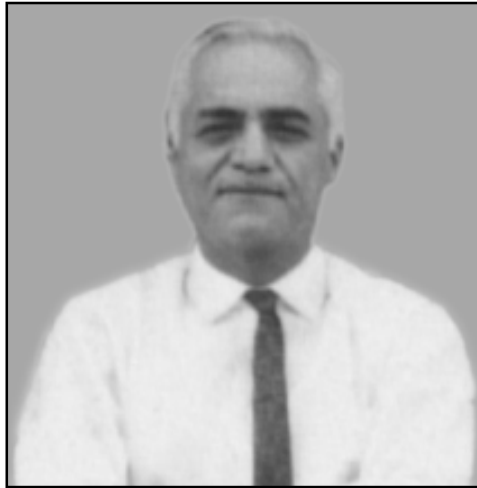


2. THE FORMATIVE YEARS



Padmashree Dr DR Nagpaul

Director & Crusader of NTI ; Term of office 1963-1976

There is a dread disease which so prepares its victim, as it were, for death... a dread disease, in which the struggle between soul and body is so gradual, quiet, and solemn, and the results so sure, that day by day, and grain by grain, the mortal part wastes and withers away, so that the spirit grows light... a disease in which death and life are so strangely blended that death takes the glow and hue of life, and life the gaunt and grisly form of death - a disease which medicine never cured, wealth warded off, or poverty could boast exemption from - which sometimes moves in giant strides, or sometimes at a tardy sluggish pace, but, slow or quick, is ever sure and certain.

Charles Dickens

Nicholas Nickleby

2.1. Development of protocols

Once the Institute was established, the very first task was to devise and implement a work plan. The NTI developed the tradition of putting together protocols for a variety of studies dealing

with different aspects of TB control. Five protocols in the inauguration year (1-5), 15 in the next year (6-20) and 20 during the year 1961 (21-40) were written (Annexure II). Apart from the number, one will be overawed by the variety of hypotheses and ideas that passed through the stages of formulation, scrutiny for feasibility, field testing for practicality and applicability, during this short period. To gain acceptance, every idea must have enough substance to make some contribution, to the overall goals of the NTI. Hence, every idea generated by an individual officer or a group of officers, must gain credence by consultations with personnel from other sections.

A Technical Coordinating Committee (TCC) was constituted for this purpose. The TCC headed by the Director had officers from every section as its members and invited others when required. Meetings were held once in a week or more often when necessary in the committee room commonly known as TCC room. A draft protocol would be prepared elaborating the idea in clear terms regarding the

objectives, methodology, personnel, material required, time involved and funding. It would then be presented for approval to the TCC. It would be the privilege of each member to carefully scrutinise and critically examine the protocol presented. As each member hailed from a different background, the ideas presented would be viewed from different angles. The queries that arise in the ensuing discussion would be different from the ones earlier encountered. It would be the duty of the author of the protocol to defend the hypothesis to gain acceptance. All participants had the freedom to speak for or against the procedure sans hierarchy. Therefore, there were, long discussions. Logically, by this process, the original idea got enriched by the contribution of others. Additionally, the entire team became aware of the activities of different sections and of the institute as a whole²⁹.

In early 60s, the idea of conducting operations research applicable to public health aspects was fairly new. Health practices, in vogue then, focussed on the delivery of



TCC in Progress

highly complex services to millions of people through thousands of doctors and other health workers. To formulate important questions in health research or to refine methods and instruments of research was not easy. The size of our country, different languages spoken and customs followed, brought its own problems.

Thus, the TCC became the hard testing ground for all the ideas. Only successful ones would be referred to as a research project/ protocol and would be passed for field work. The TCC also reviewed

the work done and modified the course of work in progress, if warranted. After the completion of the work, it would conduct a peer review on the analysis and presentation of the work before publication. Large scale quantitative community based studies in public health give rise to a variety of difficulties, especially those concerning the precision of the tools used because the tools themselves have components of fluctuations or ranges in interpreting them. For e.g., problems on the large scale - what sample size would be appropriate to

represent the country? On the smaller scale - if the symptom is used as a tool, which definition of symptom/symptoms would be the most accurate in netting most TB patients? Further there would be other issues like persistence or non-persistence, severity or/and duration of symptoms. Tuberculin testing is a simple quantitative procedure. Conversely, the interpretation of tuberculin test is not easy i.e. who is infected and who is not? As it was found in later years, this question gets complicated as is true with the chest X-ray reading. Much exploration is required to standardise tools so that they are comprehensive, simple and can be adaptable to a variety of field conditions²⁹. Thus, it is astonishing to note that way back in 1959 itself, in its apex technical forum, the NTI had adopted the systems concept and a multi-disciplinary approach which overcame artificial boundaries. It was highly amenable to rapid learning from exchange of information between groups. It facilitated the use of formalised and objective investigative procedures. It focused strongly on

taking up practical and relevant problems. More important, it weeded out repetitive or irrelevant studies or those that maintained status quo.

2.2. Formulation of work methodology

Once the protocol or a study was approved, the concerned section officers designed the necessary data entry forms and recording procedures. It requires skill to design simple and mnemonic entry formats purposively linking different kinds of data with the study objectives. These must not be too laborious and yet must not miss important clues; must be understood by all types of field workers and handled by them without difficulty; must be easy to fill, and amenable for statistically acceptable methods in collection, recording and coding. Since data processing was mostly done by hand sorting, records such as files, forms, cards and lists were designed to suit such methods. With the arrival of punch card machines, the methods changed and large data handling began.

Work instructions were written and a briefing session was held to make every participant understand her/his role. It was repeatedly stressed that she/he should follow the procedures step by step and complete all steps. Changes if any should be brought to the notice of the responsible authority. Work procedures were modified or improved after due consideration of several linked aspects. If mistakes occurred, these too were to be recorded, and ways in minimising them later were encouraged.

Most men and women employed were new recruits. Only a few had previous experience in the field of TB but not the kind that would be relevant at the NTI. The NTI had to prepare a perspective based on the findings of how things worked in the field of general health and how it could be effectively used to benefit TB work. To do this, it had to work extensively in places that mattered, i.e. rural areas; and utilise the available infrastructure, the general health services (GHS); and resolve problems encountered. Therefore, everyone participated in evolving a **work culture**.

Another important aspect while doing field work, was the attitude towards the people. The NTI staff were to be congenial. They were not to force a particular time upon them to suit investigation work or interfere in their private lives. To achieve higher coverages, they must work for longer hours, sometimes even on holidays. To facilitate specific work, house calls may have to be made early in the morning or late in the evening. Fortunately, due to the enthusiasm of the staff everyone cooperated and adhered to these work disciplines despite personal inconveniences. It proved to be a boon in achieving higher coverages. It was also appreciated by the people.

Field work was necessarily a team effort. A special aspect was sharing the work of others. This called for an exchange in the roles depending on the needs. Thus, it was not strange to find the HV going house-to-house to register census data, followed by a MO endeavouring to enlist the co-operation of the members of households registered. In emergencies, everybody assisted

everybody. However, only those trained, executed specialised jobs. Thus, a sociology questionnaire would be administered only by a social worker and others would help by locating the patient or assisting in questioning if a language barrier came in. Tuberculin testing was done by a trained tester and others assisted him in holding the patient, if necessary.

In addition, the NTI had innumerable difficulties in procuring the equipment needed for various investigations. Even if the equipment was obtained, there were difficulties in its maintenance and getting spare parts. This problem became worse if the equipment was not made locally.

As narrated by Mr Stig Andersen: *Three mobile units arrived, two IGE Scouts and one Philips, bringing the total to six mobile units in NTI. Three of these units are not operational, one IGE Scout has broken down and a replacement part (coupling) has to be manufactured locally, the old IGE (white elephant) lacks spare parts for the generator, and the Philips unit is standing idle for two weeks pending*

arrival of the Philips service engineers. The WHO X-ray Engineer undertook a considerable responsibility in the maintenance of NTI transport, in addition to his normal work. The government has now sanctioned a post of Transport Officer but pending his arrival, we felt we had to do our utmost to keep our 24 vehicles going, and to work out a system of maintenance for the Transport Officer to take over³⁴.

2.3. Work done during the period

2.3.1. The Kirangur experiments

Research activities and work methodologies had to be field tested first in pilot projects. For this purpose Kirangur, a village about 125 kms away from the Institute, was selected. It is a small roadside village; hence, it was possible to take the fragile IGE X-ray unit mounted on a bus to its doorstep. Moreover, there was a conveniently located school building which could be used to set up the examination centre where doctors and technicians could work.

A study of Annexure II would reveal that nearly all the forty protocols approved by the TCC during this period had high priority in training of personnel. Both the field and the headquarters staff were being trained in carrying out different aspects of operations research.

One of the first research protocols (RP) was a *pilot protocol* for the training of newly recruited NTI staff, 21 BCG technicians and three senior health inspectors deputed from the Mysore state (now called the Karnataka state). They were to be trained selectively in activities like: identifying village boundaries; establishing rapport with villagers and relevant VIPs; assigning tasks to different workers and supervision of different activities; maintenance of standard of work and time schedule. At the headquarters, the supportive staff were trained in: processing of incoming data; reading of MMR films; processing sputum for microscopy, culture and other tests; data entry; analysis; preparation of summary reports and when decided upon, consolidating the information into a paper for

publication.

To gain work experience in conducting major research studies several pilot studies were launched in Kirangur, Srirangapatna taluk (population:1800 in 1959-60)^{29,35}. These were epidemiological and sociological in nature (i) A core group got experience in rapport building, contacted VIPs, selected a suitable place as examination centre etc; (ii) some prepared a location map of houses, registered residents on individual cards; (iii) others briefed and motivated the registered population and escorted them to the examination centre with identity slips; (iv) trained persons did tuberculin testing in accordance with a precoded design on a selective basis; (v) the trained vaccinator gave BCG vaccination (in different doses given selectively by design); (vi) the XT took 70 mm chest X-rays of those five years and above; (vii) symptom elicitation and clinical examination was done by a MO. A follow up team which consisted of tuberculin and vaccination scar readers, LTs and HVs, carried out: three-month and one year follow-ups.



