the writing of replies by hospital staff. The study indicated a need to develop ways of improving communication between hospital staff and referral agents for an effective health care service (Lachman and Stander, 1991).

Improved communication between hospitals and general practitioners would help general practitioners to make appropriate referrals and improve compliance (McGlade, et al 1988).

DISTANCE IN THE REFERRAL SYSTEM

Distance, convenience and friendliness are the most important factors in determining whether a patient wishes to go to a particular hospital or not. To make decisions of where to refer the patient, proximity, patient preference and perception of health facility, quality of general practitioner and patient's previous history of the health care service should be considered (Odell, 1983). Accessibility of health care services is also necessary to complete the required course of therapy (Micheal, et al 1993).

A study on dermatological referrals showed that the referrals fell both with distance to the dermatologist and with the number of supplementary procedures per consultation (Christensten, et al 1988). Warnakulasuriya, et al (1988) also indicates that compliance is greater when the screening area is nearer to the referral centre.

WAITING TIME IN THE REFERRAL SYSTEM

Success of a medical programme or service is adversely affected by long waiting time after registration. Patients wait for hours in an over crowded room on uncomfortable benches with extremely ill patients along side mothers and young children (Curry, 1975).

According to McGlade, et al (1988), prolonged waiting time from referral to appointment were significantly related to non-attendance at health institutions.

IMPROVING REFERRAL SYSTEMS

Currier (1977) indicates that early periodic screening, diagnosis and treatment would decrease referrals to health care services. It is a wise investment financially and an effective intervention to correct conditions like TB that would cause serious health impairment.

In another study on patients receiving alcohol counselling, it was concluded that the adoption of an alcohol screening programme in clinics, increased the number of patients appropriately referred for counselling (Gold-berg, et al 1991).

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Maintaining follow-ups on referral patients is of vital concern to general practitioners to establish the outcome of the referral. However, patients are likely to return to the medical centre and the general practitioner when referrals are initiated by a physician (Hsu and Liu, 1991).

Cooperation from patients is absolutely necessary if any medical service is to be successful. Service acceptability is key to success (Sharboro, 1993).

TB control can be made impossible by mal-distribution of health facilities and patients travelling long distances to health centres. However, patients can still be admitted to hospital due to the inefficiency of medical services outside hospitals and difficulty of improving them.

CONCLUSION

Literature reviewed indicates that patients' knowledge on tuberculosis, communication among health facilities involved in TB treatment, distance between patients homes and health facilities, waiting time and follow up of referrals can affect the effectiveness of the TB referral system.

1.4. OPERATIONAL DEFINITIONS

REFERRAL:-
Sending a patient to an investigating and diagnosing hospital which in turn sends the patient to the ward for admission or to the nearest health centre for treatment.

COMMUNICATION:-
Exchange of information between health centres, chest clinic and treatment wards on referred TB patients.

DISTANCE:
Time taken to get to health centres for treatment.

FOLLOW UP CARE:-
Health workers ensuring that all TB referred cases reach their intended health care level.

KNOWLEDGE OF THE REFERRAL SYSTEM: Health workers ability to state how the referral system works and inform patients adequately.

SOCIO-ECONOMIC STATUS:
Patients residential area, level of education and monthly earnings.

NEGATIVE ATTITUDE:-
Use of unkind words and lack of communication between health staff and patients.

CARING:-
Staff taking time to explain disease, treatment and drug reactions to patients and listening when patients give complaints.

1.5. CUT OFF POINTS

Knowledge on TB	High -	Ability to state cause, mode of spread treatment, prevention and control of TB.
	Moderate -	Ability to state some of the above.
	Low -	Ability to state one of the above.
	No -	Inability to state any of the above
Distance	Far -	More than one hour's walk to health centre.
	Near -	Less than 1 hour's walk to health centre.
Waiting time	Long -	More than 30 minutes before patients are given referral letters to take to health centres.
	Short -	Less than 30 minutes before patients are given referral letters.
Communication	Good -	Patients report with adequate information in referral letters OR Health personnel inform each other about referred patients.
	Poor -	Patients report inadequate information in referral letters OR health personnel do not inform each other about referred patients.
Feed back	Present -	When referring centre gets a message about referred patients.
	Not -	Referring centre does not get message about referred patients.
Knowledge on the referral system	High -	Ability to explain the referral system.
	Moderate -	Ability to explain some aspects of the referral system.
	Low -	Inability to explain most aspects of the referral system.
Social Class	High -	Lives in low density area, went to school at college or University level and earns above K100,000.00
	Medium -	Lives in medium density area, went to school at secondary school level and earns between K100,000.00 and K50,000.00.

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Social Class (Continued)	Low -	Lives in a high density area, went to school at primary level or had no formal education and earns less than K50,000.00.
Patients condition	Very ill -	Inability to walk
	ill -	Weak, but able to walk with support.
	Less ill -	Ability to walk or ambulant.

CHAPTER 2

OBJECTIVES

2.1   GENERAL OBJECTIVE

To analyse the current adult tuberculosis referral system in order to identify factors influencing the poor quality of the system and make recommendations to relevant authorities for appropriate action.

2.2   SPECIFIC OBJECTIVES

2.2.1   To describe the current TB referral system in Lusaka Urban.

2.2.2   To determine whether the patient's confidence in the services of the health centres of referral contributes to the poor referral system.

2.2.3   To establish whether the patient's condition on discharge from hospital affects the effectiveness of the referral system.

2.2.4   To determine whether patients' knowledge on TB affects the effectiveness of the referral system.

2.2.5   To determine whether availability of drugs at health centres contributes to the poor TB referral system.

2.2.6   To establish whether distance to health centres and waiting time at chest clinic, contributes to the poor TB referral system.

2.2.7   To determine whether the socio-economic status of patients contributes to the poor referral system.

2.2.8   To ascertain whether health workers supervise drug intake for TB patients.

2.2.9   To utilise study results to make recommendations to relevant authorities or action.

2.2.10   To identify areas for further research.

CHAPTER 3

METHODOLOGY

3.1 RESEARCH DESIGN

A descriptive and explanatory research design was used. It involved systematic collection and presentation of data in an effort to clearly show the cas al effect relationship between the dependent and independent variables.

The study was quantitative in that data collected was quantified in numerical values and percentages for easy manipulation and for the purpose of making statistical inferences. The study was also qualitative as it sought to identify and explore factors contributing to the poor adult TB referral system.

3.2 RESEARCH SETTING

The study was carried out in Lusaka the capital city of Zambia. The city has a population of 1,191,680 according to the 1990 census report. It is served by two main hospitals, U.T.H. and Maina Soko Military Hospital. There are also twenty two health centres in planned townships, several other private hospitals and clinics involved in the health care of Lusaka's Population.

The study was conducted in U.T.H. chest clinic and in Lusaka urban health centres. Chest clinic was chosen because it is the main centre which investigates and diagnose TB in Lusaka. The clinic attends to an average of hundred patients in a day. Patients who are prescribed on anti TB treatment are referred to health centres in Lusaka. These health centres were included in the study because they are the main centres that treat patients with TB referred from chest clinic.

SAMPLE SELECTION

3.3   STUDY POPULATION

The study population included two study samples. The first sample were male and female patients with tuberculosis above the age of 16 years. Patients included those who were once admitted to UTH medical wards for tuberculosis and those prescribed on ambulatory treatment in health centres. These patients were chosen to provide information on factors affecting the referral system from the hospital wards to chest clinic and from chest clinic to health centres.

The second sample were clinical officers and nurses at chest clinic and health centres. The staff were included in the study because they are the main health workers involved in the referral system of patients with tuberculosis.

3.4   SAMPLING METHOD

3.4.1. SAMPLING OF PATIENTS

A sample of fifty patients was selected by simple random sampling used as part of stratified random sampling.

The first strata were patients with TB at health centres in Lusaka urban divided into eight Zones. The lottery method in simple random sampling was used to select one health centre from each Zone. The patients' TB register was used as a sampling frame to choose patients using simple random sampling from each health centre stratum.

The sample size was 50 from a population of about 350 patients with tuberculosis from 8 health centres, appearing in the TB registers of patients on TB treatment between March and June, 1994.

$$\text{Sampling fraction} \quad \frac{50}{350} = \frac{1}{7}$$

To select the patient sample size from each health centre, the sampling fraction was multiplied by the total population of patients in the TB register. Between 5 and 9 patients were chosen from each health centre.

