AN INVESTIGATION INTO NOTIFICATION OF CHILDHOOD TUBERCULOSIS AND ITS RELATED IMPLICATIONS IN THE DISTRICT HEALTH AUTHORITY OF GERMISTON.

BY

PHETOLE DAVID SEKETE

A RESEARCH REPORT SUBMITTED TO THE FACULTY OF MEDICINE, UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE (MEDICINE) IN CHILD HEALTH COMMUNITY PAEDIATRICS.

JOHANNESBURG, 1999.

DECLARATION

I, Phetole David Sekete, declare that this research report is my own work.
It is being submitted for the degree of Master of Science (Medicine) in Child Health Community Paediatri[illegible]
at the University of the Witwatersrand, Johannesburg.

It has not been submitted before for any degree or examination at this or any other University.

Signature: P.D. Sekete

Date: 30/9/1999.

This research was passed by the Human Ethics Committee, University of the Witwatersrand.

The medical ethics clearance number is R14/49
Clearance certificate No. M970522

DEDICATION

This research report is dedicated to my wife,

Thandi

And to my children,

Nkoko
Thabang
Mamaswa

ABSTRACT

Tuberculosis causes more deaths per year than all other notifiable infectious diseases put together. World wide tuberculosis is a highly infectious but preventable disease.

Tuberculosis was declared a priority disease in 1996 by the South African Health Department. Commitment was pledged by politicians and health personnel to improve the tuberculosis services rendered in the country. The National Tuberculosis Control Programme (NTCP) 's mission, aims and of reducing the incidence of tuberculosis and the suffering it causes among the people of South Africa can be achieved if notification systems are improved.

The study was conducted in the Germiston District Health Authority. The area has a population of 680 000. A total of 882 cases of tuberculosis were notified between January 1996 and June 1997, of these 163 were children under 15 years of age.

The study was to assess whether tuberculosis notifications and all related records were being handled properly by the GP's clinic/hospital and health personnel and the Greater Germiston Council authorities. A field study was undertaken to determine the adequacy of the community based management of childhood cases.

The study showed that the:

- Majority of the GP's were not notifying tuberculosis (62%)
- GP's and clinic/hospital health personnel were not completing notification forms properly
- Clinic/hospital health personnel were not filling up patient record cards properly
- Greater Germiston Council officials were not reporting back to the GP's/clinics/hospitals as evidenced by the blank reply spaces on the notification forms (70%) (see appendix 12.6)
- Directly observed treatment of children with Tuberculosis was generally well done, but contact tracing and health education programmes need further attention

The researcher was subsequently informed that corrective action would be taken by the authorities to remedy the situation.

Overall, the results of the study indicate and highlight the importance of notification of tuberculosis.

ACKNOWLEDGEMENTS

I wish to record my debt to my supervisor and mentor Professor L. Wagstaff whose analytical approach, suggestions, criticisms, valuable comments and encouragement gave me a source of inspiration throughout my study. May God the Almighty bless her.

Many thanks to

1. My General Practitioner colleagues in the District Health Authority of Germiston
2. Staff of the District Health Authority of Germiston both at the Head Office and at the Clinics.
3. Natalspruit and Willem Cruywagen Hospitals' staff for allowing me to conduct my research project
4. Care-givers of children with notified Tuberculosis in the community
5. Community Health Committee for encouraging me to continue with this research
6. Emily Majafe for typing the research report
7. Lastly, I would like to dedicate this work to my family, my wife Thandi who kept on reminding me about the research during her demanding work schedule, and to my children Nkoko, Thabang and Mamaswa who kept on asking probing questions about how other children contracted tuberculosis during our morning drives to school.

DEFINITION OF TERMS AND ABBREVIATIONS USED

Childhood - children under 15 years of age. Used for the purpose of this study to conform with health service age groupings.

Clinic - structure in which basic health services are provided, usually by nurses, linked to a community health centre.

District Health Authority - area controlled by district council, containing a Transitional Local Governance structure which is responsible for ensuring the delivery of all primary health care in the health district.

DOTS - Directly Observed Treatment (Short-course).

Failure of Treatment - this describes the situation where a full treatment course has been completed (6 months in new patients, 8 months in re-treatment of patients) and the patient still has active Tuberculosis.

GP - General Medical Practitioner works as a primary care physician. Private patients pay variably unregulated fees to the health care provider or to the provider via a third party insurer (medical aid scheme or insurance company) The health care provider may be self-employed or be employed by a "for-profit" organisation, or be employed by government, or be employed by a non-governmental organisation.

Local Authority - administrative structure that is responsible for the provision of a service within a local government's area of responsibility.

MDR - Multidrug Resistance (i.e. resistance to INH and one or more other Anti-TB drugs

Notification – the process by which specified diseases are made known to the health authorities at Local, Provincial and National levels.

Prevention -to ensure that diseases or illness do not occur (primary prevention) or to curtail further ill effects of disease (secondary prevention)

Public Health Surveillance - is the mechanism that public health agencies use to monitor the health of their communities. Its purpose is to provide a factual basis from which agencies can appropriately set priorities, plan programs and actions to promote and protect the public's health.

TB – Tuberculosis

WHO - World Health Organisation

NTCP – National Tuberculosis Control Program

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Mrs Jill Mainwaring
Postgraduate Officer
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Dear Mrs Mainwaring

Re: M. Sc Med Research Report
An investigation into notification of childhood tuberculosis and its related implications in the District Health Authority of Germiston

Thank you for advising me of the requirements of the Postgraduate Committee for revision of the above report. These are based on some of the recommendations of the examiners and have been dealt with accordingly.

1) Abstract – provided on page III
2) The methodology is more clearly described on pages 23-28
3) Text has been added to the results section on pages 29-54
4) The importance of the findings are noted on pages 54-55
5) As the text has been revised to deal more specifically with the given research topic, typographical and grammatical errors noted on the original script do not now specifically or necessarily apply. The revised document has been more carefully edited.
6) Statements in the text have been referenced and the Vancouver system adhered to in the reference section
7) Records and notification forms were reviewed to measure the adequacy of feedback or interaction with GP's
8) By agreement of the Post Graduate Committee the literature review has not been expanded to include issues beyond the immediate scope of the study

9) Recommendations have been grouped:

- easily achievable
- resource dependent
- operational
- educational
- structural health systems interventions

10) The revision has been fairly extensive as set out in the table of contents

As noted, this study raised many questions, related to Tuberculosis control and hopefully these will be separately addressed in future.

Thank you for the guidance received.

Yours sincerely

P.D. Sekete

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1. BACKGROUND AND INTRODUCTION

Tuberculosis remains among the ten leading causes of death in the world. Considerable progress in controlling the disease has been achieved in most industrial societies, but in developing countries it is an uphill struggle. Mycobacterium tuberculosis is the bacterial cause of the disease. For most notifiable diseases like tuberculosis, data collection is generally based on reporting by health care providers. Studies have shown that in most districts, there is considerable under reporting of tuberculosis[1]. The most obvious result of such under reporting is that effective action is delayed and cases occur which might have been prevented by prompt reporting and prompt initiation of control measures.

Tuberculosis is increasing worldwide due to improperly managed treatment programmes and poor compliance which result in inadequate cure rates. Associated factors are persisting poverty, accelerated urbanisation and the explosive effect of the HIV epidemic.

The possibility of developing tuberculosis disease is greatly influenced by socio-economic circumstances and certain disease factors, especially HIV infection. TB is the major cause of death in HIV-positive patients.
Tuberculosis accounted for more than 80% of communicable disease notification in South Africa in 1995. At least 20% of new cases reported in 1995 were attributed to HIV infection and 1% were Multi Drug Resistant (MDR). South Africa has now joined 11 neighbouring countries in the Southern African Tuberculosis Control Initiative with the main aim to standardize tuberculosis control in the Southern African region. This measure will help ensure the cure of tuberculosis patients who travel across the borders[2].

Globally, the WHO estimates that about 8 million new cases of tuberculosis occur annually, and that there are about 3 million deaths from tuberculosis each year. The situation is so grave that the WHO has declared tuberculosis to be a global public health emergency. One third of the world's population is already infected with TB bacillus. Left untreated, one infectious case of tuberculosis will infect 10-15 others in a year[3].

In June 1996, the South African government appointed a Task Group of 40 international and national tuberculosis experts to review the implementation of the new tuberculosis strategy. (report submitted to Department of Health)

Some of the weaknesses identified by the group included the following:

- ✧ Failure to clearly understand the seriousness of the tuberculosis epidemic
- ✧ Inadequate tuberculosis management system
- ✧ Inadequate implementation of DOTS
- ✧ Inefficient allocation of resources
- ✧ Inappropriate laboratory services
- ✧ Inadequate use of the tuberculosis register

These weaknesses affect the success of notification programmes in South Africa.
The tuberculosis register is the key management tool for health workers at every level. At district level, the register is the for recording all tuberculosis patients and measuring their treatment outcomes. If notification is properly handled, follow-up, contact tracing and health education can be properly managed.

Five key elements of a National Tuberculosis programme recommended by WHO are[4]:

1. Government commitment to a national tuberculosis programme as a specific system activity integrated into comprehensive primary care and supported technically at a national level.

2. Standardised, directly observed, short-short course treatment (DOTS), prioritising sputum positive patients

3. A patient friendly and clinically efficient service for case detection based primarily on smear microscopy. (Passive case finding).

4. An ensured supply of essential anti-TB drugs.

5. Effective monitoring, using standardised registers, quarterly reports and clear definitions of new cases and treatment outcomes.

1.1 EPIDEMIOLOGY OF TUBERCULOSIS

Children are most frequently infected by an adult member of the household, usually a close relative, sometimes a child minder. Transmission of mycobacterium bacilli occurs by airborne spread of infection droplets. The source of bacilli is someone with smear positive open active pulmonary tuberculosis disease.

The usual mode of infection consists of inhalation of droplets of sputum which an infectious individual expels on coughing.

The progression is normally exposure, infection and then disease development.

The individual's risk of infection is determined by the length of time of exposure, susceptibility to infection and the amount of droplets in contaminated air. In poor socio-economic areas and particularly where people live in crowded informal settlements, the risk of susceptible individuals becoming infected is high if there is close and prolonged, exposure to a person with pulmonary tuberculosis.

Progression from infection to disease is more frequent in those recently infected.

During infancy and early childhood, tuberculosis disease is particularly likely to follow infection and high mortality and morbidity are experienced.