*Dr. VB Naidu
Medical Officer I/C training*



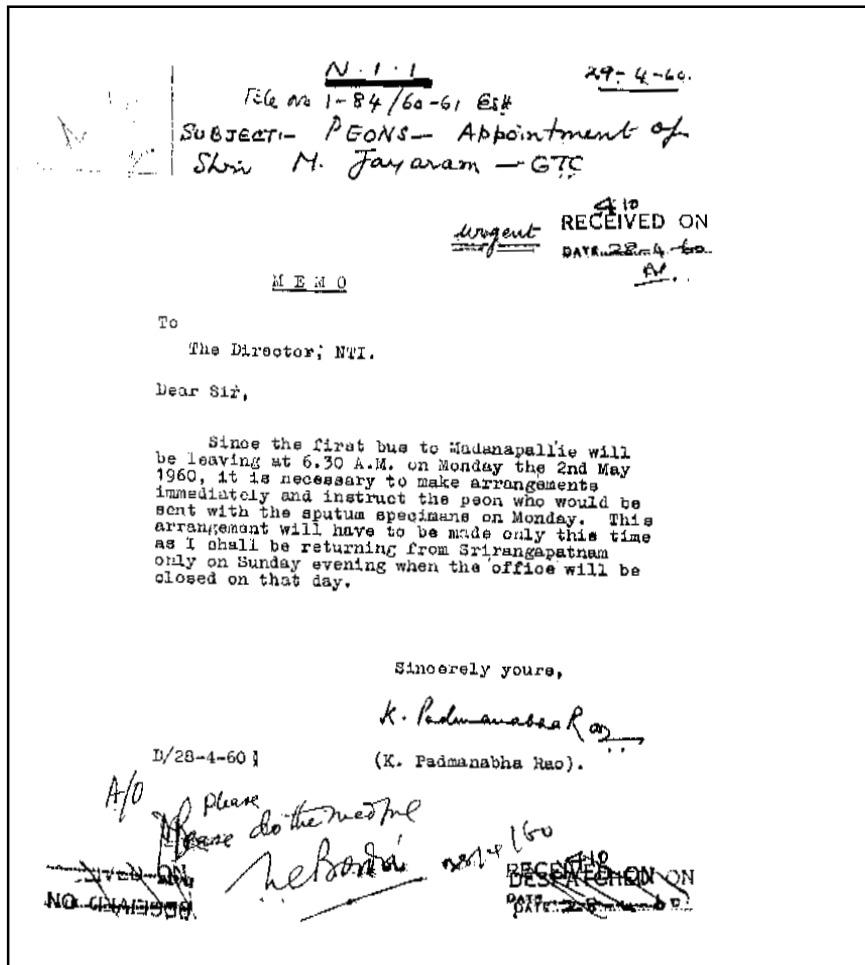
1. Village field activity



2. Village field activity

The entire staff of NTI was shifted to the Kirangur camp. The daily work schedule at the field was between 7.00 to 11.00 a.m. and 4.00 to 7.00 p.m. Incidentally, Srirangapatna was a small town and did not have a hotel facility to provide food for this large team. Cooks were recruited and posted so that the staff could run a mess. As the town did not have a petrol bunk, a vehicle with jerry cans was sent to fetch petrol from Mysore where the nearest petrol bunk was situated. Another vehicle called the communication vehicle plied between the camp and headquarters. This carried completed forms, sputum specimens, exposed X-ray films and other materials to the NTI and brought back new forms, X-ray results, sputum results and material needed for work.

During the time field work was in progress, Kirangur village was a beehive of activity. It was a sight to see the MOs and other investigators walking up and down the dusty lanes of the village either motivating the local people to go to the examination centre or in deep



consultation among themselves, sorting out technical problems. Every aspect of work was observed in detail with an eye for improvisation, unambiguous data elicitation and getting maximum coverage with minimum inconvenience to the villagers. There were discussion sessions both at the camp and at the NTI so that the work progressed as planned.

The NTI laboratory was not yet functional. Sputum specimens were arranged to be processed at UMTS, Madanapalle. The assistance rendered by the UMTS went beyond processing of sputum specimens for culture and sensitivity for M.tb. It trained two LTs of NTI on all aspects of work. The specimens brought from Kirangur by the communication vehicle had to be transported



Examination Centre in a village

without delay. Hence, a rider on a motorcycle was retained at the NTI to immediately transfer the sputum specimen to another sputum box with sufficient ice, and transport it to UMTS. From there he would bring back sterilised empty containers and sputum results. These were processed and relevant feed-back was sent to the camp for further work. This seemingly simple task of transporting sputum specimens was not easy. If the motorcycle broke down, it was not possible to get it repaired on the same day and

a stand-by was not readily available. Speedy actions were taken to send the specimens by bus and to get the motorcycle repaired. Appended photocopy shows how the speedy actions were taken in one such instance.

All senior officers, including the Director, visited the field station to benefit from practical experience so that work became accurate and less tedious, data entry forms less cumbersome and more informative. As administrators, they had to resolve practical problems like

funds, fault repair, supplies and technical problems that cropped up in the field. They also worried about sudden distress calls, e.g., X-ray breakdown needing immediate attention. A different type of concern confronted the field work organisers. For e.g. Where to set up camp? Who are the village VIPs to be contacted to maximise rapport? What is the most convenient time to get maximum coverage? How to get the cooperation of the stubborn, the non-cooperative or the panicky? What strategies to adopt? These were very relevant and important factors in field work because every area, every individual, is different.

Kirangur was the first training ground for social workers to get experience in interviewing techniques. One of the Kirangur experiments was: *“to examine the frequency of complications after vaccination with BCG in relation to the pre-vaccination tuberculin sensitivity”*. The other minor objectives were learning census taking, tuberculin testing, reading, X-ray examination, sputum examination, by experience . Thus, these studies

served the purpose of gaining experience in all aspects of field work which would be useful for future epidemiological studies as well as sociological and BCG trials, to be conducted. For the proposed major BCG Trial, the four taluks of Bangalore district, viz., Nelamangala, Magadi, Channapattana and Devanahalli, were selected. Much work was being done at NTI on planning the trial. Therefore, several experiments on BCG had been included in the work²⁹. The proposal was ultimately shelved because of the overriding priority to conduct operations research on various aspects of the District Tuberculosis Programme (DTP). Fortunately, five years later, the BCG trial proposals were revived under the aegis of ICMR. However, the venue of the trial became Chingleput, Tamil Nadu and not Bangalore. The details of BCG trial appear in Chapter III. Thus, the Kirangur camp served the purpose for which it was established.

2.3.2. Other Experiments

Bangalore district was selected to

A Tragedy

The Kirangur camp where the field teams were stationed was situated in a secluded wooded part on the banks of the river Cauvery, about 3 kms from Srirangapatna. Everyone, from Piot, Banerji, Muthusubramanian, to the cook stayed in the camp. One day, as was the usual practice before breakfast, Verghese, XT went in for a swim in the river. Unfortunately, he got into the turbulence and before anyone could guess what was happening, drowned and never came up. Verghese was a very friendly person and had joined only recently. His body was retrieved by local fishermen by afternoon. After hectic parleying, necessary approval to transport the body to Kerala, his home town, was obtained avoiding postmortem. By late evening, the body was taken to the NTI. As ill luck would have it, the director was away and no one had the authority to use the government vehicle to transport the body to Kerala. The urgency was such that the senior most available officer, Banerji, took the decision. Nobody raised audit objection later! The teams were back to work 7.00 a.m. next morning.

conduct smaller studies simultaneously. These provided the necessary training to different categories of staff, for major studies which were constantly being planned. For e.g. a pilot "Awareness study" was carried out in randomly selected villages of Bangalore district. The objectives of the study besides training of social workers and formulating interviewing techniques were:

1) To obtain a preliminary picture of the level of awareness of TB and

2) To compare the results of interviewing on symptoms

before X-ray survey (in some villages) and after X-ray survey (in different villages).

In fact, at that time, very little information was available in the field of 'medical sociology'. With Dr Banerji and Mr Andersen in the lead, the main theme, of understanding the sociological aspects related to health of the people; to feel their pulse and identify ways of enlisting their cooperation, gained centre-stage. They discussed extensively and constantly revised opinions based on new information coming as a

feedback from the field teams. They were joined by Dr Piot who had considerable field experience; Drs Raj Narain, Bordia, Geser, Mahler and Mr Jambunathan. Their collective wisdom would not yield to unqualified acceptance of highly attractive sociological techniques in vogue in western countries. Instead they looked at the problems and formulated plausible questions. For e.g., Are people aware of symptoms of pulmonary TB? How many of the active cases found were aware of their symptoms attributable to TB? Can we find potential TB cases by questioning people? Can we design statistically applicable interview techniques to yield quality data?

Would this data form a basis for case finding tools? Would these tools be applicable in different epidemiological situations³⁶?

They also battled with another different, but equally important area of investigation: 'action taking' pattern. How much sickness, suffering, any other distress signal or what criteria prompt or impel people to take action? What will they do? Where will they go? What other influences play their parts in taking any decision? Yet another was the "acceptability" pattern. When diagnosed and informed "you have TB", how many would accept the diagnosis and take action? An important variable is the



Sociology Interrogation

individual's impulsive behaviour which is indeed difficult to determine. Understandably, the behaviour would be influenced by financial, emotional, educational and religious factors³⁴ Those battling with the above questions at the NTI, knew that despite these obvious quandaries, there would emerge a broad pattern amenable to scientific computation. The difficulty was to quantify them on a scientific basis. The purpose of doing this research was to feed the information to develop a socially applicable TB programme which could offer the best possible returns from the available resources.

The tasks set before the epidemiology section (EPS) were slightly different but yet vital. It had to obtain information on the size, extent and nature of the TB problem in the community. The information obtained should yield precise estimates of the disease burden. Thus, the work was not just the study of distribution and determinants of TB but where, which and how much the various factors attributable to TB are

distributed, and interrelated. It had also to develop through systematic studies, a comprehensive picture or model into which the various determinants of TB problems are fitted and available for immediate use.

Field work was extremely labour intensive and physically exhausting. Both accuracy and high coverage for all examinations were the basis of standard scientific epidemiological investigations. The staff had to be trained to carry out different types of skilled tasks e.g., tuberculin testing, reading, X-ray examination. The tasks changed from study to study in accordance with the needs. Each item of data, therefore, was considered specific. So, both the trainers and the trainees met frequently and had long improvisation sessions. During these endeavours, both had first-hand experience of mass contact, and of ways of getting adequate cooperation of the community. Desk planning methodologies were perfected. In the process, they developed research manuals (RM), for census



Old X-ray unit

taking (RM/1), tuberculin testing and reading (RM/2), XT (RM/3) and LT (RM/4). These manuals were extensively used while training. In addition, variations between different workers doing the same task and different workers doing different tasks e.g., tuberculin testing, reading, enumeration, symptom questioning, etc., were kept to the minimum by constant statistical monitoring. At the end of training, the performance of staff trained in these aspects was compared and best were selected for the field work.

As data began pouring, the



New X-ray unit

Statistics Section (STAT) got busier by the day. In fact, the pressure was so much it could only concentrate on receiving and checking the large quantities of data pouring in from different field activities, arranging them to be punched, after random scrutiny. There was hardly any time even for preparing tables and preliminary analysis work. There was pressure on the NTI to concentrate on planning different studies which would yield the necessary and relevant data for the proposed nationally applicable TB control programme. These studies would be carried out in Tumkur district³⁴.

2.4. The Tumkur district baseline studies

After having gained expertise in carrying out research field work at Kirangur and Bangalore, one of the most challenging assignments of the NTI was planning and execution of operational studies which had direct bearing on the proposed nationally applicable controlled programme. What preventive measures can be taken to break the chain of transmission? What were the likely steps involved? Which method is cost effective and efficient? Which agencies could be involved? Will



*Mr. S.S. Nair
Sr. Statistical officer*



*Mr. G Ramanatha Rao
Jr. Statistical officer*

this be simple and easy to understand by those who operate it and those who derive benefits? Can this be carried out without guidance from experts? Will it not demand a superstructure to maintain it? Will this be equally applicable anywhere in this vast country? Most important, will this be acceptable to the people, especially the rural uneducated poor? Will they be appreciative of the services rendered to improve their health? A core group of highly motivated scientists began working together. Even though national and international officers headed this programme, it did not recognise hierarchy. The questions that arose were not new. However, their concern to effectively solve them was new.