This sampling method was chosen because it increased the availability of adequate lists of patients referred to health centres who were still on anti TB chemotherapy. The method also ensured that all health centres and TB patients in Lusaka Urban had equal chances of being selected in the study, and then results from the study can be generalised.

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3.4.2 SAMPLING OF STAFF

The staff were selected from chest clinic and two health centres in Lusaka urban using simple random sampling. Health centres included in the study were selected using the lottery method where names of health centres were written on pieces of separate papers. Two papers were picked which had names of health centres to select the staff from. Since not all staff would have been present at the health centres on each day of the week, one day of the week was selected from each of the two health centres using the lottery method.

The sampling method ensured that all health centres and staff involved in the care of patients with TB had equal chances of being selected in the sample. It also eliminated biasness in the selection of study subjects.

3.5   DATA COLLECTION TECHNIQUE

Data from the patient sample was collected using a semi structured interview schedule. A focus group discussion was used for collecting data from staff at chest clinic and the two health centres in Lusaka Urban.

3.5.1 A SEMI STRUCTURED INTERVIEW SCHEDULE

This data collection tool was used to collect data from the patient sample. Questions were written in English but were translated into the four main Zambian languages (Bemba, Tonga, Nyanja and Lozi) appropriate to respondents during interviews. The interview schedule was chosen for collection of data for the following advantages.

1.   The interview allowed for further probing of some questions to get correct responses.

2.   The researcher was able to rephrase some questions without changing the original meaning since study elements included both literate and illiterate TB patients.

3.   The researcher minimised the amount of incomplete responses by ensuring that all questions were answered.

4.   A high response rate was assured as the researcher and the research assistant conducted the interviews.

The disadvantage of this tool was that the presence of the researcher and the research assistant would have influenced the subjects response. This limitation was controlled by explaining the purpose of the study and introducing the interviewers.

3.5.2 A FOCUS GROUP DISCUSSION

A focus group discussion guide was developed for the staff as a data collection tool. The discussions sought to gather information on what health staff consider to be factors contributing to the poor adult referral system and offer suggestions on how the system can be improved.

A focus group discussion was chosen because it facilitated a free discussion. The researcher was able to collect in depth information about the referral system, its problems and possible solutions to these problems.

3.6   PILOT STUDY AND PRE TESTING

The pilot study was conducted in the forth week of June 1994 at the chest clinic in U.T.H. The pre test assessed the suitability, clarity and arrangement of the interview schedule and the focus group discussion guide.

The original questionnaire had 31 questions but after the pre testing, the researcher discovered that responses from questions 15 and 16 were similar to responses from question 18 and 19 on the interview schedule. Questions 15 and 16 were removed and the final number of questions was reduced to 29. The sequencing of questions was also changed, question 29 was initially question 23. Questions were re arranged because patients were asked to give suggestions for the improvement of the referral system before the end of the interview.

3.7   DATA COLLECTION

Data collection commenced after written permission from the U.T.H. Director and the Director of Public Health. Data was collected between 01.07.94 and 09.08.94.

3.8   ETHICAL CONSIDERATIONS

Before conducting the study, written permission was sought from the U.T.H. Board Executive Director and the Director of Public Health at Lusaka Urban District Council. the researcher also obtained verbal consent from individual patients and staff who participated in the study so that they understand the nature and purpose of this research and to assure them of confidentiality.

3.9   LIMITATION OF THE STUDY

It was not possible to conduct the study on a large scale with a larger sample size due to limited time in which the study was to be completed and submitted to the University of Zambia.

Time for data collection stretched over one month because the interview with each patient lasted at least seven minutes. As a result few patients were interviewed in a day considering that the researcher had to attend lectures during the period of data collection.

The researcher had to travel to some health centres several times which increased the cost of transport.

The other limitation was that the researcher could not include patients who did not report to the health centres of referral in the study sample due to inadequate documentation of home addresses and the unsystematic arrangement of houses and house numbers in most of the Compounds in Lusaka.

However, this did not effect study results because respondents interviewed at health centres provided responses to study questions and clarified the assumptions.

Results from this study could not be generalised to all TB referral systems since the sample was restricted to Lusaka Urban.

CHAPTER 4

ANALYSIS AND PRESENTATION OF DATA

Data from TB patients was collected using a structured interview schedule. Focus group discussions were used to collect data from staff involved in the care of TB patients.

All interview schedules were checked for accuracy, completeness and consistency in responses. Responses from open ended questions were categorised and coded. All responses to variables were coded using numerical codes in nominal and ordinal scales.

The coded data was entered on a coding sheet to create a data matrix record. Analysis of data was by computer using EPI-INFO Software. Descriptive Statistics using frequency distribution and percentages were used in tabulating data. Inferential statistics were used to ascertain the significance of cross tabulations using chi square, p values, mean and standard deviation.

Tabulated data was presented in single and cross tabulated tables to conserve space, for easy interpretation and for the purpose of drawing meaningful inferences.

Figure 1
Sex of Respondents
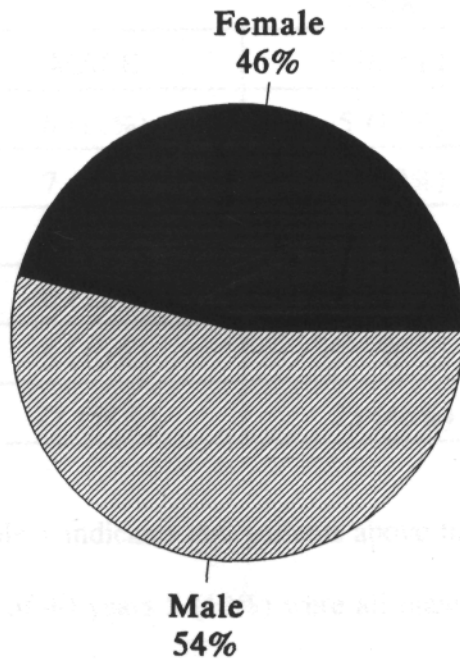
Female
46%

Male
54%

Figure 2
Sex of Respondents in Relation to Age

Age Group

■ Males ▨ Female
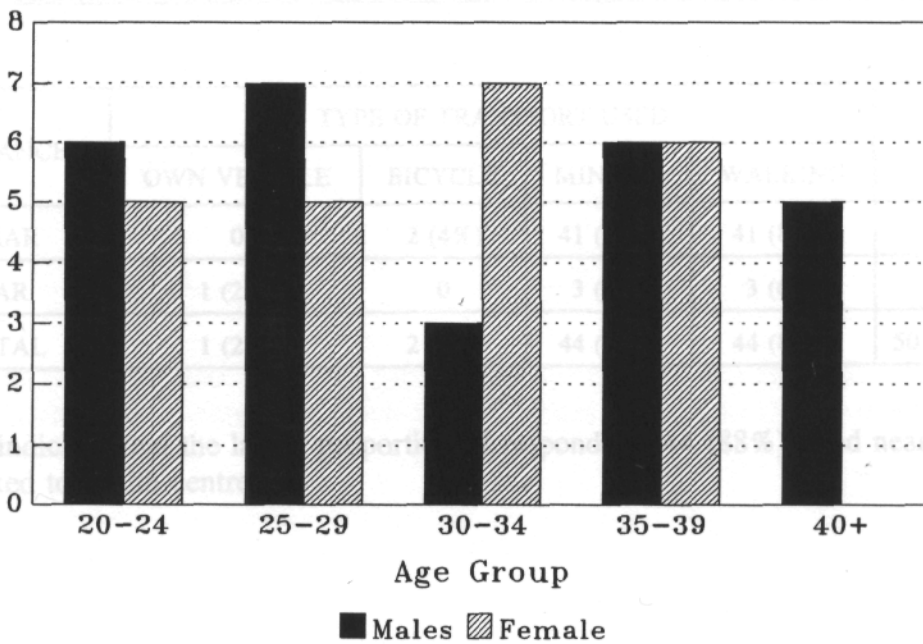
TABLE 1: SEX OF RESPONDENTS IN RELATION TO AGE

AGE	SEX		
	MALE	FEMALE	TOTAL
20-24	6 (12%)	5 (10%)	11 (22%)
25-29	7 (14%)	5 (10%)	12 (24%)
30-34	3 (6%)	7 (14%)	10 (20%)
35-39	6 (12%)	6 (12%)	12 (24%)
40 and above	5 (10%)	0	5 (10%)
TOTAL	27 (54%)	23 (46%)	50 (100%)

Table 1 indicates that patients above the age

of 40 years 5 (10%) were all males.