A Simplified Model of tuberculosis[5]

There are four possibilities for the outcome of primary disease namely

- ✧ Pulmonary and pleural disease
- ✧ Disseminated disease
- ✧ Hypersensitivity reactions e.g. erythema nososum
- ✧ No clinical disease

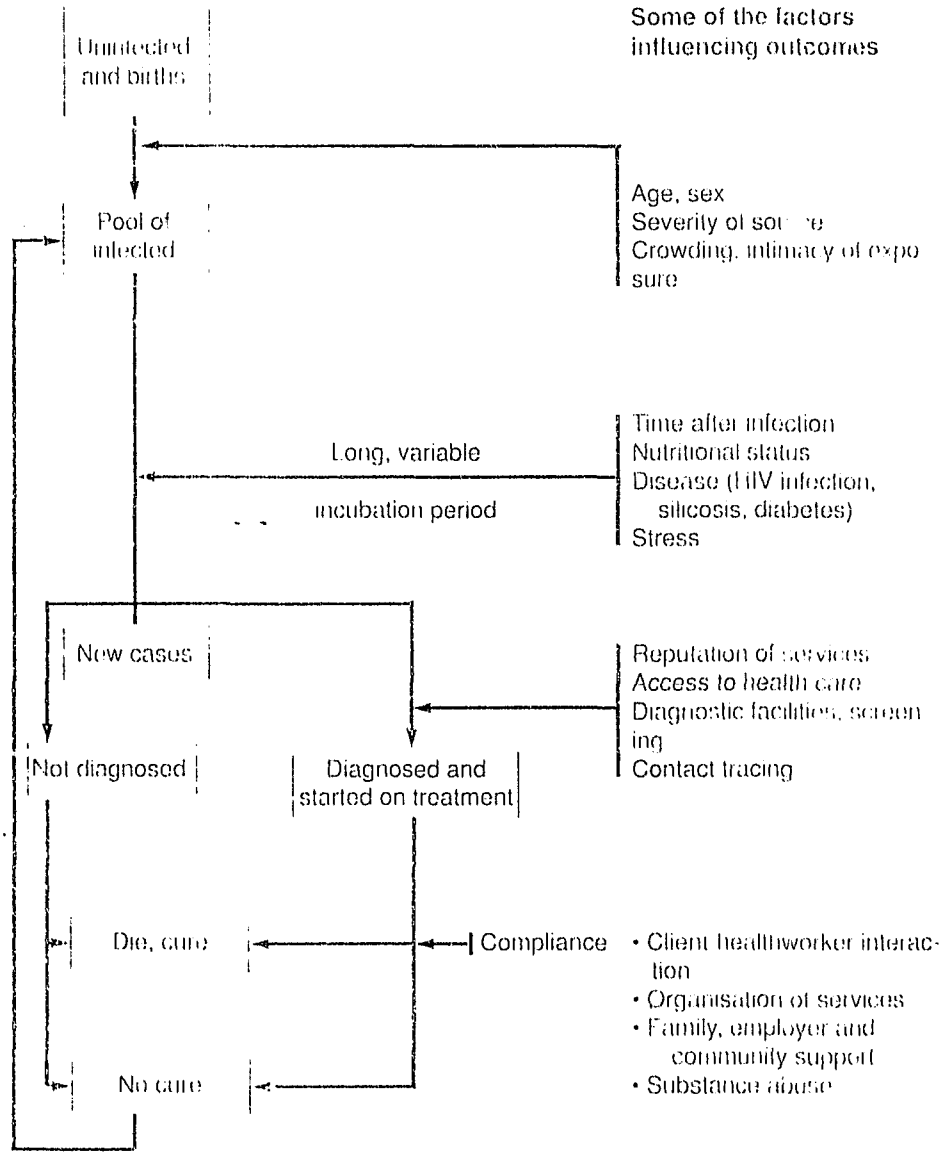
The size of the infecting dose of bacilli and the strength of the immune response determines what will happen next.

In most cases the immune response stops the multiplication and spread of bacilli. A positive Tuberculin Test would be the only evidence of infection.

Reactivation of earlier primary lesion occurs.

Progression of a primary lung infection may also occur.

A SIMPLIFIED MODEL OF TUBERCULOSIS



Disseminated forms of disease, such as miliary tuberculosis and tuberculous meningitis, also occur more commonly in the very young. Respiratory tuberculosis in children is mainly related to the primary complex and the progression of one or more of its components. Cavitation can occur in young children, but is unusual. The immune system of a young child is less developed than that of an adult, but is usually able to prevent the spread of disease. In children infected with TB 80-90% remain asymptomatic and 10-20% develop disease when risk factors are present[6].

Lymph gland enlargement is the commonest manifestation of tuberculosis in children under the age of 5 years. Spinal involvement may also occur. The nutritional status of the child is crucial in terms of TB progression. Malnourished children are particularly susceptible to severe pulmonary tuberculosis including miliary tuberculosis and TB meningitis resulting from blood borne dissemination of TB bacilli.

Congenital tuberculosis is acquired when the placenta becomes seeded with micro-organisms during maternal bacteraemia. Children born of HIV positive mothers, if infected, are at greater risk of developing tuberculosis due to a compromised immune system.

Between the ages of about 5 and 10 years, children enter a period of relative protection from tuberculosis disease, despite a persistent risk of infection as evidenced by an uninterrupted rise in the proportion of children with a positive tuberculin test[7].

One of the most intriguing features of the epidemiology of tuberculosis is the well-known difference in the incidence of disease and the variation in the nature of the disease with age.

BCG immunisation gives some protection against the progression of TB infection to disease. The main benefit is the protection against development of TB meningitis and miliary TB in children.

Tuberculous disease may not only result from progression of the initial infection, but from reactivation of a dormant focus.

Some factors which cause reactivation of dormant mycobacterium bacilli include the following:

1. Malnutrition:

    - Kwashiokor in children
    - Marasmus

The spine and TB lymph nodes are the highest in children younger than five years. Nutritional status of the child is crucial in terms of TB progression.

Malnourished children are at greatest risk of developing severe pulmonary tuberculosis with cavitation in the lungs, miliary tuberculosis and TB meningitis.

A child recently infected is at greater risk of TB disease. The immune system or a young child is less developed than that of an adult, but is usually able to prevent the spread of disease. In children infected with TB 80%-90% remain asymptomatic and 10%-20% develop disease when risk factors are present[7].

2. HIV which suppresses the immune system
3. Diseases:
    - Measles
    - Whooping cough
    - Malignancy
    - Diabetes

The incubation period of tuberculosis in children can be very short, thus the prompt investigation of children exposed to adults with open active pulmonary tuberculosis is a critical public health function.
Preventable cases of childhood tuberculosis occur when timely contact tracing and investigations are not performed. Constraints in time, resources, misplaced priorities and lack of dedication are blamed for poor control. Local health authorities may conduct incomplete, delayed or even no contact investigation at all.

Delay in health care provider reporting to the health department of tuberculosis in adults also puts childhood contacts at risk for developing the disease. Ideally all the necessary steps to perform contact tracing should be taken within 5-7 days of the initial case report.
When children are infected, family members and other close contacts should be investigated to find the source of tuberculosis disease. Notification of tuberculosis is important both for all the contacts to be traced and for treatment to commence.

In South Africa, between 1970 and 1980, the tuberculosis case fatality rate was 7% for children less than 1 year of age; falling to 3% for those 1 – 4 years and 1% to 3% for those 5 – 9 years. After the age of 10 years there is an ever-increasing risk of exposure to tuberculosis disease, and the nature of the disease changes from primary to adult – type tuberculosis[8].

Tuberculosis remains a serious community problem in South Africa. It is estimated to be most prevalent among the rural black population; with an average incidence rate of 370 per 100 000 of the population.
The highest recorded rate of 700 per 100 000 occurs in the Western Cape[9].

A study conducted in Mseleni Hospital, which serves a rural population of 40 000 people, showed that despite intense health education programmes, 88% of patients were collecting less than 50% of their medication from the clinics, and the rate for full compliance actually dropped from 20% to 8% during the period of study[10].

Childhood tuberculosis accounts for between 5 and 15% of all tuberculosis cases.
An effective National Tuberculosis Control Program is the best way to prevent tuberculosis in children. The highest priority in tuberculosis control is to cure the infectious cases that is those producing smear positive sputum. Good and effective treatment of tuberculosis in childhood will result in decrease in morbidity and mortality[11].

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1.2 DIAGNOSIS OF CHILDHOOD TUBERCULOSIS

In children, the only evidence of infection with TB may be a positive tuberculin skin test. Abnormalities may also be seen on chest X-ray such as hilar gland enlargement or a Ghon focus. The majority of children even if infected do not develop TB disease.

It is easy to miss the diagnosis of tuberculosis in children, but it is also easy to over diagnose it.

Children with tuberculosis rarely cough up sputum especially those under the age of ten years as they usually swallow their sputum. The diagnosis of tuberculosis in children can be very difficult. The "Road to Health" card can be useful as a screening tool in identifying these children. If weights remain the same or decrease for two or more months without any obvious cause then tuberculosis should be suspected[11].

The general features include loss of appetite, failure to thrive without any obvious explanation and loss of weight. Some further symptoms and signs include the following

- Repeated respiratory tract infections not responding to treatment
- Enlarged matted glands in the neck
- Repeated and persistent cough with wheezing not responding to bronchodilators may be due to enlarged intra-thoracic glands
- Abdominal swelling due to TB peritonitis with ascites or enlarged abdominal lymph glands and associated with vomiting and diarrhoea
- Swelling of joints, limp, arm or leg weakness, unwillingness to walk and to bend the spine. In the latter instance, one must suspect TB Spine.

Diagnosis of tuberculosis radiologically in children depends on the quality of the X-rays and the experience of the doctor. In most cases changes are non-specific and therefore it is generally not advisable to diagnose TB from X-rays alone as many diseases can produce similar changes.

Tuberculin skin testing measures the body's reaction to tuberculin protein. Tuberculin tests provide a useful indicator of infection in children and are easy to perform and interpret. A positive reaction occurs after BCG immunization and should remain positive for several years thereafter. The reaction is weaker than the reaction resulting from infection with *Mycobacterium bacilli*. In children, a strongly and significantly positiv skin test would indicate infection acquired six weeks or more previously. One must be aware of the fact that a negative tuberculin does not excludeTB.

Factors which give a false negative Tuberculin Test would include the following[11, 12]

- disseminated TB
- malnutrition
- HIV infection
- Measles or other viral infection
- Immunosuppression – drugs

In general, diagnosis utilises a number of approaches, either separately or simultaneously[12].

1. Epidemiologic factors
2. Clinical history
3. Physical examination
4. X-Rays
5. Tuberculin testing
6. Isolation and identification of tubercle bacillus which is more difficult in children.
7. History of contact with a sputum positive PTB patient

1.3 TREATMENT

The treatment of tuberculosis has now been refined to the point where more than 95% of patients of all ages, who comply with therapy, can be successfully treated with a 6 months regime of a combination of Isoniazid, Rifampicin and Pyrazinamide[13].