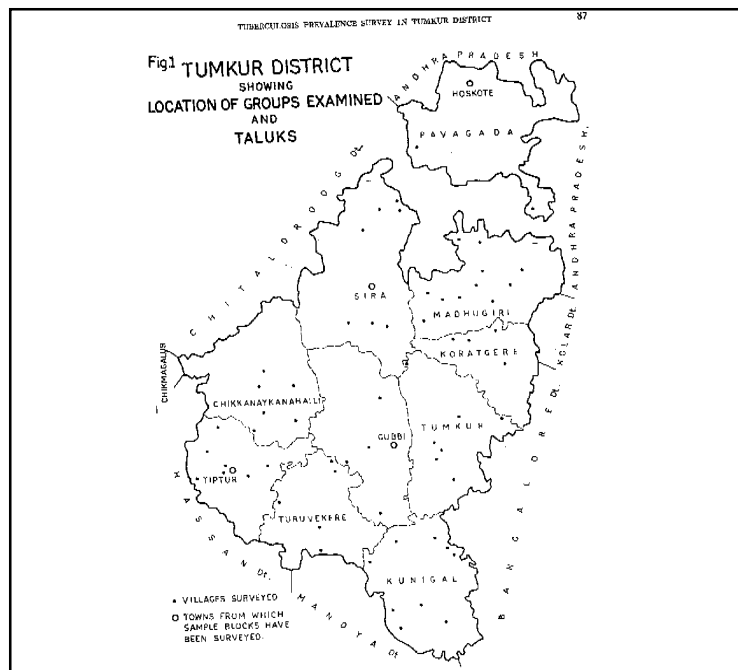
The Bhole and the Mudaliar Committees^{13,37} had kept in view some of the queries related to free treatment, emphasis on preventive work, adequate health services to the vast population, etc. The Committees had suggested that the training of basic doctors should be designed to equip them for guiding the people to a healthier and

happier life. Since Independence, the Indian government was run on democratic principles and community development was given a high priority. People's participation in various schemes were being encouraged. In the health sector, the Mass BCG Campaign, National Malaria Eradication Programme (NMEP), and National Health and Family Welfare Programme (NHFWP) had created a general awareness among people. The experience from these programmes were utilised by the NTI. These led to the decision to base the operations taking the entire district into consideration. This was because the district was an administrative unit in India with recognised boundaries, divided into taluks, sub-divisions and villages. All states in India have districts. Census, revenue and other data were readily available, all linking to the district principle. Various departments of the government including the health department used this fundamental unit. Hence, it could be used in TB work too and standardised scientifically to be applicable elsewhere.

In selecting a district for doing the field work, Tumkur was the obvious choice. Tumkur was a district adjacent to Bangalore, with the headquarter town, just 70 kms away, on the highway NH4. It had all the characteristics of an average Indian district and majority of the population (88%) lived in 2,400 villages.

Among the first protocols written, was the one by EPS: RP/19 - A *baseline TB prevalence survey in Tumkur district* (Annexure II). This was a vital study providing accurate

estimates of infection and disease prevalence. The information on prevalence of infection was not available from NSS as in that survey the population was not subjected for tuberculin testing. It should be noted that this was the first survey in India wherein, adopting the district as a unit, epidemiology work was done in a randomly selected population. It was to the credit of the teams that field work was completed in record time. The main findings are given in table on page no. 51.



Tumkur District map with location of groups and taluks

TABLE

	Male	Female	Total
1. De facto population	16,283	15,684	31,967
2. Infection rate (%) [14 mm]	33.5	28.5	30.9
3. Radiological prevalence rate (%) [based on two readers]	2.5	1.2	1.9
4. Bacillary prevalence rate % (among X-rayed)	0.56	0.25	0.41

Meanwhile, the Control Section (COS) developed several protocols (RP/22, 23, 24) had several sub-protocols, (Annexure II) covering case finding and treatment activities and for assessing the immediate results of the programme. The major protocol RP/21: *Investigations of nationally applicable TB control programme*, is of great historic importance.

To implement the tasks elaborated in the protocols, most of the resources of the NTI were mobilised and transferred to the camp office at the Tumkur District TB Clinic. It is to the credit of the GOM that a large portion of the District TB clinic premises was loaned to house the camp/field offices, free of cost. Field work began in April 1960. The studies continued till 1963. The

problem-solving sessions were continually being attended by senior officers and field staff. Sometimes these sessions were held in the village where actual work was going on. Drs Piot and Baily were present, almost daily, to oversee different activities. Besides the regular NTI staff, services of the three BCG teams were utilised to optimise output of different types of activities. The enthusiasm was such that in the first three months, about 1,12,000 population was covered. By October, the following major operations research got under way:

- a) A pilot phase was conducted in Beladhara Circle, Tumkur taluk. Here, case finding by mass campaign X-ray (MCX) was undertaken and cases identified

were treated. This helped to gain experience in field problems for drawing up of the protocols of the operations research phases;

b) The first phase of operations research envisaged the mass campaign and community development approaches with X-ray [MCX and case detection X-ray (CDX)] and sputum [mass campaign sputum (MCS) and case detection sputum (CDS)] case finding. In the mass campaign approach (MCX and MCS) the BCG teams were utilised to refer tuberculin positive persons and all above the age of 40 for chest X-ray or for sputum examination offered in the villages. In the community development approaches (CDX and CDS), the community development personnel sent the symptomatic persons for X-ray or sputum examination.

The treatment of cases diagnosed by these four different approaches had been undertaken by four channels, viz., (i) the village panchayat chairman; (ii) gram sevak; (iii) primary health

unit (PHU) and (iv) the NTI channel (HV from NTI). The first phase ran according to schedule from April 1961 to the middle of August 1961. The treatment of cases continued for a full year when their post-treatment assessment was made.

c) The second phase of the operations research programme started in September 1961. This phase was based on some of the experience gained in the first phase and keeping in view the feasibility of a control programme. The phase was planned with the four different approaches as envisaged in Phase I. As it was thought that the first phase was conducted in the low prevalence area, Phase II was implemented in the northern half of the Tumkur district which presumably had a higher prevalence. The essential differences in the case finding and treatment approaches in Phase I and Phase II consisted of:

i) In mass campaign approaches, symptoms were used as an

additional screening test for case finding in Phase II as against only tuberculin reaction in Phase I. Tuberculin tests were given only in the age group 0-20 in Phase II as against all persons in Phase I, limiting the BCG vaccination also to 0-20 in Phase II. BCG vaccination was limited to tuberculin negatives in 0-40 in Phase I.

ii) In community development approaches, X-ray and sputum examination services were offered at a central point in Phase II as against in the villages in Phase I. The criteria for selection remained the same in Phase I and Phase II.

iii) The treatment in Phase I had been organised through the four channels enumerated above independently. In Phase II, all treatment had been offered through the PHU situated in the area of operation with different channels such as village panchayats, gram sevaks acting as subsidiaries to the PHUs. The community development programmes in Phase II had been

planned so as to study long-term impact of a regular case finding facility offered within short distance in rural areas.

In the second phase, double drug (PAS+INH) therapy was given to all sputum positive cases diagnosed either in the sputum or X-ray case finding programmes and INH alone to others. In the first phase, INH alone was available to all cases. The initial motivation in all the channels was done by the NTI HVs (RP/24 Annexure II)

The analysis of the case finding results have revealed the following points of operational relevance. The advantage of a tuberculin reaction in selecting groups for further examination was outweighed by operational implications of coverage and absenteeism at various stages. Awareness of symptoms among positive cases could form the basis of a very efficient, integrated case finding programme. The older age groups, where prevalence of radiological cases was higher, neither responded favourably to direct motivation nor attended

X-ray centres (XCs) which were within walking distance.

To handle the enormous output from different areas of work efficiently, STAT established a field statistical unit at Tumkur comprising a Statistical Assistant (SA) and a statistical clerk to assist the field teams. This unit dispensed the precoded cards and forms on a daily basis and after completion of work, received them, checked these and the next day, arranged for their despatch to the NTI by the communication vehicle. In addition, the unit transferred the MMR X-ray results, direct smear results and maintained the treatment division where treatment was offered to persons diagnosed as a case in the survey. It also maintained the *Daily log book* for calculation of cost and assessment of transport efficiency.

Many types of operational research activities were initiated. For e.g. the new X-ray machines were field tested. MMR chest X-ray readings were underscored with an epidemiological bias and became more objective. Different readers

were subjected to assessment under joint parallel reading and umpire reading. Every X-ray reader was evaluated and information recorded was standardised. Methodologies of collecting 'spot' (evening hours when field work was being done) and 'overnight' (whole night sample collected from the patient early next morning) sputum samples, their storage in the field, transportation to the laboratory at NTI, were worked out.

The Sociology Section (SOCS) had a highly motivated team of workers. Through operations research studies, they began to evaluate the level of awareness and action taken by patients, i.e. persons with chest X-ray shadows suggesting TB by two readers and persons whose sputum is positive by smear. These two are different concepts. Even in the west, clear indicators were not available because sociological concepts were not given serious weightage till then. Further, the concepts of the west, even if available, may not be applicable in India.

Research studies RP/29, 30, 32 and 34 (Annexure II) formed the basis

of sociological considerations viz., community awareness, felt need and action taking of TB and qualitative assessment of operational investigations. The findings of these pathbreaking studies were fully incorporated in the Programme.

Words fail to describe the exemplary work carried out by field workers. Excerpts from the WHO quarterly reports³⁶: *With such a large part of the senior staff not in position, so much more responsibility is left on the shoulders of those who are present. It is wonderful to see how some of our staff, particularly the technicians, are taking on these increased responsibilities with a tremendous sense of duty. We have, for example, now four case finding programmes operating in Tumkur district with only one MO in charge. One senior health inspector heads each of these programmes. He carries out the planning and organisation of the work with all the assurance of a seasoned public health officer. If any one of our colleagues is feeling frustrated in New Delhi or Geneva, he should spend a couple of nights - as did our GOI Adviser in TB recently*

to see how the staff work. Come and see the community development approach where a Senior Health Inspector gets 200 villagers, who have converged from three or four villages with slips issued by their Panchayat Chairman, into an orderly queue under the big tree. The XT in a matter of 20 minutes gets tent, ropes, lighting, screens and X-ray unit in order to put the chairman as the first man on the patient list.

In the field programmes and at the NTI itself we have groups of excellent technicians doing work which is more often than not slightly more than what they are really expected to do. The staff are just that little better than they need be which makes all the difference. The WHO statistician says that our sorter-operator is the smartest man he has come across at a statistical machine. These people are the hard core of NTI and thanks to them NTI seems to grow into something that the government, the WHO and UNICEF can become proud of.

From the epidemiological, sociological and operations research studies, invaluable information was gathered. As Dr

Baily summarises: (1) *About half the patients suffering from TB did take action and go to the nearest health centre for relief.* (2) *Most of the self-reporting patients were not diagnosed as cases of TB, nor was further appropriate action taken.* (3) *Mass case finding in any other form bypassing this action taking pattern would yield very few cases.* (4) *The cost of diagnosis would be enormous and out of proportion to the probable cost of treating them by domiciliary chemotherapy*³⁸.