TABLE 2: DISTANCE BETWEEN HEALTH CENTRES AND RESPONDENTS' RESIDENCES IN RELATION TO TYPE OF TRANSPORT USED

DISTANCE	TYPE OF TRANSPORT USED				TOTAL
	OWN VEHICLE	BICYCLE	MINIBUS	WALKING	
NEAR	0	2 (4%)	41 (82%)	41 (82%)	44 (88%)
FAR	1 (2%)	0	3 (6%)	3 (6%)	6 (12%)
TOTAL	1 (2%)	2 (4%)	44 (88%)	44 (88%)	50 (100%)

Table 2 indicates that the larger proportion of respondents 44 (88%) lived near
and walked to health centres.

TABLE: 3 PATIENT'S SEX IN RELATION TO SUPERVISION OF DRUG INTAKE

SEX	SUPERVISOR			TOTAL
	RELATIVE	SELF	HEALTH WORKER	
FEMALE	20 (40%)	3 (6%)	0	23 (46%)
MALE	13 (26%)	14 (28%)	0	27 (54%)
TOTAL	33 (66%)	17 (34%)	0	50 (100%)

Table 3 indicates that none of the patient's drug intake was supervised by

a health worker 33 (66%) were supervised by relatives.

TABLE 4: INITIAL REFEREE OF PATIENTS TO UTH IN RELATION TO PATIENTS WHO WERE GIVEN REFERRAL LETTERS

REFEREE	REFERRAL LETTER		TOTAL
	YES	NO	
HOSPITAL STAFF	1 (2%)	0	1 (2%)
HEALTH CENTRE	19 (38%)	1 (2%)	20 (40%)
PRIVATE	5 (10%)	0	5 (10%
SELF	0	24 (48%)	24 (48%)
TOTAL	25 (50%	25 (50%)	50 (100%)

Table 4 indicates that about half, 24 (48%) respondents were self referrals, 25 (50%) referred respondents were given referral letters to carry to UTH while 1 (2%) were not given referral letters.

TABLE 5: RESIDENTIAL AREAS IN RELATION TO MONTHLY

EARNINGS OF RESPONDENTS

RESIDENTIAL AREA	MONTHLY EARNINGS IN KWACHA				TOTAL
	ABOVE 100,000	50-100,000	10-50,000	LESS 10,000	
HIGH DENSITY	3 (6%)	10 (20%)	19 (38%)	6 (12%)	38 (76%)
MEDIUM DENSITY	-	4 (8%)	6 (2%)	1 (2%)	11 (22%)
LOW DENSITY	-	-	1 (2%)	-	1 (2%)
TOTAL	3 (6%)	14 (28%)	26 (52%)	7 (14%)	50 (100%)

Table 5 shows that 38 (76%) respondents lived in high density areas or

compounds and 26 (52%) earned between K10,000 and K50,000 a month.

TABLE 6: OUTCOME OF REFERRAL AND REASON FOR ADMISSION TO UTH

OUTCOME OF REFERRAL	REASON FOR ADMISSION		TOTAL
	TOO ILL	FURTHER INVESTIGATIONS	
ADMITTED TO UTH	16 (32%)	7 (14%)	23 (46%)
REFERRED BACK TO HEALTH CENTRE FOR TREATMENT	-	-	24 (48%)
GIVEN ANTIBIOTICS	-	-	3 (6%)
TOTAL			50 (100%)

Table 6 indicates that 23 (46%) of respondents were admitted to UTH of which

16 (32%) were too ill.

TABLE 7: REASON FOR ADMISSION IN RELATION TO MODE OF PATIENTS ON DISCHARGE N=23

REASON FOR ADMISSION	MODE OF DISCHARGE			TOTAL
	REFERRED TO CHEST CLINIC	GIVEN A REVIEW DATE	GIVEN ANTIBIOTICS	
TOO ILL	15 (30%)	0	1 (2%)	16 (32%)
FURTHER INVESTIGATIONS	5 (10%)	1 (2%)	1 (2%)	7 (14%)
TOTAL	20 (40%)	1 (2%)	2 (4%)	23 (46%)

Table 7 shows that out of 23 (46%) patients who were admitted, 20 (40%) were referred to chest clinic on discharge.

TABLE 8: REASON FOR ADMISSION IN RELATION TO PATIENTS CONDITION ON DISCHARGE N=23

REASON FOR ADMISSION	CONDITION ON DISCHARGE			TOTAL
	COULD NOT WALK	WALKED WITH SUPPORT	AMBULANT	
TOO ILL	5 (10%)	5 (10%	6 (12%)	16 (32%)
FURTHER INVESTIGATIONS	1 (2%)	0	6 (12%)	7 (14%)
TOTAL	6 (12%)	5 (2%)	12 (24%)	23 (46%)

Table 8 indicates that out of the 16 (32%) patients who were too ill on admission, 5 (10%) could not walk on discharge.

TABLE 9: LEVEL OF EDUCATION IN RELATION TO TIME TAKEN BEFORE REPORTING TO HEALTH CENTRES FOR TREATMENT

LEVEL OF EDUCATION	TIME TAKEN IN DAYS			TOTAL
	4 - 6	4 - 6	7 AND ABOVE	
COLLEGE	3 (6%)	0	0	3 (6%)
SECONDARY	20 (40%)	0	1 (2%)	21 (42%)
PRIMARY	19 (38%)	1 (2%)	4 (8%)	24 (48%)
NONE	2 (4%)	0	0	2 (4%)
TOTAL	44 (88%)	1 (2%)	5 (10%	50 (100%)

Table 9 indicates that regardless of the level of education, 44 (88%)

respondents reported to health centres within 1 and 3 days of referral.

TABLE 10: PATIENTS KNOWLEDGE ON TB IN RELATION TIME TAKEN TO REPORT TO HEALTH CENTRES

TIME TAKEN BEFORE REPORTING	KNOWLEDGE ON TB			TOTAL
	HIGH	MODERATE	LOW	
1 - 3 DAYS	7 (14%)	14 (28%)	21 (42%)	44 (88%)
4 - 6 DAYS	0	1 (2%)	0	1 (2%)
7 AND ABOVE	0	2 (4%)	3 (6%)	5 (10%)
TOTAL	7 (14%)	17 (34%)	26 (52%)	50 (100%)

Table 10 indicates that all the 7 (14%) of respondents who had high knowledge reported for treatment within 1 to 3 days.

TABLE 11: PATIENTS KNOWLEDGE ON TB AND DURATION OF TREATMENT IN RELATION TO PATIENTS ADMITTED AND THOSE NOT ADMITTED

KNOWLEDGE	OUTCOME OF REFERRAL			TOTAL
	ADMITTED	REFERRED TO H/C	GIVEN ANTIBIOTICS	
HIGH	7 (14%)	9 (14%)	-	7 (14%)
MODERATE	7 (14%)	9 (18%)	1 (2%)	17 (34%)
LOW	16 (32%)	8 (16%)	2 (4%)	26 (54%)
TOTAL	23 (14%)	24 (48%)	3 (6%)	50 (100%)

Table 11 indicates that more than half of the patients 26 (52%) had low knowledge on TB.

TABLE 12: RESPONDENTS WHO WERE REFERRED BACK TO HEALTH CENTRES WITH TREATMENT CARDS AND REFERRAL LETTERS.

WHAT PATIENT WAS GIVEN	FREQUENCY	PERCENTAGE
REFERRAL LETTER AND TREATMENT CARD	4	8%
REFERRAL LETTER ONLY	1	2%
TREATMENT CARD ONLY	45	90%
TOTAL	50	100%

Table 12 indicates that majority of patients 45 (90%) were only given treatment cards without referral letters.