The use of the different drugs in courses of chemotherapy has also been standardized by NTCP. Despite this, close to 25% of tuberculosis patients in developing countries may fail to complete their therapy. Although it has been stated that short course therapy is short, it is not short enough. Failure of compliance frequently occurs within the first three months of treatment, and further shortening the length of treatment required could make a major contribution to the control of tuberculosis throughout the world.

Directly Observed Therapy (DOTS) means that every single capsule or tablet is seen to be swallowed. If more convenient and practical for the patient, a treatment supporter should be found, motivated and monitored[13].

The advantages of using DOTS include the following:

- community based
- cost effective
- prevents new infections
- prevents MDR TB
- it is effective
- Cures the patient
- Protects the working people as they can continue working
- Stimulates economies

TREATMENT OF TUBERCULOSIS IN CHILDREN [14]

The key to controlling the spread of tuberculosis is to start treating patients with correct drugs for the correct period of time.

There are basically 4 situations in which the South African Tuberculosis Control Programme provides recommendations for the treatment of children, namely:

Situation 1: BCG - At birth, soon after, or at first presentation.

- Repeat after 6 weeks if no scar

Situation 2: Child not well

- not recovering from respiratory infection
- coughing or wheezing for more than two weeks
- weight gain unsatisfactory (Road to Health) – card- weight for age graph

Situation 3: Contacts of adult with sputum positive tuberculosis

- chemoprophylaxis for children aged 5 years or less
- over 5years – no chemoprophylaxis – if Tuberculin test negative but to be followed up

Situation 4: Breastfed baby of TB mother

- chemoprophylaxis for the first three months then discontinue provided mother is sputum negative.

1.4 MULTIDRUG RESISTANT TB

Multidrug resistant tuberculosis (MDR) refers to resistance to at least both Isoniazid and Rifampicin. This means that these drugs have less or no effect against any tuberculosis bacilli found in a patient's sputum.

Initial resistance is the presence of drug resistance to one or more TB drugs in a patient who has never received more than 4 weeks prior tuberculosis treatment (new patients)[15].

Acquired resistance develops during the course of treatment, usually as a result of poor compliance or faulty prescribing by a health worker. Retreatment patients are more likely to have this type of resistance.

In South Africa 1% of new patients and 4% of retreatment patients are multidrug resistant. Health Care Workers can help reduce the threat of multidrug resistance by[15]

1. Prescribing the correct tuberculosis drugs in the correct dose for new tuberculosis patients.

2. Promptly detecting and investigating any tuberculosis patient who fails to respond to tuberculosis treatment.

The key to the control of tuberculosis remains the efficient detection and treatment of smear-positive cases, even within a well managed national control programme. However, because the chemotherapeutic regimen is protracted, compliance may be problematic, and health workers will require the long-term enthusiastic support of the community. South Africa's tuberculosis problem reflects and is similar to that of the global community.

Tuberculosis control, is in theory, simple and highly cost effective. Passive case finding and the promotion of short course (6 month) chemotherapy, will cure the vast majority of cases, and if coverage is high enough, will lead to a sustained reduction in case rates.

This is the basic strategy advocated by the WHO and the International Union against Tuberculosis and Lung Disease. Why then has this strategy failed on a global level? Why is tuberculosis a global public health emergency?. Efficient notification and appropriate responses are fundamentally important.
The tuberculosis control programme must be structured and resourced in a way that is fully cognisant of the needs of a comprehensive district health system that provides a wide range of essential services, of which tuberculosis treatment is only one.

1.5 PREVENTION OF TB IN CHILDREN

- BCG vaccination
- Full immunisation programme (measles/whooping cough predispose to TB)
- Excellent NTCP
- Chemophyplaxis of child contacts of infectious adults
- Notification

1.6 HEALTH EDUCATION

The General Practitioners of today have an extremely important role to play in tuberculosis control programmes. All health care providers must ensure that they remain up to date with strategies such as TB control to educate patients and the public. Until the medical team is enlightened, it is difficult to expect the general community to accept tuberculosis patients without undue stigma and unfounded fears. This need for education is secondary only to our paramount goal – the utilisation of whatever resources are necessary to assure completion of a full course of effective chemotherapy, as prescribed for all TB patients.

Relevant health education information for the patient and health care personnel includes the following:

- Early signs and symptoms of TB
- TB is curable if treatment is taken
- Treatment should not be interrupted
- Patients with TB should not be ashamed to talk about it
- TB is an infectious disease
- TB patients should avoid alcohol and smoking
- Inform the local clinic if moving to another area (TB patients)
- Always carry the green card (TB patient treatment record)
- Practicing of good hygiene is essential
- Side effects of TB drugs
- Not necessary to isolate patients with TB as long as good hygiene is being practiced by everyone

Essential education about Tuberculosis requires a highly individualised approach to each patient by the health care team, one that not only permits the patient to co-operate, but also encourages and continually reinforces achievement to this end.

Management and control of tuberculosis must be a shared responsibility. Every health worker has a responsibility to help prevent TB in communities by running excellent health promotion and prevention programmes as well as advocating and working for better living conditions in communities.

2. PROBLEM STATEMENT

2.1 NOTIFICATION OF TUBERCULOSIS[16]

The purpose of notification is disease control. The process of tuberculosis notification comprises the following steps:

Step	Reason/Purpose
Diagnosis of tuberculosis	Because tuberculosis is a threat to the community it has to be notified.
The person who diagnoses notifies Local or District Health on service form GW 17/5 (cases & death)	To inform Local or District Health Service of this threat to which it must mount the appropriate response.
The Local or District Health Service response: ✧ Trace contacts ✧ Determine the source ✧ Contain and control further spread ✧ treatment ✧ Check on immunisation programmes	Control / contain its further spread. No notification, no action !!
Local Clinic or District Health Authority completes the following on a weekly basis: ✧ form GN 17/3 of cases and ✧ form 17/4 for deaths	Province and Local Authority to conduct disease surveillance and support local district health service on the basis of this data.
Local clinic submits all forms to the Local Authority. Local Authority will then submit all forms to the Provincial Government.	

Notification form (GW17/15) for tuberculosis includes the following details:

- ✧ Details of Patient = Name
  Age
  Sex
  Race
  Residential address
- ✧ Details of tuberculosis = Date of onset
  Place of infection
  Date of death, if applicable
  Diagnosis
- ✧ Details of investigation = Sputum
  Tuberculin test
  Chest X-ray
- ✧ Patient referral to = Hospital
  Clinic
- ✧ Person who notified = Doctor
  Nurse

The desired response would be a reply by Local Authority to referring doctor or clinic nurse, with a brief report of further findings and management.

Local Authority responds by taking the following steps:

- ✧ Ensuring BCG immunisation of newborns programme
- ✧ Surveillance
- ✧ Management

The primary aim is:

- ✧ To prevent spread of infection by identifying and treating with drugs, people with disease and their close contacts.
- ✧ To prevent infection from progressing to disease in those at great risk i.e. secondary preventative therapy.
- ✧ To cure those suffering from tuberculosis

Each case of tuberculosis should be reported to the local health department. Such reporting not only is essential for tuberculosis control programmes, but more importantly, opens the door to necessary intervention by health departments. This includes contact tracing, investigation, provision of laboratory and X-Ray services, and often provision of drugs which are generally provided without charge.

Public health surveillance for tuberculosis is the ongoing systematic collection, analysis, interpretation and dissemination of data. Tuberculosis control is dependent on this and is implemented and monitored by proper use of records and reports

2.2. RECORDS AND REPORTS

- Patient Treatment Card (GW 20/15)
  This is kept by the patients as a passport to TB treatment
  It records the patient's results, treatment regimens and adherence
  Attendance at clinics and hospitals is also recorded here.
- Patient clinic/Hospital Card (GW 20/12)
  Kept by the health facility to record same information as Patient Treatment Card and is used to monitor adherence and clinical progress.
- Tuberculosis Register (GW 20/11)
  Kept by the health facility to document patient's name, address, results and treatment outcome.
- Patient Transfer form (GW 20/14)
  Sent to referral health facility to which patients are referred to ensure continuity of care
- Quarterly Reports on case finding and treatment outcome (GW /16)

The recording and reporting system provides information to manage the NTCP at all levels – district, provincial and national. The accurate record keeping of all patients by maintaining up to date patient card registers and reporting data to the central unit quarterly is essential for the proper management of the programme.

2.3 SURVEILLANCE DATA

Surveillance data are used mainly:

- To describe and monitor tuberculosis health events in different districts
- To set priorities
- To assist in planning, implementation and evaluation of public health intervention programmes.

Surveillance systems are often considered information loops or cycles involving health care providers, public health agencies and the public. The cycle begins when tuberculosis occurs and is reported by health care providers to the public health agencies. Any deficiency or lack of co-ordination destroys the sequence of events and therefore renders it useless. The cycle is not completed until information about these cases is relayed to those responsible for disease prevention and control.

Close contacts should be traced to eradicate tuberculosis.

Surveillance	Public Health Action
✧ Collection of data	✧ Priority setting
✧ Analysis of data	✧ Planning
✧ Interpretation of data	✧ Implementation of the program management and evaluating disease through investigation
✧ Dissemination of data	✧ Control
	✧ Prevention

The goal of tuberculosis surveillance is not only to collect data for analysis, but to guide public health policy and action. Many sources of data are available that can be used for public health surveillance viz.

- ✧ Mortality reports
- ✧ Morbidity reports - as reflected on notification forms or from the clinics and hospitals
- ✧ Epidemic reports - surveys
- ✧ Laboratory test results
- ✧ Hospital admissions, disease registers
- ✧ Environmental data
- ✧ Demographic data

2.4 THE AREA IN WHICH TUBERCULOSIS NOTIFICATION WAS INVESTIGATED

The study was undertaken in the District Health Authority of Germiston.
This District Health Authority had 2 hospitals, 33 clinics, 137 General Practitioners and a population of 680 000.

2.5 JUSTIFICATION FOR STUDYING TUBERCULOSIS NOTIFICATION

The whole process of tuberculosis management and control is initially dependent on the relevant authorities receiving the notifications and there after responding effectively.
It is therefore important to monitor tuberculosis control programmes in the eradication of tuberculosis

The ability to control tuberculosis depends on the surveillance programmes in place. The importance of tuberculosis and the need to have it under surveillance is evidenced by the following:

- The current impact of tuberculosis on human suffering and financial implications
- Changing patterns in morbidity and mortality
- Total number of cases, incidence, prevalence
- Severity of tuberculosis (case – fatalities)
- Hospital admissions
- Its potential for spread
- Its preventability

By considering the potential for spread, we recognise the need to maintain surveillance for tuberculosis. By considering preventability, we reflect the intended link between surveillance and public health intervention.