Based on the findings, a draft recommendation for the DTP was prepared in 1961, keeping in mind an average Indian district, its population and health facilities available³⁹. Extreme care was taken to limit interference with the existing system, to augment shortfalls, if any, so that the TB control programme would be naturally absorbed within the system. For the first time, the application of operations research methodology was used in the field of general health. It is to NTI's credit that this methodology which was hitherto used extensively in the field of industry or war was

effectively used to reduce the suffering from a disease.

Detailed work manuals for the (i) District TB Officer (DTO); (ii) Treatment Organiser (TO); (iii) LT; (iv) SA; (v) XT; and (vi) Peripheral Health Institutions (PHIs) were prepared along with an introduction to the proposed DTP. A seminar held at NTI in 1962 was attended by senior TB officers from the GOI and from 12 different states⁴⁰. (Annexure III, sl no.3). After obtaining approval of the concerned authorities, the first edition of the manuals were issued in 1962.

The national programme policy as enunciated in the introduction manual of DTP (Annexure III, sl no.3) comprised:

- ˘ Domiciliary treatment
- ˘ Use of standard drug regimen
- ˘ Duration of treatment, 12-18 months
- ˘ Treatment free of cost
- ˘ Priority to newly diagnosed smear positive treated patients
- ˘ Treatment organisation fully decentralised
- ˘ Efficient defaulter system/mostly

self-administered regimen

- ˘ Timely follow up
- ˘ Chemoprophylaxis not recommended as it is impractical

to be available through its vast reaches.

2.5. The longitudinal survey

Perhaps nowhere else the problem of tackling TB was treated as a multi-dimensional problem. The problem and its determinants had been identified. Methods of intervention were scientifically worked out. **For the first time, social sciences were consciously included as hard evidence and peoples' voices were placed on par with science, technology and administration. The National Programme was fully integrated with the GHS of the country, thus extending the scope of TB work**

In 1961, the EPS undertook an illuminating study (RP/33 Annexure II) : The Longitudinal Survey, in which observations were repeated in the same population at a given interval over a period of five years by means of follow-up examinations. A rural population of about 65,000 living in 119 randomly selected villages of Bangalore district were examined repeatedly four times (0 - 1½ - 1½ - 2 years) during 1961-68. The following tools were used: tuberculin test (all ages), X-ray



*Longitudinal survey
Field work in progress*

(five years and above) and sputum examination (for X-ray suspects). The survey was highly ambitious and was difficult to conduct due to a variety of practical difficulties and technical challenges.

It was planned that two teams would attempt to cover minimum of 80% of the population for all the examinations. Some of the problems associated with the field work have been elaborated in Chapter 3. The population being studied was highly mobile. There would be migration, immigration, births and deaths. To establish identities after a lapse of time for different examinations by different investigators was not easy. A new methodology of census, identifying the individuals, houses, location maps of households, etc., had to be developed. Data generated from such a mobile population had to be collated so that examinations conducted at different times had to go to the records of the identified

persons only. This was a new kind of data, a data flow of how TB behaved in a population living in a particular area. It revealed the natural history of TB in a general rural population, during the survey period. The report was published in 1974, as to draw tenable inferences would take time and much effort. The results of the survey are given in Chapter 3.

2.6. Building infrastructure for training

From the outset, training was one of the major activities of the NTI. BCG teams comprising of medical and non-medical personnel were trained in the theoretical, administrative and organisational aspects of the mass BCG vaccination campaign. BCG teams from southern states, Kashmir and Rajasthan and from the WHO arrived for training. In the last quarter of 1960, 36 trainees arrived from different parts of India for the

If the beginning of 1959 marked the modest start of NTI, the beginning of 1960 got the first proper programmes underway and 1961 was the time when NTI became ready to receive the first batch of trainees; then the beginning of 1962 was to become the time when NTI began to make itself known to the world outside Bangalore⁴¹.

second All India BCG training programme. A six-week refresher training course for BCG technicians and team leaders from nine states of India was held in 1961³⁵.

Since the mass BCG campaign activities were limited in scope, NTI came up with a training strategy for DTP key personnel which differed from the one existing for BCG workers. It had to develop the necessary infrastructure for training different kinds of key personnel needed in the diverse activities. Serious work began for developing a curriculum, course content and strategies to impart didactic, as well as on the job practical training. This was not an easy task both for the trainers and the trainees. The trainers had to impart the new knowledge obtained from the vast experience of previous research and the findings from just completed or ongoing field studies. The trainees had to receive it, find meaning and adjust to its work procedures much against to the prevailing practices that were predominated by the clinical approach. On 15th May 1961, the

first batch of trainees consisting of MOs (5), XTs (6), LTs (7) and HVs (13) arrived and NTI launched its first six-month training course for key personnel for the NTP district centres³⁶. They were from Mysore, Kerala, Andhra Pradesh and Bihar. The training course concluded in November 1961. Unfortunately, it turned out that the trainees had varying qualifications and different kinds of experiences. Some had not even worked in the TB field. NTI could not send them back. However, the first lesson was learnt. For future training courses, it took care to requisition, from state governments, trainees who had the relevant and basic knowledge or had been working in the field for TB.

As stated by Mr Andersen: *The first batch of trainees had a unique chance in participating in building up our first DTP. The trainees went through many hardships. We committed many mistakes and wasted lot of our and trainees time, initially, in the first three months. They were first grade material. They will make good ambassadors for the NTI – if the state*

top administrators give them a chance.

Tapping all the available resources, NTI began to develop a new methodology of imparting training to various types of TB workers operating the TB control programme. From lectures, demonstrations and work situations, a robust methodology began to emerge. From this experience, manuals, data entry cards and forms were developed. These were field tested and improved upon wherever possible. Though most activities were rural oriented, part of the training was in urban areas. The NTI was working at a furious pace to build and equip lecture rooms, demonstration infrastructure, hostel facilities for trainees coming from different parts, etc. In consultation with the GOM, 'Garden House' (which was just behind the Avalon premises) was acquired, along with several garages and cook houses. Ten garages were built and a contract was given to build a temporary hostel.

High expectations rested on NTI for

the training. The second batch of trainees promptly arrived in January 1962. As reported by Mr Andersen:

On the 22nd January the second training course for key personnel began in the Institute. The emphasis has been placed even more heavily than before on practical work towards TB control: the primary objective remained that of imparting the community based approach. Four weeks of lectures and demonstration in Bangalore and Tumkur, orientated towards the planning of a district programme, seemed enough for doctors and HVs. The overall plan for the above training programme was that all categories of trainees were given an introductory lecture on NTP and basic techniques for each category were provided during the first two weeks. Thereafter, for nine weeks they were rotated through NTI field programmes and sections. During the following nine weeks, they participated in the proper training programme where they worked as teams in Anantapur district where the first DTC was being implemented. Finally, the trainees were put through a series of practical and theoretical

tests before winding up of the course.

Based on the experience of the first course, the period of training was reduced to four months of which a very considerable part was to be spent in **'do it yourself in Anantapur district'**. After the experience gained in the second training course, they decided to conduct two regular training courses every year beginning in February and August, each lasting for four months.

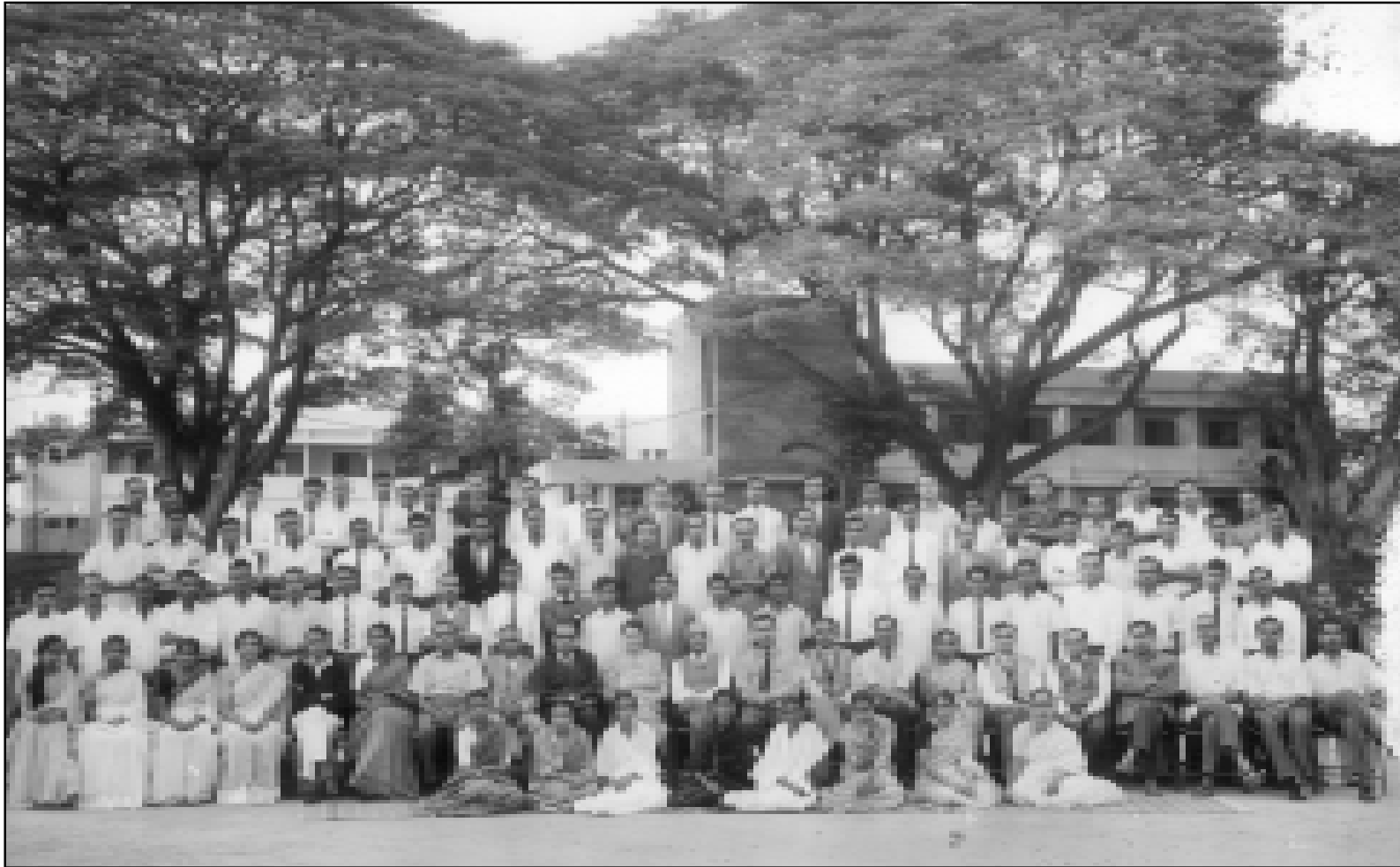
The special character of the training was that all the trainees would have to be employees of government, assigned to the specific duties which they would be required to take up on return from training. It was envisaged that through the efficient performance of the activities by trained general health workers, it would be possible to achieve a systematic reduction in the problem of TB over a period of time. In order to achieve this, a large number of personnel of various categories and at various levels need to be trained in specific job performances in a short time. The concept of constructing one TB team for each district and preparing its members for meaningful functions and

responsibilities was by that time widely accepted⁴¹.