CHOICE	REASON				AVOID DISEASE TRANSMISSION TO FAMILY	TOTAL
	NEAR RESIDENCE	STAFF CARING	DRUGS AVAILABLE	FOR DOCTOR'S CARE		
UTH WARD	0	1 (2%)	0	0	1 (2%)	2 (4%)
CHEST CLINIC	0	11 (22%)	2 (4%)	11 (22%)	0	24 (48%)
HEALTH CENTRE	17 (34%)	1 (2%)	1 (2%)	0	0	19 (38%)
PRIVATE CLINIC	0	2 (4%)	0	3 (6%)	0	5 (10%)
TOTAL	17 (34%)	15 (30%)	3 (6%)	14 (28%)	1 (2%)	50 (100%)

Table 13 indicates that 17 (34%) respondents would rather be treated near

their residences, 15 (30%) would like to be treated where staff show that they

care and 14 (28%) patients prefer to be treated where they can be seen by

Doctors.

TABLE 14: REASONS GIVEN BY PATIENTS WHO DID NOT PREFER TO BE TREATED AT HEALTH CENTRES N = 34

REASONS	FREQUENCY	PERCENTAGE
DRUGS NOT ALWAYS AVAILABLE	20	40%
STAFF ARE LESS CARING	11	22%
STAFF HAVE BAD ATTITUDE	2	4%
LONG WAITING TIME BEFORE TREATMENT	1	2%
TOTAL	34	68%

Table 14 indicates that 20 (40%) of patients did not choose health centre
treatment because drugs are not always available.

TABLE 15: PROBLEMS ENCOUNTERED BY PATIENTS BETWEEN THE WARDS AND CHEST CLINIC IN RELATION TO SUGGESTED SOLUTIONS N=16

PROBLEMS ENCOUNTERED	REASON				TOTAL
	PROVIDE WHEEL CHAIR	GIVE ADEQUATE INFORMATION	MORE STAFF NEEDED	IMPROVE FILLING SYSTEM	
NO WHEEL CHAIR	4 (8%)	0	0	0	4 (8%)
INADEQUATE EXPLANATION	0	1 (2)	0	1 (2%)	2 (4%)
NOT ACCOMPANIED	1 (2%)	0	0	1 (2%)	2 (4%)
LONG WAITING TIME	0	0	8 (16%)	0	8 16%)
TOTAL	5 (10%)	1 (2%)	8 (16%)	2 (4%)	16 (32%)

Table 15 indicates that 8 (16%) respondents suggested that more staff are needed at chest clinic.

TABLE 16: SUGGESTIONS GIVEN TO THE IMPROVEMENT OF THE ADULT TB REFERRAL SYSTEM n = 41

SUGGESTED SOLUTION	FREQUENCY	PERCENT AGE
PROVIDE TRANSPORT (AMBULANCE)	30	60%
HAVE DRUGS AT HEALTH CENTRES ALWAYS	1	2 %
ALL SERVICES FOR TB TREATMENT TO BE AT HEALTH CENTRE	6	12%
MORE STAFF NEEDED AT CHEST CLINIC	4	8 %
TOTAL	41	82%

Table 16 indicates that 30 (60%) respondents suggested that transport should

be provided for patients from and to health centres.

FOCUS GROUP DISCUSSION RESULTS

Three focus group discussions were held with staff in three health centres. Number of participants in each group were 3, one clinical officer and two nurses. A clerk responsible for notification of TB patients participated in one of the group discussions.

The purpose of the discussion was to:-

1.   Describe the adult TB referral system between the ward and chest clinic, chest clinic and health centres and assess the feedback system.

2.   Ascertain problems in the referral system at chest clinic, health centres and hospital wards.

3.   Find measures to be taken in order to improve the referral system at chest clinic, health centres and hospital wards.

Discussion results were as follows,

DESCRIPTION OF THE CURRENT ADULT TB REFERRAL SYSTEM

Self referrals and patients referred by health workers are first seen at filter clinic where they are re-examined. Patients who are very ill and those requiring further investigations are admitted to medical wards. Less ill patients suspected of having TB are sent for chest X-rays. Depending on X-ray results, some patients are started on antibiotics while others are referred to chest clinic for sputum examination. Patients who do not respond to antibiotics are referred to chest clinic for sputum examination.

Patients are asked to submit 3 sputum specimens after 3 days of initial screening. There after they are given a week's appointment when sputum results are expected to be ready. It takes an average of two weeks before patients are notified and started on anti-tuberculosis chemotherapy.

Patients notified are recorded in the TB register, given a TB number and a TB treatment card to carry to nearest health centres. The chest clinic has no referral forms for patients to carry to health centres of treatment. Patients admitted to hospital are discharged through chest clinic for continuation of treatment.

Patients whose sputum is acid alcohol fast bacilli positive are reviewed at chest clinic after two months for repeating the chest X-ray and sputum examination to ascertain response to chemotherapy. They are again reviewed at five and eight months before they are discharged from treatment.

Patients with a negative sputum result and those with extrapulmonary TB are reviewed after four to five months. All patients who react to anti TB drugs are referred to chest clinic for treatment. Health Centres review and supply drugs to patients once a month.

There is no feed back mechanism in the TB referral system at the moment because of lack of referral forms.

One health centre included in this study, conducts sputum examinations in its laboratory and starts patients on anti TB drugs. These patients are sent to chest clinic for chest X-rays, notification and review dates. Patients with negative sputum results and those suspected of extrapulmonary TB are referred to chest clinic for further management.

Health centres send monthly returns of numbers of patients on TB treatment in their clinic to chest clinic.

PROBLEMS IN THE REFERRAL SYSTEM

i CHEST CLINIC

a.   The two weeks taken to investigate patients is too long as patients condition may worsen or may lose the patients before they are started on treatment.

b. The three visits before commencement of treatment and subsequent reviews before discharge are expensive for patients.

c. Some patients do not get chest x-rays on time because of lack of x-ray films or due to machines being out of order. It sometimes takes a month for some patients to be x-rayed.

d. Some patients are re-examined due to misplaced or lost sputum results.

e. Patients who do not come for review are not followed up and no reminders are sent because of lack of transport. These patients are brought back after some months in a critical condition.

f. There is congestion at the clinic as a result patients went for a long time before they are seen.

g. Lack of referral forms.

ii HOSPITAL WARDS

a. Patients are discharged while very ill regardless of whether they can walk or not.

b. Discharged patients take it upon themselves to report to chest clinic or decide to go home.

iii HEALTH CENTRES

a. Shortage of anti TB drugs, needles, syringes and water for injection.

b. Patients have less trust in staff as a result, they report all their problems to chest clinic creating congestion.

c.   Some patients do not report to health centres the next day after discharge from hospital as a result they miss some injections.

d.   Health centres with laboratories lack protective clothing to be able to carry out sputum examinations without risks.

e.   Lack of transport for following up referred patients.

SUGGESTIONS ON HOW THE ADULT TB REFERRAL SYSTEM CAN BE IMPROVED

i CHEST CLINIC

a.   The clinic should have a portable x-ray machine and a laboratory for sputum examinations so that patients are not lost and reduce on defaulters.

b.   The clinic requires a ward for patients who are still very ill and can not walk after discharge from hospital.

c.   Transport is required for following up referrals and defaulters.

ii HEALTH CENTRES

a.   To improve case holding, patient care, communication and feed back on referred patients, staff from health centres concerned with TB treatment and chest clinic staff should hold meetings at least once a month.

b.   Health centres should have portable x-ray machines and laboratories for sputum examinations so that TB patients are solely treated at health centres. Only relapses, drug reactors and complicated cases should be referred to UTH.

c.   Transport should be provided for each health centre to be used for taking own sputum to chest disease laboratory to cut down on patients transport expenses between UTH and health centres.   Transport would be used to follow up referrals and defaulters.

d.   Improve drug supply and other materials used in the treatment of TB.

e.   High energy and protein supplement should be given to TB patients to improve their nutritional status.

CHAPTER 5

DISCUSSION OF FINDINGS, IMPLICATIONS TO THE HEALTH SYSTEM, SUMMARY AND CONCLUSION

The objective for the study was to analyse the current adult TB referral system, identify factors influencing the poor quality of the system and make recommendations to relevant authorities for action.