2.6 MOTIVATION FOR THE STUDY

Notifications are a responsibility of health care providers and should be completed whenever indicated. The researcher's impression prior to undertaking the study was that there was not enough coordination, report back and action taken by the health care providers, health authorities and the care givers in dealing with TB.

2.7 HYPOTHESIS

Tuberculosis notifications are not being properly handled by health care providers and health authorities.

3. OBJECTIVES OF THE STUDY

3.1 TO ASSESS WHETHER TUBERCULOSIS NOTIFICATIONS ARE HANDLED PROPERLY BY THE HEALTH CARE PROVIDERS

THE TUBERCULOSIS NOTIFICATIONS TO BE STUDIED ARE:

General Practitioners' Notifications
Hospital Notifications
Clinic Notifications

3.2 TO CHECK WHETHER CHILDREN WITH NOTIFIED TUBERCULOSIS CASES ARE ACTUALLY PUT ON TREATMENT, FOLLOWED UP AND WHETHER CONTACT TRACING IS DONE

3.3 TO CHECK WHETHER PATIENT TREATMENT AND ALL THE REQUIRED TB RECORDS CARDS ARE COMPLETED PROPERLY

3.4 TO ASSESS WHETHER THE LOCAL AUTHORITY REPORTS BACK TO THE HEALTH CARE PROVIDERS

4. ETHICAL CONSIDERATIONS

4.1 Ethical approval and permission to undertake the study was obtained from the "Committee for Research on Human Subjects" Ref: R14/49. Clearance Certificate Protocol Number M970522.

4.2 Gauteng Provincial Government to conduct study in the hospitals.

4.3 Greater Germiston Health Authority.

4.4 Verbal consent was obtained from care givers of children with notified tuberculosis.

4.5 Preliminary discussion took place with area GP's who when requested, agreed to participate in the study.

5. RESEARCH METHODOLOGY

5.1 STUDY DESIGN

This is a descriptive study.

5.2 STUDY POPULATION

Germiston is situated in the East Rand region of Gauteng Province. It is a heavily populated area with informal settlements sprawling even into some parts of the city centre. It is therefore a mix of lower, middle and upper economic classes. Unemployment is rife. GP's have their rooms in informal settlements, township proper and the city centre.

The population of Greater Germiston is about 680 000.

5.3 METHODS

(A) The study was carried out using three structured questionnaires to the following:

1. GP's
2. Care givers of children with notified tuberculosis
3. Greater Germiston Local Authority

(B) The patient notification forms and treatment cards were reviewed.

The researcher is himself a GP in the Germiston District Health Authority area, and he discussed the project proposal with other GP's in the area at a meeting of the Independent Practitioners Association. All those present (±100) were in favour of the research as a means of identifying problems associated with TB, and agreed to participate. The GP's also suggested some of the questions raised in the questionnaire. This thus constituted a type of focus group.

The study was conducted between 1 July 1997 and 31 March 1998. A list was obtained from the Germiston Health Department of all Tuberculosis notifications between January 1996 and June 1997. There was a total of 883 tuberculosis notifications of which 163 applied to children under the age of 15 years.

5.4 SAMPLE SIZE AND SELECTION

Eligible participants were:

- ✧ All General Practitioners
- ✧ All children under 15 years with notified tuberculosis
- ✧ All hospitals and clinics

5.4.1 General Practitioners

There were 137 GP's in the District Health Authority area of Germiston. All the GP's names and addresses were collected and put on 137 pieces of papers which were placed in a basket. A total of 60 names was pulled out of the basket randomly by a classmate. 60 names were regarded as representative enough and approximated almost half the number of GP's in the area.

GP's were not asked about their ages, years of work post qualifications, race, gender and where they qualified as this would have revealed their identities. Also the study was not intended to be analytic.

5.4.2 Children with Notified Tuberculosis

Names and addresses of the 163 children with notified tuberculosis were put on pieces of paper which were put into a basket. A classmate randomly pulled out 60 names.

5.4.3 Germiston Local Authority Officials

Only the two most senior officials were interviewed as juniors would have referred the researcher to their respective Heads of Departments to discuss health policy issues and for permission to gain access to records.

5.5 QUESTIONNAIRES

5.5.1 Questionnaire to General Practitioners(Appendix 12.2)

The researcher's driver delivered anonymous questionnaires to the 60 GP's and collected them a week later. The questionnaire to the GP's was based on whether they had in the previous 2 years notified cases of tuberculosis or not. If they had not notified TB, some 17 statements were given as possible reasons to be answered in the positive or negative. GP's were also asked for their opinions regarding possible improvement in the notification process.

17 reasons put forward were the following:

- ✧ Unavailability of notification books
- ✧ Time consuming
- ✧ Too much hassle e.g. procedure cumbersome
- ✧ Lack of feedback from local authority
- ✧ Lack of incentive
- ✧ Distrust of local authority
- ✧ Unaware of responsibility to notify tuberculosis to the local authority
- ✧ Assuming that someone else e.g. clinic, hospital would notify on referral
- ✧ Unaware of how or to whom to report
- ✧ Compromised patient/doctor relationship
- ✧ Disagreement with need to report
- ✧ Perception that health department did not act on reports
- ✧ Belief that no effective public health measures existed
- ✧ Judgement that tuberculosis was under control
- ✧ Tuberculosis patients were not followed up by the local authority
- ✧ Belief that tuberculosis was out of control and no matter what the authorities did- failure was the end result.
- ✧ No contact between general practitioners and local district authorities existed. GP's were requested to give any other reason that they felt would be relevant to notification

5.5.2 Questionnaire to the care-givers of children with notified tuberculosis (Appendix12.3).

A set of questions was drafted and the researcher after explanation and obtaining verbal consent went through the questions with the caregiver in the latter's language of choice. The name of the care-giver was noted and the forms were signed by the respondent at the end of the interview. This was done for verification by health authorities if they so wished. Care-givers were not obliged to answer any of the questions put to them. They were told that the questions were important to help us improve the notification system in the district.

They were assured that there would be no adverse consequences if they refused to answer the questions.

- The questions were centred around whether
- The child received regular treatment
- He/she took the treatment in the presence of the health worker and Care-giver
- All close household contacts had been traced
- The child was treated for TB before i.e. had previously been treated for TB
- The drugs' side-effects had been explained to them
- The child was immunised for TB (BCG at birth)
- They complied with the specified treatment
- TB health education discussions were held regularly in their areas eg. Monthly, quarterly.
- Regular follow-ups were conducted by the health authorities
- They were satisfied with the treatment they were receiving from the authorities
- They were in contact with their general practitioners
- There were any TB campaigns in their areas.

5.5.3 The third questionnaire which in the circumstances became an interview and discussion to Germiston District Health Authorities was based on whether or not they communicated with GP's. If the answer was NO, some suggested reasons for not communicating with GP's were given to them to be answered in the positive or negative. The reasons were broad and they were encouraged to give any other reasons or comments that they felt were necessary.

Suggested reasons discussed with District Health Authority Officials for not communicating with GP's:

- time consuming
- too much hassle
- GP's not part of the district health service
- GP's not concerned with notification

- ✧ Distrust of GP's
- ✧ Unaware of responsibility to report back
- ✧ Assumed that someone else was reporting back to GP's
- ✧ Notification books were not supposed to be distributed to GP's
- ✧ GP's were not helpful
- ✧ GP's were concerned with making money and not with the general public health system

1.6 COMPLETION OF PATIENT TREATMENT CARDS AND NOTIFICATION FORMS

The researcher accessed 60 notification forms of patients who were randomly selected from the Germiston District Authority Department to check completion of all the required data.

While administering questionnaires to the caregivers of 60 children with notified tuberculosis he also checked the patient treatment cards.
The purpose was to assess whether these records were being used as intended.

5.7 NOTIFICATIONS AND SUBSEQUENT ACTIONS

The following criteria were used for assessing TB notifications and subsequent actions.

PROPERLY HANDLED

Health care provider diagnoses tuberculosis

↓

notifies TB

↓

treats TB or refers to local clinic or refers to hospital for treatment

↓

notification forms sent to local authority

↓

Local authority/Council/Health Department

1. conducts surveillance
2. conducts TB public health education and campaigns
3. sends reports to health care providers
4. traces TB contacts
5. sends reports to Provincial Health Authority

NOT PROPERLY HANDLED - Not in line with above stipulated steps for handling notifications

5.8 DATA ANALYSIS

Data collected were analysed by the hand-sorting method.
Results of the individual subsections were followed by discussions specific to that part of the study.

6. RESULTS

6.1 RESULTS OF THE QUESTIONNAIRE TO GP's

TABLE 1

RESULTS OF ANONYMOUS QUESTIONNAIRE TO GENERAL PRACTITIONERS

These are summarized below with additional text and the comments of GP's noted thereafter

		YES	NO	TOTAL
1.	Have you notified TB in the last 2 years?	23 37%	37 62%	60
2.	If you have notified, have you received any feedback from the authority?	1 4%	22 96%	23 100%

If the answer to the first question is no, could these be the reasons for not notifying tuberculosis.

		YES	NO	TOTAL
1.	Unavailability of notification books	33 89%	4 11%	37 100%
2.	Time consuming	17 46%	20 54%	37 100%
3.	Too much hassle e.g. procedure cumbersome	18 49%	19 51%	37 100%
4.	Lack of feedback from local authority	29 78%	8 22%	37 100%
5.	Lack of incentive	11 30%	26 70%	37 100%
6.	Distrust of local authority	6 16%	31 84%	37 100%
7.	Unaware of responsibility to notify tuberculosis to the local authority	3 8%	34 92%	37 100%
8.	Assuming that someone else e.g. clinic, hospital would notify on referral	34 92%	3 8%	37 100%
9.	Unaware of how or to whom to report	3 8%	34 92%	37 100%
10.	Compromises patient/doctor relationship	0	37 100%	37 100%
11.	Disagreement with need to report	0	37% 100%	37 100%

12.	Perception that health department does not act on reports	21 57%	16 43%	37 100%
13.	Belief that no effective public health measures exist	21 57%	16 43%	37 100%
14.	Judgement that tuberculosis is out of control	2 5%	35 95%	37 100%
15.	Tuberculosis patients are not followed up by Local Authority	13 35%	24 65%	37 100%
16.	Belief that tuberculosis is out of control and no matter what the authorities do - failure is the end result	2 5%	35 95%	37 100%
17.	No contact between general practitioners and local district authorities exists.	36 97%	1 3%	37 100%

GP's notifying and feedback received

The number of study GP's who notified tuberculosis in the last 2 years was 23 (38%) and those who did not notify TB was 37 (62%) .

Thirty three GP's (89%) felt that unavailability of notification books was the reason for not notifying and only 4 (11%) felt it was not the reason for not notifying.