The people receiving training would learn to function as a coordinated team. The Institute does not entirely have the privilege to choose its trainees. The initial interviews with the trainees before the classes begin and the introductory lectures seeks to establish an empathy which makes the expectations from both sides more realistic. The initial lectures on general topics, philosophy, concept and outline of the programme for the para medical workers of all categories are given to the entire group simultaneously. The group then separates into its component categories in different class rooms for didactic classes, tutorials, seminars, discussions, etc. The categories including MOs come together again for group assignments which are mostly in the form of practical work, presentation and discussion of the reports.

The practical training in its different forms has pre-implementation practicals, dummy

XI Batch of trainees (September- December 1965)



SITTING-GROUND - (Left to Right) Mrs. Vijayakumari Singh, Mrs. Chandrakantha, Miss. E M Saramma, Miss. A S Virnodkar, Mrs Dasamma, Miss. G Laxmi Singh, M i s s . Gurbachan Kaur, Mrs. C A Mary.

SITTING-CHAIR - (NTI Staff) Miss. R Indira, Miss. L Koshy, Miss M G Martha, Mrs. Zachariah, Dr. G V J Baily, Miss. M A Seetha, Dr. K Padmanabha Rao, Dr. V B Naidu, Dr. G D Gothi, Mrs. A Pe, Dr. D R Nagpaul (Director), Dr. D M Savic, Dr. P Chandrasekhar, Mr. V A Menon, Mrs. Mohanraj, Dr. Kulbhushan, Mr. S S Nair, Dr. Pyarelal, Mr. Vaidyanathan, Mr. G Krishnaswamy, Mr. P K N Murthy.

STANDING 1st Row - Messrs : S P Agarwal, B S Bisht, P Anjaneyulu, Noorulla Hussaini, M G Quadri, B B Rath, B P Patel, R N Kapoor, B P Pande, S H Rahman, H A Dhonde, Laxman Rao, B Janakirama Rao, Jamilur Rahman, Davendram, D S N Reddy, R K Sahoo, M R C Reddy, S C V Chetty, S R Siddiqui, N R Pershad, Bachan Singh Bist, K B L Mathur, K D Davange.

2nd Row - Messrs : K Krishnappa, P Subrahmaniam, M Akbar, T N Shetty, C Narayanaiah, R C Sukla, R L Kureel, S B Kadam, B R Avasthi, S Z Dholakia, M Fazlulla, M M Hussain, S H Joshi, P V Parikh, S H Ranshringare, N C Restogi, S V Shantha Raju, A N S Nair, J C Muzumder, R D Pandey, Chouthmal, H T Giriappa.

3rd Row - Messrs : S Varadarajan, Krishnan Nair, K Thiagarajan, M Sivaramakrishnan, C Y Abdul Majidh, M Kannan, Ghous Mohiuddin, K Nagasubrahmanian, M M Ghildiyal, R Prasad, K V K Nair, B S Chauhan, S B Mehrotra, B G Patil, M G Hapse, B P Verma, Prem Phukan, W G Shevagoankar, D C Ghosh, B Giri, A K Ghosh, P B Shrotriya, R P Bhatt.

programme, implementation and supervision which creates a training situation wherein each trainee learns her/his own job, gets conversant with the nature of the job of her/his colleagues and becomes aware of the links and flow of work of all categories of personnel in the entire programme. The trainees observe and practice the knowledge that they have gained with respect to several important activities and tasks of the programme. On the spot supervision and guidance by the NTI staff helps the trainees in establishing a firm foundation in the practical approach.

Training in implementation is more sophisticated. The teams are deputed to the district where the programme is to be started or where the programme is not working too smoothly. This involves working with the health personnel in the area, imparting the knowledge, attitude and skills the trainees have gained from the training in order to introduce the necessary changes in the working situations, so that the programme gets established as a part of

integrated health services. This is a situation which calls for considerable tact on the part of trainees as well as surmounting the difficulties that crop up due to differences in language, socio-cultural milieu, etc. This is also an occasion where the trainees become actually aware of the nature of team work necessary for the programme. It is also an opportunity provided to the health personnel to observe and emulate the team spirit and team concept necessary in public health work.

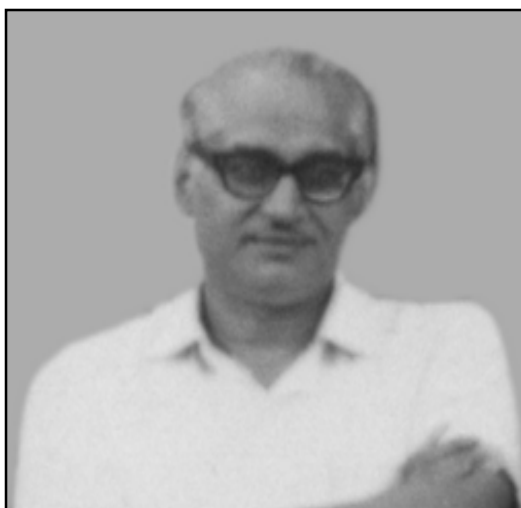
Training in supervision is introduced towards the end of the course when the trainees are expected to be conversant in the nature of their duties and capable of assessing others work in their specific field. They would, therefore, identify inadequacies in skills and techniques and would also be able to take corrective actions and demonstration of correct practices. It culminates in a final group discussion, with field reports on implementation and supervision being discussed by the trainee participants as a group. By 31 Dec 1962, 271 DTP key

personnel of various categories deputed from 18 different states of India were trained in various programme activities.

To facilitate the training in the urban environment, rapport had also been established with the GOM. The then director of medical services (DMS), Dr VR Naidu took personal interest in providing assistance. For training and urban orientation, he arranged to lend the services of the senior most doctors, SR Kidiyoor and Susai Mary. A collaborative relationship was established with LWSTC in 1959. It provided both infrastructure and training support. Under the guidance of the NTI, it began to fulfil the duties of a state TB centre.

A full-fledged training centre ought to have library facilities as well. Yet not much attention was paid to the library nor was action taken to house it suitably. In the late 1960s, a library in a corner room was deemed adequate. Being a trained librarian, Ms Indira took it upon herself to arrange the books and periodicals in a scientific way. She

also prepared reference catalogues extracted from different sources pertaining to current work in the TB field and circulated them among the NTI faculty. Later termed as information services, these periodic circulars assisted the staff immensely and reduced their burden of sifting through volumes of irrelevant literature to obtain what interested them. She also began issuing lists containing 'suggested readings'. These services were extremely useful to meet the demands of the ever increasing number of trainees and other TB workers. Realising its importance, funds were quickly released to buy books, documents and relevant periodicals and develop the infrastructure. Though TB was its speciality, other areas of interest were not ignored. Its activities were slowly extended to include a documentation and information centre. First copies of work summaries, protocols, manuals and research papers were preserved and new papers sent for publication.



*Dr. G D. Gothi
Epidemiologist*



*Dr. GVJ Baily
TB Specialist*

2.7. Anantapur: the first model DTC

A district other than Tumkur had to be chosen to establish the first model district TB centre (DTC). The biggest event of the year was the start of the model district programme in Anantapur. Anantapur town is 130 miles north of Bangalore. It is one of the poorest district in India. On the 16th August 1961, it was inaugurated in the presence of a large number of officials from the district and handful of NTI staff and trainees of the first training course⁴². To achieve this, with Dr Gothi in the lead, many planning visits had been made earlier to

establish rapport with the government officials of Andhra Pradesh. They had agreed to provide office space and to maintain it after it was commissioned. They also agreed to recruit the necessary staff and send key officers for training to NTI. As Mr Andersen reports: *...from the 17th to 24th of July, the senior staff of the NTI accompanied by six MO trainees will survey the health services in Anantapur District with a view to detailed planning and selection of the areas where the programmes will begin³⁶... The programme will comprise the following elements:*

- 1) A TB clinic, mainly serving Anantapur town;

- 2) BCG vaccination programme including referral of high prevalence groups for further case finding;
- 3) Semi-mobile X-ray case finding at a few selected primary health centres (PHCs);
- 4) Gradual development of sputum case finding in all PHCs and dispensaries;
- 5) Domiciliary treatment services based on PHCs and dispensaries assisted by non-health development agencies.

This programme aims at the integration of TB control schemes with the existing GHS to reduce the TB problem in the community as economically as possible. In the DTC, the X-ray examination facilities were provided on three days in a week and sputum examination daily. In the sub-centres, weekly X-ray case finding was done by the mobile X-ray unit, and daily sputum examination by direct microscopy. To start with, our first batch of trainee doctors, HVs, LTs and XTs carried out the work and they trained the personnel on the spot to take charge when the trainees left. The patients diagnosed tuberculous were treated with INH only as the

second drug was not available. The existing LF Dispensaries, PHU, village dispensaries or maternity sub-centres situated in the nearby villages were stimulated to undertake the treatment of diagnosed cases living in the vicinity and to collect sputum from symptomatic persons. The entire equipment including transport, mobile X-ray microscopes for all the centres, X-ray film and chemicals for sputum examination and X-ray, INH, petrol and stationery were supplied by the NTI.

Shortly after establishing the Anantapur DTC it became evident that case finding could be done at any place without difficulty but the major problem was that of keeping the patients on continuous treatment. Considerable time and effort was devoted to solve the problem of default. Only 66% of the TB patients were taking drugs regularly with a defaulter rate varying from 20% in one place to 54% in another, with the overall average at 34%. If timely steps were not taken, the situation would have gone out of control³⁵.

The first test run of the DTC gave

practical field experience to the NTI faculty. Thus, the form and content of the programme and the training procedures were pruned. In addition, it was discovered that there was an urgent need to add TB services to the GHS. Doctors and auxiliary personnel in these services were willing to take on their new functions⁴².

The Anantapur DTC became operational quickly and functioned well, because in addition to the state government's component, the NTI staff also worked. By October 1961, the NTI trainers and trainees withdrew. From then on, there was a decline in the services of this DTP. The Anantapur programme suffered from not being recognised by the Andhra state government as essentially their responsibility⁴³.

2.8. Lessons from the Anantapur experiment

In the development of the Anantapur programme NTI had contributed a major portion of its resources – material as well as intellectual/physical – because the ideas to be implemented were new

and a clear cut concept of how that objective could be achieved was not available. However, after NTI trainees had successfully implemented the programme and covered the entire district, the situation changed completely. It became necessary, thereafter, that state government to take over the programme responsibility by the year end.

NTI needed another area where its future trainees could learn actual implementation of DTP as its past trainees had done in Anantapur district. Another important aspect in selecting new district was that the districts should belong to different field conditions through the test runs to identify local variables which have profound influence on the development of systems. For this purpose, three different districts of erstwhile Mysore state were chosen I) Mangalore district: a west coast district with hilly terrain and excessive monsoon rainfall. It has well-developed infrastructure with NTI trained staff. ii) Chitradurga district: northern district with a less developed health services,



TB Control Seminar

normal terrain and rainfall. iii) Shimoga district: a model health district developed by the state authorities with adequate infrastructure and awaiting sanction of DTP and posting of NTI trained team.