To meet this objective, data was collected from fifty (50) patients still on TB treatment from eight (8) health centres in Lusaka urban. Data was also collected from staff in three health centres. Raw data was carefully analyzed by computer to establish the causal effect of the independent variables on the dependent variables as a basis for making inferences.

The study sample included TB patients between twenty and 60 years of age. More than three quarters of respondents lived in high density areas or shanty compounds as they are commonly called (Table 5). Incidentally about half of respondents had a low education level an indication that TB was still more prevalent among people from the lower social class.

5.1   DISCUSSION

The purpose of the study was to identify factors contributing to the poor adult TB referral system. Results from this study revealed that some of those factors were:--

5.1.1   THE CONDITION OF PATIENTS PRESCRIBED ON AMBULATORY TREATMENT

Patients prescribed on ambulatory treatment are supposed to be ambulant to be able to walk, cycle or drive to health centres for treatment. This was not the case in Lusaka urban where results from this study showed that patients were discharged from UTH medical wards while

they were very ill and unable to walk. Prescribing very ill patients on ambulatory treatment was attributed to limited bed capacity and facilities in medical wards which can not cope with the increasing number of patients with TB. Some of these patients went to health centres on bicycles or wheel barrows with the help of relatives, while some went by taxi which the majority could not always afford because of their low socio-economic status (Table 5).

Prescribing ambulatory treatment to very ill patients contravenes the W.H.O's criteria for an ideal ambulatory treatment. According the W.H.O. drug acceptability in domiciliary TB control program, patients on ambulatory treatment should be ambulant. Severely ill patients and those with complications should be admitted to hospital.

Ambulant patients are likely to follow the referral system and start chemotherapy early in order to recover. The study revealed that patients who were very ill and unable to walk on discharged, delayed in reporting to health centres and missed daily streptomycin injection as they stayed at home until they were able to walk. Failure of patients to report early and defaulting of treatment can lead to failed chemotherapy and acquisition of resistance to treatment thereby delaying patient recovery.

In view of the above, medical personnel concerned with the discharge of patients, should ask patients whether they would be able to go to health centres for treatment in the condition they are in. Patients who would not manage to go to the health centres to continue with treatment, should be treated on the medical wards until they are ambulant in order to improve compliance to treatment and promote recovery.

5.1.2 COMMUNICATION BETWEEN CHEST CLINIC AND HEALTH CENTRES AND FEED BACK OF REFERRALS.

Communication between health centres and chest clinic through referral letters and monthly returns would enable staff in the referral system, know how many patients were referred to each health centre, how many patients reported to health centres for treatment and the number of patients who defaulted or died.

This knowledge would help health workers to follow up patients who did not report to health centres considering that TB is an air borne communicable disease which needs to be treated to control its spread in the community.

However, the study results revealed that only 10% of respondents were given referral letters to carry to health centres of referral. It means that there is lack of communication between health facilities involved in the treatment of TB patients. Lack of communication was attributed to lack of referral forms which provide for feedback to the referring health facility. Since there is no communication and feedback on referrals, many patients do not follow the referral system while others default or die without the knowledge of the health workers in the referral system.

Lackman, et al (1991) in his study on the referral letter a problem of communication, said that there was need of developing ways of improving communication between hospital staff and referral agents to improve compliance to treatment. Staff in the TB referral system should communicate by use of referral letters or written letters indicating names and addresses of patients referred to each health centre. The staff should also provide feed back on referrals for an effective referral system. Lachman (1991) further discovered that the quality of letters influenced the writing of replies by hospital staff at Red Cross War Memorial Children's hospital in Cape Town, South Africa.

Meetings or seminars for all health workers in the TB referral system should be held to improve communication. These meetings would discuss the number of referrals during that period, problems in the referral system and possible solutions, all in an effort to try and improve case finding and case holding.

5.1.3 PATIENTS CONFIDENCE IN HEALTH CENTRES OF REFERRAL

To have an effective referral system, referring officers should consider the patients confidence in the health centres of referral. This would determine whether patients will go to the health facility or not as discovered by Odell A (1983) in his study on patient referrals in London. Since the aim of health workers is to have all patients with TB treated, patients should be referred to health centres of choice so that they could comply to treatment.

In this study, patients were asked to choose a health facility where they would prefer to be referred for treatment. Nearly half (Table 13) chose chest clinic because staff were more caring, drugs were always available and Doctors and specialised staff were available. Msiska R (1993) in his study on factors contributing to congestion of patients at U.T.H. chest clinic, also found that patients preferred U.T.H. chest clinic for the treatment of TB because of availability of better facilities, Doctors and specialised staff.

When patients made choices of health facilities they preferred to attend for treatment, 34% chose the nearest health centres because they would not have to pay for transport. However, these patients were not satisfied with services at the health centres as indicated in table 14. Reasons were lack of drugs, less caring staff, staff had negative attitudes and long waiting hours before they were attended to. These results indicate that chest clinic refers patients to health centres regardless of the above inadequacies. This would make the referral system poor or ineffective in that patients may decide not to go to health centres of referral for treatment. Patients who do not report for TB treatment continue being a public health hazard as they continue spreading the tubercle bacilli in the community.

Health centres should have enough drugs and facilities necessary for the treatment of patients with TB, before patients are referred there. Staff should also show that they care and are working towards the cure of these patients. Then referring officers would be assured that patients will start treatment at health centres of referrals and be cured of TB. According to Robinbson,D (1985), the success of any TB control program depends more than any other factor on the strength and continuity of the relationship between local health care staff and the patients.

5.1.4 DISTANCE BETWEEN PATIENTS' RESIDENCE AND CHEST CLINIC

Health facilities need to be as near the users as possible for their maximum utilisation and to cut down on transport expenses of the users. The study revealed that when patients are referred to UTH chest clinic for TB investigations and diagnosis, they made an average of three visits before they were finally commenced on chemotherapy. Subsequently, patients were expected to visit chest clinic twice for review before they were discharged from treatment. 60% of patients complained about lack of transport money to get to chest clinic which was far from their residences. Due to lack of transport money, patients missed appointment or review dates until such a time that they found money for transport or until they were too ill. This made the monitoring of patients' response to treatment difficult because some patients did not go to chest clinic on expected review dates. Odell A (1983) in his study on patient referrals, discovered that distance was one of the most important factors that determined whether patients would go to a particular health facility of referral.

When health facilities are near patients residences, attendance would improve and health workers would be able to monitor patients' response to treatment. Patients suggested that Government should provide one or two ambulances between chest clinic and health centres. Alternatively, all screening and treatment of TB should be at health centres to cut down on transport costs since majority of respondents earn less than K50,000.00 a month (Table 5).

These suggestions may not be feasible therefore the N.T.L.P. should train TB specialised staff from each health centre who will in turn orient other clinical officers and nurses at the health centre so that they can review these patients confidently. With specialised staff in TB at health centres patients will not have to go to chest clinic for review unless in cases of complications and drug reactions.

5.1.5 WAITING TIME AT CHEST CLINIC

The study revealed that after the initial investigations of TB, patients waited an average of two weeks before they were commenced on chemotherapy. Two weeks is a long time because patients may die, default or become very ill before chemotherapy is started. Delay in starting chemotherapy results in poor response as successful treatment of TB is attained when

treatment is started during the initial stage of illness. Further more some patients may default and continue spreading the TB bacilli in the community, increasing the number of TB cases.

The chest clinic should investigate diagnose and commence patients on treatment within one week of initial contact. This is possible because X-ray and acid alcohol fast bacilli sputum results can be known within 48 hours of investigations.

In this study patients also waited an average of four hours before they were attended to in chest clinic. This would lead to patients giving up waiting and going home before they are attended to or decide not to attend chest clinic again. Long waiting hours affected patients who were in employment because they stayed away from work for longer hours than expected. Some patients in the study suggested that more Doctors and Clinical officers were needed at chest clinic to reduce the waiting time (Table 16). Patients should also be attended to on a first-come-first-serve basis which is not the case at the moment. Patients are redistributed to review rooms according to the Doctor or clinical officer taking care of them. When patients who report early for review are seen earlier than those who report later, it would reduce the waiting time at chest clinic. Waiting time would further reduce if the number of staff would be increased.