This doctor also stated that he worked at the Local Authority clinic and was given the monthly report on TB patients. An overwhelming 96% did not receive any feedback from the local authority after notifying TB.

TIME CONSUMING

Twenty GP's (54%) stated that it was not time consuming to notify tuberculosis and (17) 46% felt it was time consuming. The complaint was that it took too long to fill up the pages, instead of just treating the patients. Once the patient got well, it was felt to be no longer necessary to notify because no visible response and action plan was followed by the Authority.

TOO MUCH OF HASSLE eg. Procedure Cumbersome

Almost equal numbers of GP's expressed opposite views about the procedure being cumbersome Comments made were that many questions were asked and that GP's could see many patients instead of wasting time, sitting and filling up cumbersome papers which did not assist the doctor.

LACK OF FEEDBACK FROM LOCAL AUTHORITY

Twenty nine GP's (78%) stated that lack of feedback contributed towards not notifying TB and only (8) 22% stated that it did not.

LACK OF INCENTIVES

Twenty six (70%) felt that lack of incentive was not the reason for not notifying Tuberculosis and only 11(30%) preferred the incentive route.

DISTRUST OF LOCAL AUTHORITY

Six (6) GP's (10%) distrusted the Local Authority and 31 GP's (84%) trusted the Local Authority.

The researcher observed that 2 (two) of the doctors had written derogatory remarks in their questionnaire sheets.

RESPONSIBILITY TO NOTIFY TB

An overwhelming majority of 92% were aware of the responsibility to notify TB and only a minority of 8% were not aware of this.

ASSUMING THAT SOMEONE ELSE eg. CLINIC, HOSPITAL WOULD NOTIFY TB ON REFERRAL

Thirty four GP's (92%) referred patients to the clinics and hospitals on suspicion of TB assuming that once definite diagnosis has been made, notification will then be done by someone else at that particular centre.

COMPROMISES DOCTOR/PATIENT RELATIONSHIP

None of the 37 GP's who did not notify TB thought such action would compromise doctor/patient relationships.

DISAGREEMENT WITH NEED TO REPORT

None of the 37 GP's disagreed with the need to report.

PERCEPTION THAT THE HEALTH DEPARTMENT DOES NOT ACT ON REPORTS

Twenty-one GP's (57%) stated that they believed that the department did not act on notification report. One GP stated on his questionnaire that the Department was more interested in keeping the reports at National level and less interested in reporting back to providers and the patients.

BELIEF THAT NO EFFECTIVE PUBLIC HEALTH MEASURE EXISTS

Twenty-one GP's (57%) considered this to be true. They had not seen any effective public education campaigns in their areas.

JUDGEMENT THAT TUBERCULOSIS IS OUT OF CONTROL

It was interesting to note that 2 GP's (5%) believed that tuberculosis was out of control. These were the same 2 GP's who gave consistently negative responses ie. unaware of how or to whom to report, unaware of responsibility to notify TB and assuming that someone else eg. Clinic, hospital would notify TB on referral.

TUBERCULOSIS PATIENTS ARE NOT FOLLOWED UP BY THE LOCAL AUTHORITY

Thirteen GP's (35%) believe that the local authority was not following up the TB patients.

Sixty-five GP's (65%) stated that this was not the reason for their failure to notify tuberculosis.

BELIEF THAT TUBERCULOSIS IS OUT OF CONTROL AND NO MATTER WHAT THE AUTHORITY DO – FAILURE IS THE END RESULT

Again the same two GP's believed that the statement was correct.

NO CONTACT BETWEEN GP's AND THE LOCAL AUTHORITY EXISTS

Only one GP (3%) believed there was contact of some sort but the overwhelming majority felt this not to be the case.

DISCUSSION

All healthcare providers need continuing medical education on time management. The amount of time spent on telephone calls is more than that of completing the notification forms. A strong focus on work schedule is important.

GP's should take time to do some introspection and realise that they are the gatekeepers of health. If they take their work to heart it would not be a hassle to do the job.

It is important to always respond to requests or messages especially the giving of feedback to the GP's as they form part of the health team.

Are GP's taking the incentive route? One would have thought that GP's are committed and dedicated individuals whose task is to assist in the eradication of tuberculosis from South Africa.
The 30% (thirty percent) is quite significant in that it makes a considerable impact on notification of tuberculosis.
Distrusting the Local Authority undermines the powers given to that authority by province. The local authority needs to examine itself and identify areas of weaknesses and improve on those. The local authority acts as the coordinator of health care in this instance. These GP's need health education for themselves first before they can educate the other health care providers and the community.

GP's responsibilities as gatekeepers of health include, those of notifying TB. If GP's do not play their part and work in a responsible way, they scourge of TB will continue to ravage South Africa. One would hope that when the results of this investigation get to the 8% GP's they would change.

The Patient Treatment Card and Notification forms are always available to GP's working at the clinics and hospitals. Therefore no excuse not to notify at the place of diagnosis and contact with patient.
It is difficult to understand how notification can compromise doctor/patient relationship instead of improving and enhancing it.
Support systems set up by the local authority would encourage GP's to report more efficiently.

The GP's should be part of that effective public health measure conducting TB education.
The necessity to intensify TB health education to GP's is urgent before they convey those sentiments to other people in the community.

Noteworthy findings are the fact that the majority 62% of GP's had not notified a case of tuberculosis in the previous 2 years whereas the prevalence of the disease makes it probable that all would have encountered one or more cases.

The vast majority(92%) indicated that they were aware of the responsibility to notify tuberculosis and the methods of so doing, but did not accept this as their personal responsibility.
This is a crucial aspect as both the GP's and the health authorities seemed to assume that the diagnosis has to be made in a clinic or hospital. The fact that X-rays and sputa are necessary investigations to confirm the diagnosis supports this practice. However, it is in the researcher's personal experience as a

general practitioner that sputum tests can be arranged from private consulting rooms without cost to the patient, and it is the author's opinion that this should be the accepted practice.

Whether notification books were not available (reason 1-89%) because they were not used, or vice versa is open to speculation. GP's are part of the health team and should have enquired from Government structures about the availability of the notification forms. GP's should basically know about the serious consequences of NOT notifying.

Whose duty is it to make notification books available to GP's?
Both GP's and Local Authorities should take joint responsibility.
There is no doubt that there is something wrong with the feedback mechanism to the GP's. It is possible that if all the GP's had notification books with proper follow-up then the level of TB notification could increase.
There were 3 GP's who were consistently critical and negative in their responses. They assumed someone else was responsible for notifying TB, were unaware of their own responsibility to do so, and did not know how or to whom to notify.

A common feeling amongst the GP's surveyed was that notifying TB would be an unproductive use of their time both in terms of their other activities, and because they perceived it to be under control and there would be no further benefits for patients.
GP's are busy and consequently resent spending time on completing long forms unless well motivated to do so. None of the GP's suggested alternative ways of improving on the so-called cumbersome nature of the notification forms. GP's criticized the format without improving on it.
The breakdown in trust and poor communication between health authorities and general practitioners were important findings which could well be acted upon. Trust is the glue that holds together all opposing forces to forge ahead with ideas to improve the system of notification.
The GP's appeared to appreciate the seriousness of tuberculosis, and the need for and possibility of controlling it.
All doctors should be aware of notification requirements, considering the level of tuberculosis in South Africa. If GP's do not commit themselves on this issue, then we have a recipe for disaster. The system of controlling tuberculosis is still far from being properly implemented if health workers are not co-operative and compliant.

The overall impact should be that of a win, win, win situation for the GP's, Local Authority, patients and the broader community.
The results show some GP's are unfamiliar with the reporting system, where to get the forms, who to communicate with, and appear to lack understanding of the importance of TB notification.

None of the GP's suggested new approaches and new ideas of dealing with the Local Authority, nor did they indicate whether they intended making any contact with the local Authority.

RESULTS

6.2 Results of the questionnaire to care-givers of children with notified tuberculosis.

Care-givers who were interviewed included mothers, fathers, grannies, helpers, relatives staying with children and neighbours.

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TABLE 2

RESULTS OF QUESTIONNAIRE TO CARE GIVERS OF CHILDREN WITH NOTIFIED TUBERCULOSIS

Explanation to care giver

I understand that your child has tuberculosis. I have hereunder a set of questions which I would like to go through with you. You are not obligated to answer any of these questions, if you do not wish to do so. Answers to these questions will help us to improve the notification system in our area. Would you mind answering some of these questions?

		YES	NO	ABST	TTL
1.	Did the child receive daily regular treatment from the local clinic?	57 95%	3 5%	0	60 100%
2.	Did the child swallow the tablets in the presence of both the health care worker and care-giver at the clinic or at home?	58 97%	2 3%	0	60 100%
3.	Have all your household contacts been traced by the authorities?	15 25%	43 72%	2 3%	60 100%
4.	Are the health authorities conducting regular follow-ups?	7 12%	52 87%	1 2%	60 100%
5.	Have you/family contact ever been treated for tuberculosis before?	3 5%	56 93%	1 2%	60 100%
6.	Have the drugs side effects been explained to you	1 2%	59 98%	0	60 100%
7.	Did the child receive the BCG immunisation at birth?	57 95%	2 3%	1 2%	60 100%
8.	Did the child have all the required and recommended treatment to date?	48 80%	12 20%	0	60 100%
9.	Are TB education discussions held regularly by the health authorities during the treatment period with you? Monthly, three monthly.	1 2%	59 98%	0	60 100%
		YES	NO	ABST	TTL

10.	Are you satisfied with the service you are receiving from the authorities?	16 27%	44 73%	1 2%	60 100%
11.	Are you in contact with your general practitioner, clinic or hospital regarding TB?	21 35%	38 63%	1 2%	60 100%
12.	Are you aware of any tuberculosis campaigns in your areas if any?	16 27%	44 73%	0	60 100%

ABST = ABSTENTIONS
TTL = TOTAL

Responses of care givers of children notified as having tuberculosis

Three (5%) who did not receive treatment, gave the following reasons:

1. No transport money to attend the clinic daily
2. No time available as the child was attending school
3. Mother worked in Rustenburg (no one to take the patient to the clinic)

Care-givers suggested other ways of dealing with people who are unable to get to the clinic for tuberculosis treatment e.g.

- home based nursing care
- mobile clinics

There was commendable directly observed treatment (97%)
Only a quarter of the families reported that close household contacts had been checked.

Fifty two (52) (87%) of the care-givers were not aware of any follow-up of defaulters, or of those who had completed their TB treatments to check if there was definite improvement.
One (2%) was not sure about what the doctors and staff said in the hospital, but was given TB treatment.