As a matter of principle, it was decided that NTI and its staff shall not take any initiative in the development of DTPs in these test run districts but would provide any technical assistance and guidance if asked for. The results obtained from these districts should be of great interest in future⁴⁴.

2.9. TB control seminars

From the Anantapur experiment came the realisation that training of DTC personnel or implementing district centres alone were inadequate. To be effective, senior officers responsible for TB work in various states should also be trained. They should be made conversant with the new strategies being implemented and their active support should be obtained. No programme however scientific would succeed without their support because health is a responsibility of the state

governments. Accordingly, between 22nd May 1962 to 2nd June 1962, the NTI organised the first TB control seminar. It was attended by Assistant Directors of Health Services (TB) and Directors of TB Demonstration and Training Centres. Twenty two delegates from different states deliberated on the proposals of the NTI regarding the national TB control for India and made recommendations for a district TB control programme⁴⁰.

2.10. Papers published

During 1960-62, twenty three papers were published by the NTI in national and international journals. They are listed chronologically in Annexure IV. The first two were authored by Dr Bordia, the then Director.

As it is of historical interest, the first paper was on *Drug prophylaxis in the control of TB in India*. A brief summary is extracted: *Prophylaxis means prevention of disease and its manifestations. But this definition is not satisfactory in TB. There are two situations in which prophylaxis is applicable: (i) to prevent development*

of infection (chemoprevention) and (ii) to prevent development of disease and its complications among the infected, as revealed by a positive tuberculin test. In general, 4-7 mg per kg body weight of INH should be given for a period of six months. For practical reasons, chemoprophylaxis could be limited to high risk groups. It may not be possible to carry it out on a country-wide basis without acceptance of the people and an organisation to do it. A pilot study for applicability and acceptability of the drugs on a community basis can bring out knowledge on this subject.

Many interesting observations were made by Bordia and others in the paper, *tuberculin sensitivity in young children (0-4 year old) as an index of TB in the community: Tuberculin testing with 1TU RT23 was done on a random sample of 0-4 year old children in Bangalore city (2883) and in rural areas (2589) within 100 miles. Variation of the tuberculin sensitivity status in different areas were compared against one another and further to socio-economic conditions. The relevance of the tuberculin sensitivity (> 14 mm taken as positive) as an index of tuberculous infection*

was evaluated. The results showed that whereas the prevalence varied within the city (1.6% in cantonment, 4.0% in city), no such variation was found in the rural areas (2%). It was not possible to establish any correlation between the disease and infection as the population was not investigated for disease.

In another paper, *Limitations of single picture interpretation in mass radiography*, Dr Raj Narain observed: *Surveys with MMR remains one of the most important methods available for measuring the size and extent of TB problem in developing countries. Its value in case finding programmes is well recognised. Nevertheless MMR with a single picture of the chest has fairly wide margin of error owing to the intra and inter-individual differences in X-ray reading. A study was undertaken to assess the errors involved by repeating an X-ray picture after an interval of three to four months and judging the first picture in the light of a comparative reading of the two pictures. It was postulated that two pictures taken at an interval may afford better judgment regarding the assessment of a case than a single*

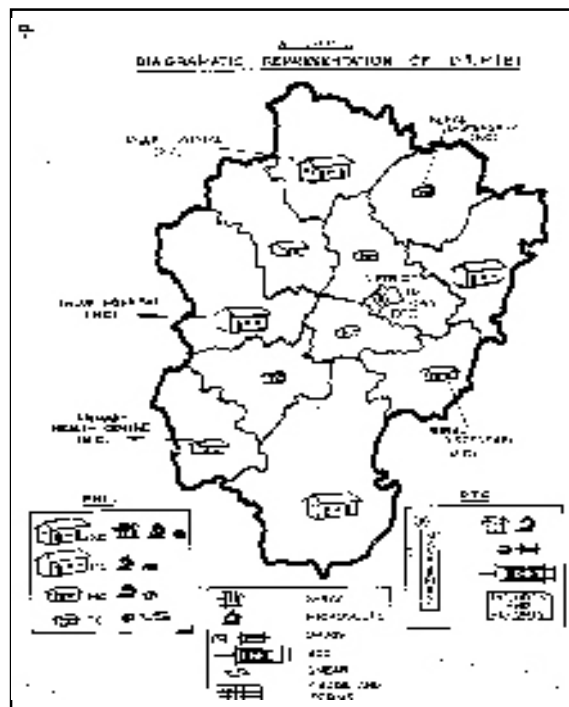
picture only. A total of 8,000 persons were registered, 5,300 of them were X-rayed and re-read by two readers. Photofluorograms were repeated after three and a half months subsequent to the first picture. At the time of repeat X-ray, a spot sample of sputum was collected from persons with abnormal shadows. Briefly the findings of the study were:

- 1) *No advantage of two pictures was observed.*
- 2) *About 20% of bacillary cases were among those with inactive or non-tubercular shadows on the basis of a single X-ray film.*
- 3) *Inter-individual agreement for X-ray active cases was in the order of 50%.*
- 4) *Intra-individual agreement for X-ray active cases was 52% and 69% for the two readers.*
- 5) *MMR with a single film, in spite of its inherent limitations is the best available method both for surveys as well as for case finding programmes due to its ability to identify cases as well as potential cases in a short time.*
- 6) *Even the agreement between two sputum samples collected*

within an interval was 42% for positive results.

While listing the detailed concept of the DTP in the paper, outline of a DTP, (Annexure IV, sl no.22), Dr Piot stated: *by TB control is meant the reduction, over a span of years, of the problem of TB. A reasonable target for control might be a 50% reduction in prevalence of excretors of tubercle bacilli over a period of 20 years..... One has to consider the medical aspects of the programme against the background of socio-economic development of the country. The programme is conceived in*

successive development of stages, each of them in harmony with other developmental activities under way in the rural areas. The important elements are thought to be: (a) the highest possible degree of integration of the TB programme in the general public health services; (b) maximum participation of the local government (panchayats) and of the community development department. This implies a changed pattern in the TB Specialists' field of action from the clinical level to essentially advisory, coordinating and supervisory functions.



2.11. A torch lit

When Dr Mahler, as others, had thought it would take five to ten years to formulate the programme, Dr Benjamin had retorted: You have a maximum of two years and then we shall start.

In these two years of intense and stimulating research, the NTI translated rhetoric into reality. With such support, as envisaged in the five year plans, forthcoming

from the centre and the states, the NTI was bound to play a vital role in establishing the DTCs and training key personnel running them. It would be a sustained effort intended to cover all districts of India, widening its coverage and gathering speed as it progressed. The form and content of this gigantic effort contained epidemiological, sociological, technical and administrative inputs, with a stress on community participation.



Group photo of Control section staff with TO trainees

2.12. Memorabilia

Dr. Kul Bhushan

former Research Officer, BCG

17.7.1998

It is unique that the NTP is the first public health programme to be integrated with GHS. It caught the imagination of health workers at the international level. The inclusion of managerial and social concepts in its formulation makes the programme a unique one.

The training programme of NTI needs a special mention. Well designed and tested details of steps and activities of functions formed the foundation of the training programme. The exposure of all categories of trainees to statistics helped them think objectively in a rational way. The inter functional exposure gave them the overall picture of the total programme. The innovative vocational training impressed a lot of observers, as was observed from the performance of field workers. In the field, one was also impressed with the outgoing extroverted personality of an average worker trained in NTI. If allowed, most of the para medical staff were achievers. Perhaps, they had acquired such qualities from group discussions, public speaking, presentation of the special aspect of their work. They had the freedom to choose the subject of their presentation. They were encouraged to consult teachers, administrators, field trainers and above all the library. All these created a laudable learning environment, which was also pointed out by casual visitors. Some of the observers even stated that NTI was conducting mini, brief or short general public health courses, rather than only the national programme.

The pity, however, is the failure of the NTI and DGHS, TB section, to carry the state health services along with them in implementation and running the NTP, to its deserved success. Supervision is the biggest weakness of the programme - the supply line failure, lack of support to the DTO by the district and state authority. In one of the evaluation reports as many as 60 recommendations, to be implemented at different levels, have been given. Suggestions for carrying out studies before implementing recommendations have been made. The programmers at different levels have not even listed the variables responsible for shortfall in achievements, much less inducted serious operations research, selected and ploughed the result into the programme. The programme was evolved by operations research but its health has not been reviewed by that methodology.

संस्करण

डा. कुलभूषण
भूतपूर्व शोध अधिकारी
१७.७.१९९८

यह निराली बात है कि राष्ट्रीय क्षय रोग नियंत्रण कार्यक्रम पहला जन स्वास्थ्य कार्यक्रम है जिसका सामान्य स्वास्थ्य सेवाओं के साथ समन्वय है। अन्तराष्ट्रीय स्तर के स्वास्थ्य कार्यकर्ताओं का ध्यान आर्कषित किया है। कार्यक्रम की उत्पत्ति के समय मैनेजीरियल व सामाजिक तथ्यों को प्राथमिकता देने से यह एक विशेष कार्यक्रम बन गया है।

राष्ट्रीय क्षय रोग संस्थान के प्रशिक्षण कार्यक्रम का विशेष विवरण देना आवश्यक है। अच्छी तरह सुसज्जित प्रयोगशालायें तथा परिक्षणों की व्याख्या और विभिन्न क्रियाएँ प्रशिक्षण कार्यक्रम की आधारशीला हैं। सभी प्रकार के प्रशिक्षणार्थियों को साँख्यकी में इस तरह प्रशिक्षण दिया जाता है कि उन्हें विभिन्न पहलुओं को वैज्ञानिक ढंग से सोचने में सहायता मिलती है।

प्रशिक्षण के दौरान अन्तर्कार्यरत् ज्ञान तथा कुशलता प्रदान की जाती है। जिससे पूरे कार्यक्रम के समझने में सहायता मिलती है। इस विस्तृत प्रशिक्षण तथा फील्ड कार्यों ने अनेक निरिक्षकों को प्रभावित किया। फील्ड में राष्ट्रीय क्षयरोग संस्थान द्वारा प्रशिक्षित कार्यकर्ताओं की कार्यशैली ने भी लोगों को प्रभावित किया। अगर उपयुक्त अवसर मिलते तो लगभग सभी पैरामेडिकल कर्मचारी कुछ न कुछ प्राप्त करने में सक्षम थे। शायद उन्हें यह विभिन्न गुण, समुह वार्तालाप, भाषण देने की क्षमता तथा विभिन्न प्रकार के विशेष पहलुओं के प्रदर्शन की प्रतिभा प्राप्त करने से मिले थे। उन्हें अपने विषय को प्रस्तुत करने की पूर्ण स्वतंत्रता थी। वे अध्यापकों, प्रशासकों, क्षेत्रीय प्रशिक्षणार्थियों से सलाह करते तथा पुस्तकालय में विचार करते थे। इस सबने एक सीखने का वातावरण उत्पन्न किया जिसने विभिन्न दर्शकों को प्रभावित किया। कुछ निरिक्षकों ने यहाँ तक कहा की राष्ट्रीय क्षयरोग संस्थान राष्ट्रीय कार्यक्रमों के अलावा विभिन्न छोटे व संक्षिप्त सामान्य जन स्वास्थ्य का प्रशिक्षण कार्यक्रम का प्रशिक्षण नहीं बल्कि चलाता है।