5.1.6 PATIENTS KNOWLEDGE ON TB
Giving health education to patients helps improve their health and illness behaviour. According to Vennema (1983), in his report on the status of TB control in New York City, low percentages of continuity and completion of treatment were due to failure to alert patients on the seriousness of their disease and the need for chemotherapy.

This study revealed that more than half (52%) of respondents had low knowledge on the cause, duration of treatment, prevention and control of tuberculosis. These patients followed the referral system despite the low knowledge because they wanted to be cured of the disease. However, the referral system is poor and one of the reasons could be that of inadequate knowledge on the seriousness of TB. 2% of patients in the study reported to the health centre more than seven days after referral because they were not told the importance

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of reporting early for treatment. This indicates that there is need to intensify health eduction to the community to improve passive case finding and case holding thereby controlling the spread of TB in the community. In a study done by Declan et al (1992) on referral patterns and diagnoses in women attending a urodynamnic Unit in London, improved awareness of continence and urodynamic services increased the number of patients who readily referred themselves for treatment.

The staff looking after patients with TB should explain the disease, its prevention and control to patients so that patients know that chemotherapy has failed due to being started late and inadequate cooperation in taking drugs results in resistance to treatment. When patients know all about the disease and its complications, they would follow the referral system and be cured of TB.

5.1.7 SUPERVISION OF TB TREATMENT

When health workers prescribe chemotherapy to patients, patients make the final decision on whether to take the drugs or not. For this reason, Addington et al (1975) said that every patient must be approached as a non-compliant when prescribing drugs. This means that health workers should not trust that all patients will take the drugs prescribed. However, Sharbaro (1994) says that patients bear ultimate responsibility for completing their own therapy but health workers should bear as much responsibility because they have a legal obligation to protect society from communicable diseases. Bumgarner (1994) also emphasizes that health workers must directly observe the swallowing of the anti TB drugs and record on ledger they will later be evaluated.

It is important that health workers ensure that patients are taking prescribed drugs by closely supervising them. This study revealed that close supervision as not possible due to lack of transport and inadequate staffing. Health workers in TB control rely on patients response during review days when they are asked if they take their daily drugs. Patients were asked on who supervised their drug intake, results show that 66% were supervised by a relative while 34% took it upon themselves to take medication.

It is important that during referral, patients are asked to report to health centres with a relative they choose to supervise their drug intake. Health workers should explain the need for drug intake as prescribed so that these supervisors ensure that drugs are taken. During weekly visits to these patients homes, health workers should rely on responses from the supervising relative on whether the patient is taking drugs or not. Weekly visits to patients homes would enable health workers identify patients who are not taking chemotherapy early and force them into hospital for admission so that health workers can supervise their medication, instead of waiting for one month for patients to come for review and ask them whether they take medication or not.

The existence of supervised drug intake would assure referring officers that patients would take prescribed drugs and would improve the TB cure rate. According to Charatan (1992), the drop of TB cases in New York City from 3811 cases in 1992 to 3235 cases in 1993, was attributed to an increase in the number of patients receiving directly observed anti TB treatment. Departments of health, medical schools and teaching hospitals worked together in the supervision of drug intake for TB patients.

With collective efforts and cooperation from health workers, patients and relatives, supervision of treatment would improve and patients would be cured of TB.

5.2 IMPLICATIONS TO THE HEALTH SYSTEM

The study revealed that the adult TB referral system in Lusaka urban needs to be reviewed. There is need to improve communication between health centres and chest clinic, improve drug supply to health centres, increase TB specialised health workers at chest clinic and health centres, introduce a system for supervising drug intake for patients and intensify health education in the communities.

5.3 SUMMARY

The purpose of this study was to establish factors contributing to the poor adult TB referral system. Results in this study are based on responses from a randomly selected sample of 50 patients currently on treatment for TB, staff from U.T.H. chest clinic and staff from two health centres in Lusaka Urban.

The study revealed that all staff involved in the referral and treatment of patients with TB were conversant with the current referral system. Most of the patients (88%) were referred to health centres near their residences although the health centres had inadequate drugs and supplies required in TB treatment (Table 14). As a result, patients lacked confidence in services offered at health centres such that 48% of them preferred to be treated at chest clinic. This result may partially explain the reason for congestion and long waiting time before patients were attended to at chest clinic. Patients preferred chest clinic to other health facilities because Doctors, specialised clinical officers and caring staff were available.

However, chest clinic had an inadequate number of Doctors and specialised clinical officers attending to patients such that 16% of patients waited an average of four hours before they were seen.

Although some patients preferred chest clinic for treatment of TB, they could not always afford to pay for transport to get there. This was because 76% of patients were from a low socio economic status. Some patients missed appointments or waited until they felt unwell to go to chest clinic for review due to lack of money. To reduce transport expenses 38% of patients preferred to be treated at health centres which were nearer their homes as long as the drug supply improved. They suggested that all screening and treatment of TB should take place at health centres. The staff agreed with this suggestion which should improve compliance to treatment and follow up of patients. Health centres would only refer patients requiring hospitalisation and complicated cases to U.T.H. chest clinic for further management.

There was no feed back of referred patients and outcomes of referrals were not known. Lack of referral forms (Table 3) could have contributed to lack of communication between health centres and chest clinic. Lack of communication would lead to patients staying at home without treatment without the health workers' knowledge. This is a health hazard if such patients continued excreting the TB bacilli and infecting the community further increasing the number of TB cases. The community could easily be infected since 52% of patients had low knowledge on the cause, treatment, prevention and control of TB.

51

Finally results revealed that staff did not supervise patients' drug intake (Table 3). They relied on patients' response when asked whether they take medication. Patients were asked when they went to chest clinic or health centres for the monthly reviews. 66% of patients were supervised by relatives while 34% took it upon themselves to take the drugs. It is important to note that patients make the final decision on whether to take medication or not. In the absence of close supervision by health workers, Lusaka Urban would continue recording a low TB cure rate over years to come.

CHAPTER 6

6.1 CONCLUSION

The study revealed that factors contributing to the poor adult TB referral system were mainly lack of Communication among health facilities involved in the treatment and control of TB in Lusaka Urban, Lack of follow up of referrals and contacts lack of drugs at health centres and distance between chest clinic and patients' residences. Results reveal that the referral system would also be affected by patients who are prescribed on ambulatory treatment while very ill, lack of supervision of patients daily drug intake, waiting time at chest clinic and inadequate knowledge on the cause, treatment, prevention and control of TB expressed by the patients.

Above findings will need to be addressed by relevant authorities for an effective referral system and to improve case finding and case holding. Consequently, the TB cure rate would improve and there would be less patients spreading the disease to the community, especially those whose immunity is already lowered by the H.I.V. infection and A.I.D.S.

6.2   RECOMMENDATIONS

6.2.1. The N.T.L.P. should have a clear policy on the follow up of referrals and a feed back system to ascertain outcome of referrals. Referral forms should be abundantly available to provide for communication and feedback. Alternatively, chest clinic staff would make a list of names and addresses of all referred patients and send it to respective health centres.

6.2.3 The D.T.L.P. should include public health nurses and environmental officers at the health centre level. These staff would spear head the follow up of referrals, contact tracing and delivery of home based care to patients who are unable to walk to health centres for treatment.

6.2.2 The district TB and Leprosy officers in connection with the provincial TB and leprosy officers should hold frequent seminars and meetings for staff involved in the treatment, prevention and control of TB in Lusaka Urban. These meeting would facilitate communication and sharing of knowledge on how best TB can be controlled in Lusaka. Staff who attend these seminars would in turn orient fellow staff at health centres or hospitals on how best TB can be managed.

6.2.4 All health workers should collectively intensify health education on the cause, treatment, prevention and control of TB so that patients and the community are aware of the cause of the disease and seek treatment early enough when they suspect they have tuberculosis.

6.2.5 The N.T.L.P. with the help of donor agencies should build laboratories and x-rays rooms in health centres in order to decentralise the diagnosis and management of TB patients to health centres. With specialised staff at health centres, there would be less need of referring patients to U.T.H. Chest Clinic.

6.2.6 Alternative to building laboratories and x-ray rooms, the N.T.L.P. should assign a vehicle which would be used for collecting sputum specimens from all health centres to the chest disease laboratory and deliver results.

6.2.7 Chest clinic and health centre staff should ask the patients to identify someone who would effectively supervise the daily drug intake. The staff should visit these patients in their homes frequently to help with the supervision of treatment and identify problems at an early stage.