Fifty-nine (98%) were not informed of the side effects of drugs prescribed. 1 (2%) knew because mother was a nurse.
Of the 12 patients (20%) who did not comply with treatment reasons ranged from:

1. busy at school
2. no family support
3. no money for transport
4. parents don't care

Except from what they saw on TV, newspapers and booklets, there was hardly any awareness of health education relating to Tuberculosis. TB child carers did not perceive that the Local Authorities provided regular TB health education discussions.
Forty four (73%) said they were not happy with the way they were treated at the clinics, their reasons were:

1. clinic staff rude
2. doctors not friendly
3. "staff talked bad about TB"
4. too long queues and waiting periods

Twenty one (35%) said they were in contact with their GP's. These were mainly those who were referred to the clinic or hospital by their GP's.

Forty-four (73%) said they were not aware of any TB campaign - All they saw was a once per year measles campaign!

DISCUSSION

On the whole, there was a reasonable standard of care of paediatric TB patients in the community studied.
Supervised treatment of the individual patients was generally satisfactory.
A breakdown in or poor communication was the major difficulty identified.
The health services were generally not perceived as being user friendly which reflects adversely on the intended strategies to combat Tuberculosis.
Contact tracing is important in the eradication of TB. Sufficient resources (human and material) have to be put into place to improve the system. Follow-up of patients in their homes would be an advantage to be promoted.

RESULTS

6.3 Availability and completion of Patient Treatment Cards (Form GW 20/15)

Patient Treatment Card (GW 20/15) Available for 26 children (Appendix 12.5)

TABLE 3	RECORDED	
Magisterial District entered	11 (42%)	
Clinic/hospital recorded	7 (27%)	
Age entered	26 (100%)	
Date of Birth entered	26 (100%)	
National ID Number N/A to children		
Patient category New	26 (100%)	
International Code for disease 010 TB Primary 011 TB Pulmonary No entry	 3 (12%) 17 (65%) 6 (23%)	
Basis of decision to treat Bacteriology Clinical findings Tuberculin Test	 - 23 (88%) 21 (81%)	
History of Contact X-rays	21 (81%) 12 (46%)	
Has the patient been notified? Yes Column No Column Date of notification	 22 (85%) 4 (15%) - 26 (100%)	
Clinical Details Section X-ray numbers entered	 20 (77%)	
Sputum Results –(Not applicable to children)	0	
Discharged by: Signature Date of discharge	 19 (73%) 24 (92%)	
Regimen Dosage	26 (100%)	

Of the 60 families of children under 15years of age with notified tuberculosis visited by the researcher 26 (43%) had their Patient Treatment Cards (GW 20/15) with them.

34 (57%) families did not remember being informed to keep their cards in their homes.

Inspection of the available Patient Treatment Cards (Appendix 12.5 /GW 20/15) revealed that some important information was not recorded by the health personnel namely;

Clinical Details Section

X-rays reports
- pretreatment
- 2 months X-ray
- 6 months X-ray

X-ray numbers appeared for 20 (77%) in columns of pretreatment section.

In all 26 (100%) dates appeared without any X-ray numbers in the sections for 2 months and 6 months.

Clinical findings, history of contact and tuberculin Test are major factors in the diagnosis of childhood tuberculosis as opposed to bacteriology. X-rays were the diagnostic tool used in 46%, are often unreliable on their own in the diagnosis of tuberculosis

Magisterial District 11 (42%) Cards

This is an important space where one would pick up for example the District Health Authority of Germiston. If this column is uncompleted, how will the local authority participate in the NTCP. It is significant to identify the district for the Province to report back, to assist with resources, to intervene decisively and to increase TB awareness campaigns.

Age, Date of Birth and ID

It is encouraging to note that all ages, dates of births, ID and patient categories were all taken care of. Everyone noted all the details.

International Code for Disease

Incomplete areas made it difficult for the researcher to distinguish primary, pulmonary bone TB, miliary TB and skin TB. Data for the different types of TB are important in the management and control of tuberculosis.

Clinical/Hospital recorded on (7 (27%)

The lack of complete information on over a half of the forms precluded proper monitoring and interdepartmental communication.

- Age column was filled in all 26 (100%)
- Date of birth column filled in 26 (100%)
- National ID number not filled in 26 (100%) this is due to the fact that all were children under 15 years of age.

Patient Category:

This section refers to the following

- new case
- retreatment after previous treatment completion
- retreatment after previous treatment interruption
- retreatment after previous treatment failure

All 26 (100%) were entered in the under new case section as might be anticipated in view of the age group studied. In children under 15 years of age. Retreatment cases would not be expected.

Basis of decision to treat

-	Bacteriology	Nil
-	Clinical findings	23 (88%)
-	Tuberculin Test	21 (81%)
-	History of contact	21 (81%)
-	X-rays	12 (46%)

In all 26(100%) dates appeared without any X-ray numbers in the sections for 2 months and 6 months.

Sputum Results Section

Nil filled in 26 (100%) of cards as previously noted – not applicable to children.

Discharged by:

Signatures on 19 (73%) of the cards.

Date of discharge 24 (92%) of the cards were filled up.

Regimen Dosages

a) Initial intensive phase (2 months)

b) Continuation phase (4 months)

There 2 sections were complete in all 26 (100%)

It was encouraging to note that the treatment schedule was adhered to in all 26 (100%) forms reviewed. Assuming that all 60 families should have patient retained cards, the overall results indicate that this part of the strategy is not well established. At best where all 26 available cards were correctly completed, this is less than half of the total cases studied.

DISCUSSION

It is significant to note that bacteriology was not found to be of any use here because children are mostly unable to produce sputum for microscopy.

A review of the Patient Treatment Card revealed the health personnel's suboptimal attention to or understanding of the data value of the data required. These cards contain useful information for the control of tuberculosis. The following health personnel deficiencies were noted:

- filling up of cards not done properly
- leaving a lot of blank spaces
- some cards not signed by staff which makes it difficult to trace the culprits

Failure to enter the magisterial district prevents the local authority participating properly in the National Tuberculosis Control Programme (NTCP).

There was no provision for entering the weights of children

These results reflect reasonable attention to patient data and clinical details, but are less adequate for health service support and monitoring purposes.

As the numbers are small i.e. a total of 26 records studied, results have to be treated with reserve.

RESULTS

6.4 Results on Notification of Medical condition (Forms GW17/5)

(form to be completed for original notification of the case)

DATA EXTRACTED FROM NOTIFICATION FORMS OF FIELD STUDY GROUP

RESULTS ON NOTIFICATION OF MEDICAL CONDITION FORM GW 17/5

TABLE 4 RECORDED

	Yes	
Details of Medical Condition		
Medical condition entered	60 (100%)	
Date of onset entered	59 (98%)	
Possible place of infection not recorded	60 (100%)	
Diagnosis was based on		
Clinical and other investigation	37 (62%)	
Clinical history and examination	46 (77%)	
Results of investigation		
Sputum results - nil		
Referred to		
Name of hospital recorded	19 (32%)	
Registration number filled in	19 (32%)	
Date of admission entered		
Notified by	60 (100%)	
Profession - Medical Practitioner	6 (10%)	
- Nurse	54 (90%)	
Reply by Local Authority	11 (30%)	

FINDINGS ON NOTIFICATION OF MEDICAL CONDITION FORMS

The review of the notification forms GW 17/5 of the 60 patients under the study showed the following:

Details of patient: Surname
Age
Sex
Ethnic group

Details of Medical condition:

Medical condition : 60 (100%) completed

Date of onset: 59 (98%) completed

Possible place of infection – not recorded on any form 100%

Diagnosis was based on:

Clinical and other investigations 37 (62%)

Clinical history and examination 46 (77%)

Results of Investigations

This section related mostly to sputum results and was left blank in 60 (100%) of the forms.

This again reflects the limitations of this investigation in children.

Referred to

Name of hospital 19 (32%) recorded

Registration No: 19 (32%) recorded

Date of admission: not recorded 60 (100%)

Notified by:

Name: 60 (100%) names recorded in the spaces provided

Address: Name and address of clinics and hospitals were recorded as required.

Profession : Medical practitioner: 6 (10%)
Nurse: 54 (90%)
Other: 0

Reply by Local Authority

This section referred to reply to referring doctor/nurse with brief report of further findings and management.

49 (70%) forms were blank with only the signature and date appearing at the bottom.

18 (30%) forms were filled properly.

Discussion

- It is not known how many if any of the TB patients in the study had initially been attended to by general practitioners as such information cannot be ascertained with certainty from the current forms.

- The address and telephone numbers given referred to the clinics or hospitals where the diagnosis was made. One can only assume that it was filled by the hospital or clinic employed doctor as none gave a GP's address.

- There are several sections of the records which are not adequately completed. This considerably reduces the potential value of these forms for TB surveillance and service planning.

- The people who should be filling in forms should have clear understanding of what is required, for what purpose and with what result.
  This highlights the need for good communication and co-operation

6.5 RESULTS FROM THE GERMISTON LOCAL AUTHORITY.

Two senior members of the department were interviewed. They responded to the questions by submitting the following comments:

1. GP's were not interested in knowing about the new TB policy and TB protocol.
2. GP's declined invitations to the clinics.
3. Co-ordination and communication with GP's were non-existent.
4. GP's made wrong diagnosis with X-Rays and were not using and relying on sputum results.
5. GP's made delayed diagnosis of TB.
6. Wrong transfer forms were filled.
7. GP's did not notify TB, as they did not keep notification books with them.
8. No communication existed between GP's, local authorities and provincial authorities.
9. GP's gave the wrong dosage of TB drugs.
10. Local authorities communicated with GP's only if serious mistakes were made.
11. Local authority did not supply notification books to the GP's.
12. Total number of GP's in Germiston local authority was unknown to them.
13. There was distrust of GP's because of the obvious mistakes they made.
14. They were unaware of the responsibility to report back.
15. There was also a feeling that GP's could be helpful if they were not concerned with making money only.

Discussion

The local authority senior officials had very negative perceptions of GP's and their role in the management of tuberculosis. Their attitude was reflected in their actions or lack of interaction. It was not possible in this study to determine whether and to what extent their opinions were well founded.

7. OVERALL REVIEW AND DISCUSSION

It is obvious from the result that GP's who do not notify tuberculosis equate it with any non-communicable disease. There is an element of don't care attitude – it is one of those diseases!

It will also be interesting to hear the responses from GP's once the results have been given to them as promised before the study was undertaken.

A review study may be required to assess the number of GP's who notify tuberculosis 6 months to one year after the release of the findings.

The care-giver support system lacked resources to improve home situations. This is linked to the socio-economic set-up in the community studied. The researcher observed that patients were from poor families who could not afford to send them to school and to the clinics. In some cases care-givers were found drinking alcohol (traditional beer). The conditions were not condusive to children with tuberculosis both in terms of nutritional status and treatment.