राष्ट्रीय क्षय रोग संस्थान तथा महानिदेशालय के, क्षयरोग अनुभाग की सबसे बड़ी असफलता है राष्ट्रीय क्षयरोग कार्यक्रम को लागु करने व चलाने में विभिन्न प्रयास के बाद भी राज्य सरकारों को अपने साथ लेकर नहीं चल सके जिससे कार्यक्रम सफलता की निर्धारित ऊँचाई नहीं प्राप्त कर सका। सुपरविजन भी इस कार्यक्रम की सबसे बड़ी कमजोरी थी, इसके अलावा टी.बी.की दवा का निरन्तर अभाव व डी.टी.ओ. को जिला व राज्य स्तर के अधिकारियों से अनुरूप सहयोग न मिल पाना। एक अवमूल्यन रिपोर्ट में इस कार्यक्रम को विभिन्न स्तरों पर लागु करने के लिए लगभग ६० सुझावों को दिया गया था। विभिन्न सुझावों को अध्ययन करने के बाद ही लागु करने के लिए टिप्पणियाँ दी गई थी। कार्यक्रम के विभिन्न स्तरों पर कार्यरत अधिकारियों को अध्ययन करना तो दूर उनको सूचीबद्ध तक नहीं किया था। जिसके कारण उपलब्धियाँ प्राप्त न हो सकी। कार्यक्रम का आपरेशन रिसर्च द्वारा प्रारम्भ तो किया गया लेकिन इसके स्वास्थ्य को इसी रिसर्च द्वारा परखा नहीं गया है।

Dr. G D Gothi

former Epidemiologist

1995

I did my MPH in USA (Columbia University 1955) but I decided that I would work for my country because money did not matter to me... I must say, my knowledge of TB broadened after joining the NTI, in 1961. I went there with a narrow mind, thinking that I knew all about TB. On 17th August 1961, seven days after I joined, I was sent to Anantapur with a team of six doctors, six LTs and six TOs. This was the first ever on the job field training for medical as well as non-medical personnel. The training lasted six months. What was there in Anantapur? No good hotels, even moderate ones. We had to eat whatever food that was available. I taught X-ray reading and developed from scratch almost everything... For e.g., case index cards were developed by me, Mr I Thorup and Mr SS Nair. I took the burden of training the first five batches and with the experiences gained, the training period was reduced from six months to four months and then to three months.

I also took part in the training activities at the LWSTC in Bangalore... The NTI has given so much. I will give you an example. The direct BCG vaccination studies first began in NTI. As a result, BCG vaccination could be given without a tuberculin test. This increased efficiency and coverages of BCG and saved a lot of money. The NTI should be in the forefront of TB research activities. But, it pains me to tell you that now NTI is in the background. It may be due to administrative constraints in the government...research institutes must be given a free hand. There should be freedom in the day to day management of work. At NTI there was so much freedom then. Even the trainees were free to discuss and share knowledge.

डा.जी.डी. गोठी भूतपूर्व ऐपिडिमोलोजिस्ट

मैंने अपना एम.पी.एच. १९५५ में कोलम्बिया विश्वविद्यालय अमेरिका से किया, और यह निर्णय लिया कि मैं अपने देश के लिए कार्य करूंगा, क्योंकि पैसा मेरे लिए देश से अधिक महत्वपूर्ण नहीं था। राष्ट्रीय क्षयरोग संस्थान में १९६१ में प्रवेश के बाद क्षयरोग के क्षेत्र में मेरा ज्ञान और ज्यादा बढ़ गया तब मेरे विचार संकुचित थे क्योंकि मैं सोचता था कि मैं क्षयरोग के बारे में सबकुछ जानता हूँ।

१७ अगस्त सन् १९६१ को साक्षात के सात दिन के बाद मुझे अनन्तपुर भेजा गया। मेरी टीम में ६ डॉक्टर, ६ प्रयोगशाला प्रविधिज्ञ तथा ६ चिकित्सा आयोजक थे। यह चिकित्सीय एवं गैर चिकित्सीय लोगों की पहली फील्ड ट्रेनिंग थी। ६ माह तक प्रशिक्षण चला। अनन्तपुर में सभी आवश्यक सुविधाओं का अभाव था, जैसे एक्सरे पढ़ना तथा अन्य कार्य करना। खाने के लिए जो भी मिल गया उसी में सन्तुष्ट थे। केस इन्डेक्स कार्ड मेरे द्वारा तथा आई.बी. थूप और श्री.एस.एस. नायर द्वारा बनाए गए। मैंने पहले पाँच बैचों की ट्रेनिंग का भार उठाया जिसके अनुभव के बाद प्रशिक्षण का कार्य पहले बैच के बाद ६ माह से ४ माह और बाद में ३ माह हो गया।

मैंने लेडी विलिंगडन राज्य क्षयरोग केन्द्र, बेंगलूर में चल रहे प्रशिक्षण कार्य में भी भाग लिया। राष्ट्रीय क्षयरोग संस्थान ने देश को बहुत कुछ दिया है। उदाहरण के लिए बी.सी.जी. वैक्सीन सीधे देने का प्रयत्न संस्थान में पहले आरम्भ किया गया जिसके परिणाम स्वरूप बी.सी.जी. वैक्सीन बिना ट्युबरकुलिन टैस्ट के सम्भव हो सका।

इससे टीकाकरण के क्षेत्र में प्रगति हुयी तथा पैसों की भी बचत हुयी। राष्ट्रीय क्षयरोग संस्थान, क्षयरोग के क्षेत्र में तथा अन्य खोज कार्य में सबसे आगे रहा। परन्तु यह कहते हुए मुझे दुख होता है कि अब राष्ट्रीय क्षयरोग संस्थान नेपथ्य में जा रहा है। इसका मूल कारण सरकार के प्रशासनिक अधिकारियों का हस्तक्षेप है। संस्थान को कार्य करने की पूरी स्वतंत्रता मिलनी चाहिए। पहले राष्ट्रीय क्षयरोग संस्थान को इतनी स्वतंत्रता थी कि प्रशिक्षणार्थी भी स्वतन्त्र रूप से विचार विमर्श कर अपना ज्ञान ताजा करते थे।

Mr. M S Krishna Murthy

former Sr Investigator (EPS)

21.1.1998

Out of all the research studies I was associated with, the base line survey at Tumkur was most interesting because it yielded so much information about a district which could be used in the NTP. I consider the longitudinal survey the most difficult. To repeat the same activities in the same area and get high coverages throughout is not easy.

The most influential scientists I interacted with were Drs Raj Narain and Nagpaul. Raj Narain was a great administrator, a tremendous organiser and extremely practical. He had a tremendous ability to obtain sensitive data. Dr Nagpaul was great in a different way. He was a strict disciplinarian, dedicated and an inimitable teacher. One day, I was with Mr Rama Rao, his PA. He showed me a typed script he had just completed and said in a voice filled with wonder: "Krishnamurthy, this is to be sent for publication, you know; Nagpaul dictated it in one go. After I typed a draft, I showed it to him. He made only two or three corrections that is all".

I had also worked for the Chingleput BCG trial. Dr Raj Narain was its Project Director. It was running with PL480 funds for some time. Suddenly, funds stopped. There was no money even to pay salaries. The trial was in the intake stage. Dr Raj Narain tried every source but the bureaucracy did not understand the implication of closure at this stage. So, Dr Raj Narain used WHO dollars meant for special purposes and kept the project going. He was hauled up in Delhi. Dr Raj Narain gave the secretary appropriate reasons for taking this arbitrary decision. The Secretary was convinced. The trial was resurrected. ICMR was asked to take it over. When Raj Narain talked, everyone listened. His eyes would literally light up.

As to significant changes in my work attitude, I would say it came from the WHO and other international staff. They showed how important work is for science and for people. They inspired us to work hard.

श्री. एम. एस. कृष्णामूर्ति

भूतपूर्व वरिष्ठ अन्वेषक

२१.१.१९९८

सभी खोज पूर्ण अध्ययनों में जिनसे मैं सम्बन्धित था उनमें तुमकूर का सर्वेक्षण बहुत ही दिलचस्प था क्योंकि इससे एक जनपद के बारे में इतनी सूचनाएँ मिली जो राष्ट्रीय क्षयरोग नियंत्रण कार्यक्रम में प्रयोग की जा सकती हैं । मैं सोचता हूँ कि लोंगीट्यूडनल अध्ययन सबसे कठिन है । उनकी तुलना के लिये उसी क्षेत्र में व्यापक कार्य करना आसान नहीं है ।

सबसे प्रभावशाली वैज्ञानिक डा. राजनारायन और डा. नागपाल थे जिनसे मेरा सामना हुआ। राजनारायन एक महान प्रशासक, अद्वितीय आयोजक तथा यथार्थवादी व्यक्ति थे । वह दूरदर्शी थे । डा. नागपाल एक अनुशासनप्रिय प्रशासक, समर्पित तथा उत्तम अध्यापक थे । एक दिन, मैं उनके व्यक्तिगत सहायक श्री. रामराव के साथ था जिसने एक टंकण की हुई लिपि दिखायी । वह आश्चर्य से बोले कृष्णामूर्ति यह प्रकाशन के लिए जानी है । डा. नागपाल ने डिक्टेसन दी थी बाद में मैंने इसे टाइप किया और दिखाया । उन्होंने मात्र २ या ३ सुधार किए और कहा शेष सब ठीक है ।

मैं बी.सी.जी. चिंगिलपट्ट ट्रायल में भी कार्य किया । यह पी.एल. ४८० अनुदान से चल रहा था । अचानक अनुदान मिलना बन्द हो गया और वेतन के लिए भी धन नहीं रहा, ट्रायल समाप्त की ओर अग्रसर था । डा. राजनारायन ने प्रत्येक स्रोत से प्रयास किया परन्तु प्रशासकों को परियोजना बन्द होने से उत्पन्न होने वाले नुकसान के बारे में समझ नहीं आया । डा. राजनारायन ने परियोजना के महत्व को समझते हुए विश्व स्वास्थ्य संगठन से प्रदत्त डालर जो विशेष कार्य के लिए थे, की सहायता से परियोजना को गतिशील रखा । इसके लिए उन्हें दिल्ली में सम्मन किया गया क्यों कि उन्होंने सरकार की आज्ञा के बिना प्रदत्त डालर का उपयोग वेतन देने में प्रयोग किया था । वे दिल्ली जाकर सचिव से मिले और सारी वस्तु स्थिती से अवगत कराया , परिणाम स्वरूप सचिव सहमत हो गए और परियोजना पुर्नजीवित हो गयी । इसे भारतीय चिकित्सा अनुसंधान परिषद कोष से चलाने को कहा गया मेरे कार्य करने के ढंग में जो बदलाव आया है वह विश्व स्वास्थ्य संगठन व अन्य अर्न्त राष्ट्रीय स्टाफ्स की साइंस और जनहित के लिये लगन से कार्य करना कितना महत्वपूर्ण है उनका संदेश था हम सबके लिये ।

जब डा. राजनारायन बोलते थे, तब सभी सुनते थे, बोलते समय उनकी आँखें ओजस्वी हो उठती थी ।

Mr. R Channabasavaiah

former Statistical Assitant

30.11.1994

Of all the persons I have met and worked for, I would say Dr Raj Narain stands out. His knowledge was immense. He would be attentive to everything, he would assess every point of work and he knew every worker personally. He always wanted the research worker to be open minded, industrious and to strive towards perfection. When a mistake was noticed he would call all the persons involved so that they would understand and learn from it. He would gently say mistakes do occur; be cautious and don't repeat it. It is wiser to take guidance than hide it. All the time he was smiling and would welcome any one any time, whatever the problem. He was so dynamic, nobody could sit by his side and be idle. The way he arranged the masses of data into tables and interpreted them was extraordinary. While with statisticians, he was a statistician yet, he was the topmost doctor among doctors. He would come with a book of statistics and give it to statisticians and ask them to explain a point. Later he would explain how he had understood it.