6.2.8 The ministry of health should supplement the diet of patients with TB by supplying them with high energy protein food supplement, considering that most of these patients are from a low socio-economic status and can not afford nutritious foods essential to their recovery.

6.2.9 Further research should be done to investigate the failure of Pilot TB laboratories in some health centres in Lusaka. The study would establish the feasibility of building laboratories and x-ray rooms in health centres and chest clinic.

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INTERVIEW SCHEDULE
FOR T.B. PATIENTS

DATE: . . . .

CENTRE: . . . .

PATIENT NUMBER: . . . .

QUESTIONNAIRE NUMBER: . . . .

INSTRUCTION TO INTERVIEWER

1.   Introduce yourself to the respondent

2.   Explain purpose of interview

3.   Assure respondent that no name will appear on the questionnaire and that all information will be treated with confidentiality.

4.   Tick ( ) against the appropriate number of the response in the boxes provided.

5.   Write other responses in the space provided.

BACKGROUND INFORMATION

		FOR OFFICIAL USE
1.	Age..	☐
2.	Sex a. Male ☐ B.Female ☐	☐
3.	Residential address....................................	☐
4.	Marital Status a. Married ☐ b. divorced ☐ c. separated ☐ d. widowed ☐ e. single ☐	☐
5.	What level of education have you attained? a. University ☐ b. College ☐ c Secondary ☐ d. primary ☐ e. none ☐	☐
6.	How much money do you earn every month? a. above K100,000 ☐ b. K50,000 - K100,000 ☐ c. K10,000 - K49,000 ☐ d. Less than K10,000 ☐	☐

COST OF TREATMENT

7.	How far is the nearest health centre from your home? a. less than 60 minutes walk ☐ b. more than 60 minutes walk ☐	☐
8.	How do you get to the health centre? a. Own vehicle ☐ b. Company vehicle ☐ c. Bicycle ☐ d. minibus ☐ e. walk ☐ f. other specify ☐	☐
9.	If you pay for your transport can you afford? a. yes ☐ b. no ☐ c. sometimes ☐	☐

		FOR OFFICIAL USE

10.   If you can not afford, how do you manage?

        a. walk to health centre   □

        b. does not go to health centre   □

        c. gets salary advance   □   □

        d. borrows money   □

        e. by bicycle   □

THE TB REFERRAL SYSTEM

11.   Who referred you to UTH for TB investigations?

        a. hospital staff   □

        b. health centre staff   □

        c private clinic staff   □   □

        d. traditional healer   □

        e. community health worker   □

        f. self   □

12.   If you were referred, were you given a referral letter.

        a. yes   □

        b. no   □   □

13.   What happened after you were seend at UTH filter clinic.

        a. was admitted   □

        b. referred to chest clinic   □   □
          back to health centre

        c. given antibiotics   □

        d. other specify   □

14.   If you were admitted to UTH answer questions 14 to 19
        why were you admitted to UTH

        a. too sick   □

        b. further investigations   □   □

        c. don't know   □

        d. other specify   □

15.   On discharge were you

        a. referred to chest clinic   □

        b. given a review date   □   □

        c. given anti TB drugs   □

		FOR OFFICIAL USE

16. What was your condition on discharge from UTH?
       a. could not walkh centre ☐   ☐
       b. walk with support ☐
       c. was ambulant ☐

17. If you could not walk, how did you get to chest clinic?

       a. on wheel chair ☐   ☐
       b. on relatives' back ☐
       c others specify ☐

18. What problems related to the referral system did you encounter between the ward and chest clinic?

       a.   could not walk, no wheel chair. ☐
                                          ☐

       b.   inadequate explanation on continuation of treatment. ☐
                                          ☐

       c.   not accompanied by health worker ☐

       d.   waited long hours before being attended to at chest clinic. ☐   ☐

19. Give suggestions for improvement of referral system between the wards and chest clinic   ☐

       a. health worker to accompany patients.
                                          ☐
       b. provide wheel chair

       c.   health worker to give adequate information on continuation of treatment ☐   ☐

       d.   more staff needed at chest clinic for patients to have less waiting time. ☐   ☐

20. Were you given a referral letter and a treatment card from chest clinic to take to nearest health centre?   ☐

       a. given a letter and a card ☐
       b. given a letter only ☐
       c. given a card only ☐
       d. not given anything ☐   ☐
       e. other specify ☐

	FOR OFFICIAL USE

21. After referral, how long did you take before reporting to the health centre for treatment
 	
    a. 1 - 3 days   □
    b. 4 - 6 days   □
    c. 7 and above days   □
	□

22. Why did you report to the health centre after those days in (23).
 	
    a. wanted to start treatment immediately.   □
 	
    b. was medicine supplied at UTH.   □
 	
    c. Had medicine suppplied at UTH.   □
 	
    d. Had no transport money.   □
 	
    e. Too ill, weak to walk to health centre.   □
	□
	
	□

23. Who ensures that you take your daily drugs
 	
    a. Health worker.   □
    b. Relative   □
    c. Self   □
	□

24. If you w ere given a choice, where would you prefer to be treated for TB?
    a. hospital ward.   □
    b. provide wheel chair   □
    c. health centre   □
    d. traditional healer   □
    f. others specify...............
	□

25. If give reasons for your answers to question 24.
 	
    a. It is nearer my residence   □
    b. staff are more caring   □
    c. Drugs are always available   □
    d. for Doctor/s supervison and care   □
    e. other specify..................
	□

		FOR OFFICIAL USE
26.	Why wouldn't you choose to be treated at the health centre?	
	a. drugs were not always available. ☐	
	b. staff are not caring ☐	☐
	c. takes long before you are attended to. ☐	
27.	If you don't find drugs at the health centre, where are you referred for durg collection?	
	a. chest clinic ☐	
	b. private clinic ☐	
	c. drugs store ☐	☐
	d. stays without drugs ☐	
28.	What do you know about TB?	
	a. State the cause, made of spread treatment, prevention and control of TB. ☐	
	b. states some of the above ☐	☐
	c. State one of the above ☐	
	d. State none of the above ☐	
29.	Give suggestions on how to improve the TB referral system between UTH and health centres.	
	a. transport to be provided. ☐	
	b. Have drugs at health centres. ☐	☐
	c. All services for TB patients to be at health centres, in one place. ☐	
	d. More staff are required at chest clinic. ☐	

FOCUS GROUP DISCUSSION GUIDE

NO. OF PARTICIPANTS . . . .

DATE: . . . .

TIME: . . . .

PLACE: . . . .

CLIENTS: . . . .

THE TB REFERRAL SYSTEM IN USE

1. Describe the Adult TB Referral System from:-
    1.   Health centre to Chest Clinic
    2.   Chest Clinic to the ward
    3.   From Ward to Chest Clinic
    4.   From Chest Clinic to the Health Centre
    5.   Feed Back of referred patients.

PROBLEMS IN THE REFERRAL SYSTEM

2. What are the problems in the Referral System
    1.   Chest Clinic
    2.   Health Centre
    3.   Hospital Wards

3. What measures should be taken to improve the Referral System at:
    1.   Chest Clinic
    2.   Health Centre
    3.   Hospital Ward

SCHOOL OF MEDICINE
UNIVERSITY OF ZAMBIA

P.O. BOX 50110, LUSAKA, ZAMBIA

Telephones:
252041 (Dean's Office)
211440 (University Teaching Hospital)
216767 (Pre-Clinical)
Telegrams: Unza. Lusaka.

DEPARTMENT OF POST BASIC NURSING

30 May 1994

The Director of Public Health
Lusaka Urban District Council
P O BOX 30789
LUSAKA

T.R.
The Head of PBN Department
P O BOX 50110
LUSAKA

Dear Sir/Madam

RE: RESEARCH STUDY IN LUSAKA

I am a fourth year student in the school of Medicine, Department of Post Basic
Nursing pursuing a Bachelor of Science Degree.

As part of the fulfilment for a degree programme, I am required to carry out
a research study. My chosen topic is "Factors Contributing to the Poor
Adult Tuberculosis Referral System in Lusaka Urban."

I intend to collect data from a systematically selected sample of TB patients
and staff at Lusaka Urban Health centres between 15.06.94 and 30.07.94.