The Greater Germiston Local Authority has substantial resources as compared to other authorities. The two (2) hospitals and thirty three (33) clinics in the area which are fully staffed with GP's (137) are more than enough resources to deal with tuberculosis. My view is that privatisation has to be done accordingly. Germiston is the 3rd biggest city in Gauteng province after Johannesburg and Pretoria.

It is interesting and significant to note that after the researcher had interviewed the Greater Germiston Council Officials, the new Director: District Health Care Services wrote a letter to all GP's and Hospital Superintendents to remind them about the importance of notification (see Appendix 12.9). The researcher is therefore encouraged by this development, as this would improve health care delivery in the District Health Authority of Germiston.

The number of children with notified tuberculosis who also had associated HIV infection was not known. This was not recorded in any of the forms reviewed. There was also no indication that patients reviewed were taking any prophylactic antibiotics at all.

The treatment supervisor was mainly clinic nurse. It would be encouraging to see relatives, teachers, village health workers and neighbours participating in the supervision of treatment.

The number of contacts traced by the health personnel who were still on treatment or had completed treatment and who were also acting as caregivers to children with notified tuberculosis was not recorded.

It would also be interesting to know the treatment outcome as to whether patients were cured, treatment completed, failure was the end result, treatment interrupted or patient was transferred to the hospital.
Of significance is the fact that all children traced 60 (100%) were alive and no one had died as a result of tuberculosis.

The researcher observed signs of kwashiokor in some patients although this was not recorded as this was not part of the study. It would be encouraging to see some improvements in the socio-economic status of these areas.
Comments given by the care-givers included the fact that they observed significant improvements in the patients health conditions as soon as they started with Anti-TB therapy/treatment. In some areas they had formed TB upliftment groups i.e. Discussion groups to encourage one another about TB treatment programmes. These groups were a continuation of the measles campaign structure set up by the Community Health Committees in 1995. They had simply extended their roles to include tuberculosis

It is therefore necessary and important

- To encourage GP's to notify tuberculosis
- To improve and re-inforce on the existing groups of people involved in TB campaigns in the community
- To support and advise the local authority to make an effort to disseminate TB information
- To meticulously record all the necessary details in both the patient Treatment Card and Medical condition Notification form.

8. RISKS AND LIMITATIONS OF THE STUDY

Some GP's did not cooperate fully in the study. Others felt the study undermined them and questioned why the researcher was so eager to assist the Minister of Health.

Some officials were not happy about a study that was going to expose deficiencies in their notification procedures even if it was a useful one. Some senior Health Personnel at the clinics were not happy with questions put to them.

Some patients and families did not want tuberculosis to be discussed openly because of some stigma attached to it due to ignorance in the communities.

The researcher felt apprehensive when entering people's homes, especially the informal settlements. Inaccessibility of some squatter camp areas and changes in addresses presented the researcher with difficulties in tracing patients. Eventually all the patients were traced by the researcher.

It was not possible to ascertain whether GP's who had not notified TB in the previous two years, had in fact not seen any cases or had not diagnosed them. It was also not feasible to attempt to ascertain how many suspected cases had been referred for investigation.
Regardless of this the study results reflect GP's knowledge of TB and attitudes towards TB Notification.
The questionnaires reflected negative bias as a result of the researchers experience as a General Practitioner in the area.
Respondents were however at liberty to disagree
The limitations and risks were not considered to have seriously detracted from the overall results which provide information useful for future interventions.
The study raised many other questions which could not be answered

9. CONCLUSIONS

The study showed suboptimal communication between local authority, GP's, care givers and the community

9.1 There were breakdowns in the notification system in the District Health Authority of Germiston.

9.2 Health Care providers did not handle TB notification properly.

9.3 General Practitioners seldom accepted personal responsibility for diagnosing and notifying tuberculosis.

9.4 Local Authority did not bother reporting back to the GP's.

9.5 Data kept by the Local Authority were not used to educate the community about the impact of tuberculosis.

9.6 Contact tracing of defaulters was not properly handled as they were never followed up. No mechanisms were put in place to communicate with them.

10. RECOMMENDATIONS

The recommendations have been categorised according to the list criteria

Easily achievable

10.1 Notification books should be distributed to all health care providers.

Resource dependant

10.2 The notification information should be simplified/shortened to minimise delays. There is just too much paper work to be done. The filling up of forms might be done by suitably trained clerks.

10.3 A controlled study to evaluate the possible benefits of incentives might be worthwhile.

10.4 Clinic staff when necessary to visit families at homes for tracing and treatment of defaulters

10.5 Provision of home health nursing services

10.6 To assist patients at home and this long queues at the clinics

10.7 TB drugs can also be given to their GP's who referred them to the clinics with possible remuneration or incentive.

10.8 TB drugs can be given to school principals or crèche head for children to swallow under supervision at schools/crèches.

10.9 Provision of more mobile clinics.

Operational

10.10 Local Authorities should report back to the health care providers monthly.

10.11 GP's who open new practices in District Health Authority should be required to register for easier

communication. As it is at the moment, local authority does not even know the total number of doctors working in its district.

10.12 Simplification or streamlining of the reporting structure – National-Province-Local-Community level

10.13 Once the District Health Authorities are fully operational, monthly meetings should also deal with notifications, surveillance and management reports.

Educational

10.14 Improved communication including feedback, mutual trust and respect between GP's and health authorities is of fundamental importance.

10.15 Health Care providers should explain the side effects and complications of drugs given to the patients. Perhaps information leaflets in mother tongue should be distributed to the patients.

10.16 Contact tracing should be referred to the Community Health Committees who know the areas better than the health care providers. Community members should also encourage notified cases to go to the clinics for treatment. If patients are unable to attend to the clinics, health committee members should assist.

10.17 TB public health education campaigns should be done in conjunction with community Members eg. Wellness and outreach programs.

10.18 Time management – all health care providers should be given guidance on daily management of time in their practices, clinics or hospitals.

10.19 Need to conduct GP's continuing medical education on TB notification

10.20 The district Health Authority of Germiston should coordinate continuing Medical education to discuss notification of diseases, where to get the notification books from and communication channels.

10.21 Doctor/Patient relationship seminars to promote friendly health centres

Structural Health System Intervention

10.22 Health Care providers who do not notify after diagnosing TB should be referred to the Peer Review Committee.

10.23 Strengthening the District Health Authority by inviting all stakeholders including community health committees, Civic organisations, Unions, non-governmental organisations, GP's other health care groups and political structures to tackle health issues including Tuberculosis.

The findings can only be applied to the geographical area of study namely that falling under the district health authority of Germiston. It is however probable that difficulties identified apply more widely and the findings might guide investigations and interventions in other areas.

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12. APPENDICES

TABLE 1

RESULTS OF ANONYMOUS QUESTIONNAIRE TO GENERAL PRACTITIONERS

		YES	NO	TOTAL
1.	Have you notified TB in the last 2 years?			
2.	If you have notified, have you received any feedback from the authority?			

If the answer to the first question is no, could these be the reasons for not notifying tuberculosis.

		YES	NO	TOTAL
1.	Unavailability of notification books			
2.	Time consuming			
3.	Too much hassle e.g procedure cumbersome			
4.	Lack of feedback from local authority			
5.	Lack of incentive			
6.	Distrust of local authority			
7.	Unaware of responsibility to notify tuberculosis to the local authority			
8.	Assuming that someone else e.g. clinic, hospital would notify on referral			
9.	Unaware of how or to whom to report			
10.	Compromises patient/doctor relationship			
11.	Disagreement with need to report			
12.	Perception that health department does not act on reports			

13.	Belief that no effective public health measures exist			
14.	Judgement that tuberculosis is out of control			
15.	Tuberculosis patients are not followed up by Local Authority			
16.	Belief that tuberculosis is out of control and no matter what the authorities do - failure is the end result			
17.	No contact between general practitioners and local district authorities exists.			

APPENDIX 12.3

TABLE 2

RESULTS OF QUESTIONNAIRE TO CARE GIVERS OF CHILDREN WITH NOTIFIED TUBERCULOSIS

Explanation to care giver

I understand that your child has tuberculosis. I have hereunder a set of questions which I would like to go through with you. You are not obligated to answer any of these questions, if you do not wish to do so. Answers to these questions will help us to improve the notification system in our area. Would you mind answering some of these questions?

		YES	NO	ABST	TTL
1.	Did the child receive daily regular treatment from the local clinic?				
2.	Did the child swallow the tablets in the presence of both the health care worker and care-giver at the clinic or at home?				
3.	Have all your household contacts been traced by the authorities?				
4.	Are the health authorities conducting regular follow-ups?				
5.	Have you/family contact ever been treated for tuberculosis before?				
6.	Have the drugs side effects been explained to you				
7.	Did the child receive the BCG immunisation at birth?				
8.	Did the child have all the required and recommended treatment to date?				
9.	Are TB education discussions held regularly by the health authorities during the treatment period with you? Monthly, three monthly.				

APPENDIX 12.3

TABLE 2

RESULTS OF QUESTIONNAIRE TO CARE GIVERS OF CHILDREN WITH NOTIFIED TUBERCULOSIS

Explanation to care giver

I understand that your child has tuberculosis. I have hereunder a set of questions which I would like to go through with you. You are not obligated to answer any of these questions, if you do not wish to do so. Answers to these questions will help us to improve the notification system in our area. Would you mind answering some of these questions?

		YES	NO	ABST	TTL
1.	Did the child receive daily regular treatment from the local clinic?				
2.	Did the child swallow the tablets in the presence of both the health care worker and care-giver at the clinic or at home?				
3.	Have all your household contacts been traced by the authorities?				
4.	Are the health authorities conducting regular follow-ups?				
5.	Have you/family contact ever been treated for tuberculosis before?				
6.	Have the drugs side effects been explained to you				
7.	Did the child receive the BCG immunisation at birth?				
8.	Did the child have all the required and recommended treatment to date?				
9.	Are TB education discussions held regularly by the health authorities during the treatment period with you? Monthly, three monthly.				

		YES	NO	ABST	TTL
10.	Are you satisfied with the service you are receiving from the authorities?				
11.	Are you in contact with your general practitioner, clinic or hospital regarding TB?				
12.	Are you aware of any tuberculosis campaigns in your areas if any?				

ABST = ABSTENTIONS
TTL = TOTAL

APPENDIX 12.4

QUESTIONNAIRE TO GERMISTON DISTRICT HEALTH AUTHORITY

Administered by interview/discussion

Do you communicate with GP's? YES/NO
If the answer is NO, could these be the reasons for not communicating with the General Practitioners

		YES	NO
1.	Time consuming		
2.	Too much hassle e.g. procedure cumbersome		
3.	GP's not part of district health		
4.	GP's not concerned with notification		
5.	Distrust of GP's		
6.	Unaware of responsibility to report back to GP's (monthly or yearly reports)		
7.	Assuming that someone else is reporting to them		
8.	Notification books not distributed to GP's		
9.	GP's not helpful		
10.	GP's are concerned with making money and not with the general public health system		

APPENDIX 12.5

G.P.-S. 004-1001 GW 20/15

NATIONAL TUBERCULOSIS CONTROL PROGRAMME

PATIENT TREATMENT CARD

Registration date d d m m y y ☐☐/☐☐/☐☐ Register number y y ☐☐☐☐/☐☐

Magisterial district ..... Treatment point .....

Clinic/Hospital ..... Telephone No. .....

Surname .....

Full name(s) .....

Age ☐☐ yrs Date of birth d d m m y y ☐☐/☐☐/☐☐

National ID number ☐☐☐☐☐☐/☐☐☐☐☐/☐☐☐

PATIENT CATEGORY

- ☐ New Case
- ☐ Retreatment after previous cure
- ☐ Retreatment after previous Rx completion
- ☐ Retreatment after previous Rx interruption
- ☐ Retreatment after previous Rx failure

INTERNATIONAL CODE FOR DISEASE

- ☐ 010 TB primary
- ☐ 011 TB pulmonary
- ☐ 012 TB other respiratory organs
- ☐ 013 TB meninges
- ☐ 014 TB intestines, peritoneum
- ☐ 015 TB bones, joints
- ☐ 016 TB genito-urinary system
- ☐ 017 TB other organs
- ☐ 018 TB miliary

BASIS OF DECISION TO TREAT

☐ Bacteriology ☐ Clinical findings ☐ Tuberculin test ☐ History of contact ☐ X-ray

☐ Other .....

NOTIFICATION INFORMATION

Has patient been notified ☐ Yes ☐ No Date of notification d d m m y y ☐☐/☐☐/☐☐

NOTES .....

.....

SPUTUM RESULTS

	PRE-TREATMENT	2 MONTHS	DISCHARGE
Date sent			
Smear			
Culture			

Name of sister in charge ..... Telephone number .....

TREATMENT SUPERVISOR

☐ Relative ☐ Employer ☐ Teacher ☐ Community health worker ☐ Clinic nurse

☐ Other .....

Name ..... Address .....

..... Telephone No. ..... Code .....

TREATMENT OUTCOME

- ☐ Cured
- ☐ Treatment completed
- ☐ Failure
- ☐ Treatment interrupted
- ☐ Transferred out to .....
- ☐ Not tuberculosis — final diagnosis .....

COMMENTS

.....

.....

.....

.....

Discharged by (print name) .....

Date of discharge d d m m y y ☐☐/☐☐/☐☐

APPENDIX 12.6

Notification of medical condition

(Sections 32, 47(i)(a) and 47(i)(b) of Act 63 1977)

Department of Health

Aanmelding van mediese toestand

(Artikels 32, 47(i)(a) en 47(i)(b) van Wet 63 van 1977)

Departement van Gesondheid

Please print • Where appropriate, mark the correct box with a tick (√) • Complete in duplicate. Original to be sent to local authority where patient was diagnosed, copy to remain in book

Gebruik asseblief drukskrif • Waar toepaslik, merk die korrekte blok (√) • Voltooi in duplikaat. Die oorspronklike word gestuur aan die plaaslike owerheid waar die pasient gediagnoseer is; die afskrif bly in die boek

DETAILS OF PATIENT / BESONDERHEDE VAN PASIENT

Surname		Van	First names		Voorname
Age / Ouderdom	Sex / Geslag	Male / Manlik ☐ Female / Vroulik ☐	Ethnic group / Etniese groep	Asian / Asier ☐ Coloured / Kleurling ☐	Black / Swart ☐ White / Blank ☐
Residential address If resident on a farm, state farmer's name as well as name and number of farm. In other rural areas, give name of chief, induna, village, nearest hill or river, nearest school or clinic			Woonadres Indien woonagtig op 'n plaas, noem die boer se naam sowel as die naam en nommer van die plaas. In ander landelike gebiede, gee die naam van die stamkaptein, induna, dorp, naaste heuwel of rivier, naaste skool of kliniek		
District			Distrik		
Tel No			Tel nr		
Name and address of employer, school, creche or other institution where patient spends much of the day			Naam en adres van werkgewer, skool, creche of ander inrigting waar die pasient 'n groot gedeelte van die dag is.		
Tel No			Tel nr		

DETAILS OF MEDICAL CONDITION / BESONDERHEDE VAN MEDIESE TOESTAND

Medical condition	Mediese toestand
Date of onset / Aanvangsdatum	Date of death (if applicable) / Sterftedatum (indien van toepassing)
Possible place of infection	Moontlike plek van infeksie
Diagnosis was based on Clinical history and examination only / Net kliniese geskiedenis en ondersoek ☐ Clinical and other investigations / Kliniese en ander ondersoeke ☐	Diagnose is gebaseer op

RESULTS OF INVESTIGATIONS / ONDERSOEKRESULTATE

Investigation (excluding TB sputum) / Ondersoek (TB sputum uitgesluit)	Results / Resultate
	Awaiting result / Wag vir resultaat ☐
	Awaiting result / Wag vir resultaat ☐
	Awaiting result / Wag vir resultaat ☐

If TB, give sputum result → Microscopy / Mikroskopie: Positive / Positief ☐; Negative / Negatief ☐; Awaiting results / Wag vir resultaat ☐

Culture / Kultuur: Positive / Positief ☐; Negative / Negatief ☐; Awaiting results / Wag vir resultaat ☐

← Indien TB gee sputum resultaat

REFERRED TO / VERWYS NA

Name of hospital or clinic	Naam van hospitaal of kliniek
Patient Registration No / Pasient registrasie nr	Date of admission / Datum van opname

NOTIFIED BY / AANGEMELD DEUR

Name / Naam	
Address / Adres	Profession / Beroep: Medical practitioner / Geneesheer ☐; Nurse / Verpleegster ☐; Other / Ander ☐
	Signature / Handtekening
Tel no / Tel nr	Date / Datum

PARAVIEW 56 (503405)

Local authority: If a copy of this notification is to be sent to another local authority, please confirm whether you will include this notification in your weekly summaries (GW 173 or 174)

Yes / Ja ☐
No / Nee ☐

Plaaslike owerheid: Indien 'n afskrif van hierdie aanmelding aan ander plaaslike owerheid gestuur word, bevestig asseblief of hierdie aanmelding by weeklikse opsomming (GW 173 of 174) ingesluit gaan word

REPLY BY LOCAL AUTHORITY / ANTWOORD DEUR PLAASLIKE OWERHEID

Reply to referring doctor/nurse with brief report of further findings and management

Antwoord aan verwysende dokter/verpleegster oor verdere bevindinge en hantering

Signature / Handtekening		Date / Datum	Tel no / Tel nr	

APPENDIX 12.7

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Division of the Deputy Registrar (Research)

COMMITTEE FOR RESEARCH ON HUMAN SUBJECTS (MEDICAL)
Ref: R14/49 Sekete

CLEARANCE CERTIFICATE PROTOCOL NUMBER M 970522

PROJECT An investigation into notification of childhood tuberculosis and its related implications in the district health authority of Germiston

INVESTIGATORS Dr P D Sekete

DEPARTMENT Paediatrics,
Self-employed

DATE CONSIDERED 970530

DECISION OF THE COMMITTEE

Approved unconditionally

DATE 970610

CHAIRMAN. ..... (Professor P E Cleaton-Jones)

c c Supervisor: Professor L A Wagstaff
Dept of Paediatrics, Baragwanath Hospital

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and ONE COPY returned to the Secretary at Room 10001, 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.

DATE...18/6/97.....SIGNATURE .....P.D. Sekete.....

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

APPENDIX 12.8

Greater Groter **Germiston**

BEDFORDVIEW: ☎ 455-1610
Fax: 455-2624
KATLEHONG: ☎ 905-4130/0323

City Health Department
Stadsgesondheidsdepartement

P.O. Box 26
GERMISTON
1400
☎ 871-7130/7453/7758
Fax: 871-7527

ENQUIRIES: Dr N E Khomo
OUR REF.: 2/5/8

Dr P D Sekete
294 Phooko Shopping Centre
KATLEHONG
1832

Dear Dr Sekete

REQUEST FOR PERMISSION TO INTERVIEW AND CONDUCT RESEARCH

This department has no objection in you doing the study in our area of jurisdiction. However, both your methods and questionnaires need to be tightened up a little. I would for a start exclude the patient as this becomes another study. It is always better to make your study as simple as possible by answering or asking one research question. If this is your protocol, have you done a literature review.

Note: You can only do a randomised study in a clinical trial.

13/4

DR N E KHOMO
DIRECTOR : DISTRICT HEALTH CARE SERVICES

City Health Department

Enquiries: **M.R. NTSIE**
Our Reference: **8/1/3/4**

29 JUL 1998

The Private Practitioner/Hospital Superintendent
GREATER GERMISTON

RE: NOTIFICATION OF DISEASES

The Department wishes to remind all Private Medical Practitioners/Hospital Superintendent in the Greater Germiston area, that after diagnosis of a notifiable medical condition, the District Health Care Services, Germiston should be notified as soon as possible.

Private Medical Practitioners/Hospital Superintendents are therefore required to have the GW 17/5 book available at all times for notification purposes. This book is available at East Rand District Health Services, 40 Catlin Street, Germiston.

Diseases/conditions that must be reported telephonically upon diagnosis include AFP/Poliomyelitis, cholera, food poisoning, measles, tetanus, typhoid, the haemorrhagic fevers, rabies and food poisoning where more than (4) four cases were involved.

Your co-operation in this regard is much appreciated.

DR N.E. KHOMO
DIRECTOR: DISTRICT HEALTH CARE SERVICES

mrn/vp/gr
28 July, 1998

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APPENDIX 12.10

DEPARTMENT OF HEALTH

Enquiries : Ms. Evelyn Mphahlele
Tel No. : (011) 355 - 3843
Fax No. : (011) 355 - 3525
Date : 15 July 1997

Dr. P. D. Sekete
294 Phooko Shopping Centre
KATLEHONG
1832

RE: RESEARCH ON TUBERCULOSIS NOTIFICATION

Regarding your application for approval to do research on TB notifications, this letter serves to inform you that we have no objections. You should however discuss the survey with the Regional Office of the East Rand.
(Mr. Bheki Sibeko, Tel. 820 - 0517).

In agreeing to this survey, I contacted my staff working in the TB Programme and enclose the comment I received from them (merely for your information but NOT as an obligation).

Please could we receive a copy of your results, which I am sure will assist in our work.

Thank you.

Dr. Carol Marshall
Chief Director: Health Programmes