The purpose of this letter is to kindly ask for permission to enable me
carry out the study at the Health centres.

Thanking you in anticipation.

Yours Faithfully

ROSAH MOONGA MALAMBO

SCHOOL OF MEDICINE
UNIVERSITY OF ZAMBIA

P.O. BOX 50110, LUSAKA, ZAMBIA

Telephones:
252611 (Dean's Office)
211440 (University Teaching Hospital)
216767 (Pre-Clinical)
Telegrams: Unza. Lusaka.

DEPARTMENT OF POST BASIC NURSING

30.05.94

The Executive Director
U.T.H Board of Management
P O BOX 50001
LUSAKA

U.F.S

The Head of PBN Department
P O BOX 50110
LUSAKA

Dear Sir/Madam

RE: RESEARCH STUDY REQUEST

I am a fourth year student in the school of Medicine, Department of Post Basic
Nursing pursuing a Bachelor of Science Degree.

As part of the fulfilment for a degree programme, I am required to carry out
a research study. My chosen topic of study is "Factors Contributing to the
poor Adult Tuberculosis Referral System in Lusaka Urban."

I intend to collect data from a systematically selected sample of TB patients
and staff at Chest Clinic between 15.06.94 and 30.07.94.

The purpose of this letter is to kindly ask for permission to enable me
carry out the study at your institution.

Thanking you in anticipation.

Yours Faithfully

ROSAH MOONGA MALATO

University Teaching Hospital

(Board of Management)

THE DIRECTOR

Our Ref: UTHB/EDO/03/20

Your Ref:

7th June, 1994

Ms Rosah Moonga Malambo,
Dept. of Post Basic Nursing,
P.O. Box 50110,
LUSAKA.

Dear Madam,

re: RESEARCH STUDY REQUEST

Your letter   dated 30.05.94 on the above subject refers.

I have no objection to your collection of data from the Chest
Clinic for the purpose of your research study.

Yours faithfully,
UTH BOARD OF MANAGEMENT

G.D.M. Katema
EXECUTIVE DIRECTOR

c.c. Head, PBN Dept.

c.c. Chest Clinic

/mm

Lusaka City Council

Director of Public Health
Telegrams: "CITY"
Telephone: 229302
Ext.
Verbal Enquiries to:
Mr ....

PUBLIC HEALTH SERVICES DEPT.
CIVIC CENTRE
P.O. Box 30789
LUSAKA
Republic of Zambia

Reference: TJ/bmk
            PHD/20/3
Your Ref:

10th June, 1994

Miss Rosah Moonga Malambo,
University of Zambia
School of Medicine,
P. O. Box 50110,
LUSAKA

Dear Madam,

re: RESEARCH STUDY REQUEST

Reference is made to your request to conduct a study research on "Factors Contributing to the Poor Adult Tuberculosis Referral System in Lusaka Urban" in all Lusaka Urban Centres.

Permission is hereby granted for you to collect Data from T.B. Patients and Staff in the Centres from 15th June, 1994 to 30th July, 1994.

By copy of this letter, all In-Charges are advised to co-operate.

Yours faithfully,

Dr. L.M. Ngenda
Acting Director of Public Health

All In-Charges.

NATIONAL TUBERCULOSIS PROGRAMME

TB 09

TUBERCULOSIS REFERRAL/TRANSFER FORM

(fill out in triplicate with carbon paper between sheets)

Name of Referring/Transferring Unit: _____

Name of Unit to which patient is referred (if known): _____

Name of patient: _____ Age: _____ Sex _____

Address (in full): _____

_____

District TB No.: _____ Date Treatment started: _____

Type of Treatment:

☐ CAT 1   New Case (smear-positive)

☐ CAT 2   Retreatment

☐ CAT 3   New Case (smear-negative, EP)

Drugs patient receiving: _____

_____

Diagnosis: _____

Remarks: _____ Signature: _____

Designation: _____

Date Referred/transferred: _____

- -

For use by Treatment Unit where patient has been referred.

Name of patient: _____ District TB No.: _____

Age: _____   Sex   M ☐   F ☐

Date Referred/transferred: _____

The above named reported at this Treatment Unit on: _____
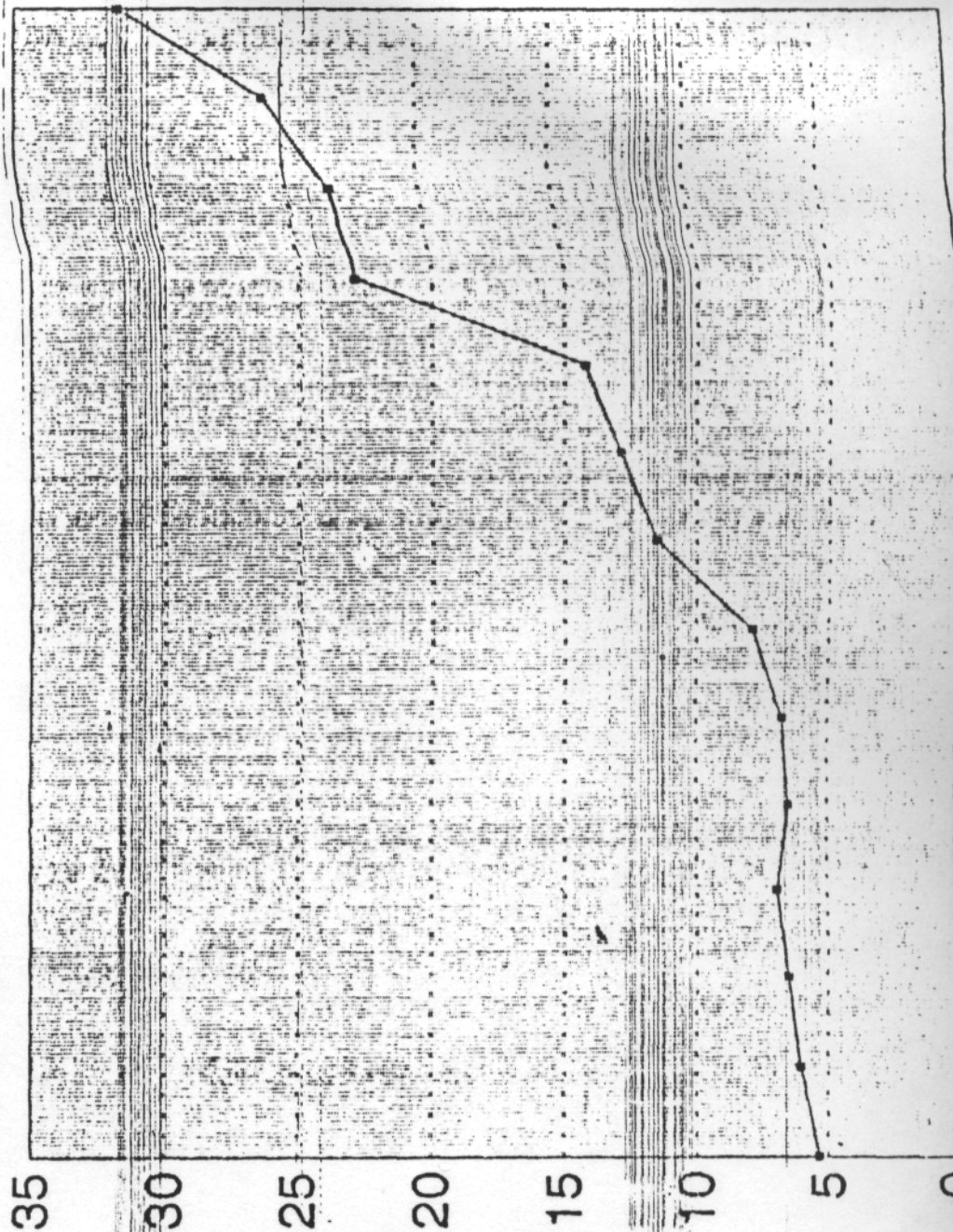
Signature: _____

Designation: _____

Name of Treatment Unit: _____

District _____ Date: _____

Send this part back to the Referring Unit as soon as patient has reported and been registered.

TUBERCULOSIS CASES IN ZAMBIA 1980 TO 1993

Thousands

Series 1