In the field, he was incomparable. His first priority was to the people with whom he would interact and get them to talk. There were days he worked as a secretary and even carried the petromax. He allowed total freedom to field workers and always stood by them and attended to their problems on priority. He set a very tight work schedule for himself and for the teams and often worked late into the night. Even in old age he worked hard. The last I saw him was in 1984 when he came to NTI as WHO short-time consultant. This time he was immersed in the implications of BCG scar disappearance. His life was dedicated to TB. He was living with his son in Canada and he told me of a TB control project he wanted that country to take up! Later, he died at Delhi while working at ICMR for BCG Trial

I would like to add Dr AK Chakraborty's name along with Dr Raj Narain. Dr Chakraborty was also a scientist of high calibre and great dedication. His work potential was immense. He had an additional capacity in creating scientists out of others! I feel he has created many. He had a broad outlook. I benefited immensely. Even today after retirement he is busy in the field of TB.

श्री. आर. चन्नाबसवय्या

भूतपूर्व सांख्यिकीय सहायक

३०.११.१९९४

उन सभी लोगों से जिनसे मैं मिला तथा जिनके साथ कार्य किया, डा.राजनरायन सबसे पृथक थे । उनका ज्ञान असीमित था । वह इतने जागरूक थे कि प्रत्येक कार्य की समीक्षा करते थे तथा प्रत्येक कर्मचारी को व्यक्तिगत रूप से जानते थे । वह सदैव चाहते थे कि खोजी कार्यकर्ता को खुले दिमाग वाला तथा समपूर्णता की और अग्रसर होना चाहिए । जब कोई गलती उन्हे दिखती थी तो सभी शामिल लोगों को बुलाते थे जिससे सभी लोग समझ सकें तथा शिक्षा ग्रहण कर सकें । वह नम्रतापूर्वक कहते थे, गलतियाँ तो होती रहती हैं जागरूक रहो, गलतियों को छुपाओ मत तथा उसकी पुनरावृत्ति मत करो ।

वह सदैव प्रसन्नचित्त तथा दूसरों का स्वागत करने हेतु तत्पर रहते थे । वह इतने सजग थे कि कोई भी व्यक्ति उनके पास सुस्त नहीं रह सकता था । बड़े - बड़े आँकड़ों को सूचीबद्ध कर उनका निष्कर्ष निकालना उनकी विलक्षण प्रतिभा का परिचय था । सांख्यिकीय व्यक्ति के साथ सांख्यिकीय तथा चिकित्सक के साथ उच्चकोटि के चिकित्सक जैसा व्यवहार करना उनकी अपनी पहचान थी । कभी -कभी वह सांख्यिकी की किताब लेकर आते थे और सांख्यिकीय सहायक से किसी बिन्दु को स्पष्ट करने को कहते थे और बाद में स्वयं समझाते थे कि उन्होंने इसे कैसे समझा । क्षेत्र कार्य में वह अतुलनीय थे । उनकी पहली वरीयता यह थी की स्वयं एक उदाहरण प्रस्तुत करते थे तथा स्वयं एक सचिव की भाँति कार्य करते थे । यहाँ तक कि पेट्रोमैक्स भी उठाते थे ।

क्षेत्रीय कार्यकर्ताओं को पूर्ण स्वतंत्रता प्रदान करना तथा उनकी समस्याओं को प्रथम वरीयता से सुनकर उनका समाधान करना उनका लक्ष्य था । उनकी कार्यप्रणाली अत्यन्त कठिन थी तथा रात में देर तक कार्य करते थे । सेवा निवृत्ति के बाद वह अपने बेटे के साथ कनाडा में रहे थे ओर वहाँ भी एक क्षयनिंत्रक परियोजना स्थापित करने की सोच रहे थे ।

अन्तिम बार मैंने उन्हें १९८४ में विश्व स्वास्थ्य संगठन के परामश्वित्ता के रूप में राष्ट्रीय क्षयरोग संस्थान में पधारने पर देखा था । बी.सी.जी. ट्रायल की कुछ गुत्थी सुलझाने के लिये वह भारतीय आर्युविज्ञान अनुसन्धान परिषद के केन्द्र दिल्ली में गये जहाँ पर उनका निधन हो गया । उनका सारा जीवन ही क्षयरोग के लिए समर्पित था ।

मैं डा.ए.के. चक्रवर्ती का नाम भी डा.राजनारायन के साथ जोड़ना चाहूँगा । डा.चक्रवर्ती भी अपने कार्यकाल के दौरान एक और वैज्ञानिक रहे हैं । कार्यकाल के दौरान उनकी कार्य करने की क्षमता असीमित थी । उन्होंने कई वैज्ञानिक बनाए क्योंकि दूसरे व्यक्ति में वैज्ञानिक का भाव खोज लेना उनकी एक विशेषता थी । उनके व्यापक दृष्टिकोण से मुझे बहुत लाभ मिला । आज वह सेवा निवृत्त होने के बाद भी क्षय रोग के क्षेत्र में कार्यरत हैं ।

Mr. B G Munisamy*

Former Driver

22.6.1998

I joined NTI in November 1961. I was given charge of Bedford van MYE 257 and sent to Anantapur camp. Sometime in December 1961, the Director, Dr Bordia came along with Dr O'Rourke and Dr Piot, in the staff car MYE 16. Its driver was Mr Chandran. Seeing me the Director called me:

"Munisamy, why are you here?"

"I am driving Bedford van sir and taking trainees for field work."

"You give charge to Chandran and takeover the Chevrolet immediately and come with us."

I went back with them and from then on, I drove the staff car. I had to pickup all the WHO officers and Director in the morning and drop them back to their homes in the evening after work. In the office, I was asked to assist in the repair of vehicles. I was a good mechanic. Perhaps this was the reason why I was brought to the headquarters from the field. The NTI workshop was under Mr Socrates, the transport supervisor. We had a lot of repair work then because there were more than forty imported vehicles. These were being used constantly for field work. In fieldwork, there were always some emergency because of vehicle breakdown. The moment our section got information, Mr Socrates would ask us to attend to it. We mechanics would pickup the required spare parts and material and leave.

But accidents happen. A few months later, I was driving Bedford van MYE 5569 to Magadi camp when suddenly the right front tyre burst and the vehicle overturned. Somehow, with help, I turned the vehicle upright and replaced the tyre. There were scratches on the side but fortunately nothing happened to me and the vehicle was in running condition. I brought back the vehicle and informed Mr Socrates about it. The next morning I was called by the Director. I went to him shivering thinking that I would get fired. But, he was not angry. He asked me, "Munisamy, you are a careful driver. How did this accident happen? It is a new vehicle. Tell me honestly what happened." I narrated what had happened. He listened calmly and was not angry with me at all. He got up and said "show me". We went to the workshop and I explained what had happened. He inspected the vehicle and got it repaired the same day. Not a word was said to me. When he left for Delhi in 1962 as Adviser, I wept. He was our first Director.

Our NTI became a very good institute and became world famous. Where did this fame come from? Because we all worked for it. Even the WHO officers praised us. I want to tell you that I was also a proud member of that group of workers.

** Passed away in October 1999*

श्री. बी.जी.मुनिस्वामी *

भूतपूर्व चालक

२२.२.१९९८

मैंने राष्ट्रीय क्षयरोग संस्थान में नवम्बर १९६१ में प्रवेश किया । मुझे बेडफोर्ड वैन एम.वाई.ई. २५७ का चार्ज देकर अनन्तपुर कैम्प में भेजा गया । दिसम्बर १९६१ में निदेशक डा.बोर्डिया, डा. ओ' राउरूक और डा. पीयो के साथ स्टाफ कार एम.वाई.ई. १६ में आए जिसका चालक चन्द्रन था । मुझे देखकर निदेशक ने कहा मिस्टर मुनीस्वामी तुम यहाँ क्यों हो ? मैंने उत्तर दिया मैं बेडफोर्ड वाहन से प्रशिक्षणार्थियों को फी ल्ड कार्य के लिए लाया हूँ । उन्होंने कहा तुम चन्द्रन को गाड़ी दे दो और मेरे साथ आओ । मैं तब से स्टाफ कार चलाने लगा । विश्व स्वास्थ्य संगठन के अधिकारियों और निदेशक को घर से लाना तथा कार्य समाप्त होने पर उन्हें वापस घर पहुँचाना मेरा कार्य था । अच्छा यात्रिकी होने के कारण मुझे वाहनों की मरम्मत का कार्य भी दिया गया, और बाद में मुझे क्षेत्र से मुख्यालय पर रखा गया ।

संस्थान की वाहन कार्यशाला श्री. सोक्रेटिस के नियंत्रण में थी, जो हमारे यातायात निरीक्षक थे । उस समय मुझे ४० इम्पोर्टेड वाहनों की मरम्मत का कार्य भी करना पड़ता था । हर जगह सहयोग की भावना थी । क्षेत्र में वाहनों के खराब होने से आपात स्थिति उत्पन्न होने की सूचना मिलते ही हम कल पुर्जे लेकर मरम्मत हेतु क्षेत्र में चल देते थे ।

दुर्घटनाएँ भी होती थी । मुझे एक घटना याद है कुछ माह बाद मैं मागड़ी कैम्प हेतु बेडफोर्ड वाहन यम.वाई.ई. ५५६९ ले जा रहा था कि अचानक अगला दाहिना टायर फट गया और वाहन पलट गया । किसी तरह वाहन को सीधा करके टायर बदला । मेरे शरीर में कुछ खरोचों के अतिरिक्त सब ठीक था तथा वाहन भी चालू स्थिति में था । मैंने श्री. सोक्रेटिस को इसके बारे में बताया । अगले दिन मुझे निदेशक ने बुलाया । मैं डर के कारण काँप रहा था और सोच रहा था कि आज नौकरी से निकाला जाऊँगा । लेकिन वह नाराज नहीं थे । उन्होंने पूछा मुनिस्वामी तुम एक सावधान चालक हो, यह दुर्घटना कैसे हुयी ? यह एक नया वाहन है । मुझे ईमानदारी से बताओ कि क्या हुआ ? मैंने उन्हें सब कुछ बताया । वे कार्यशाला गए और उन्होंने उसी दिन वाहन ठीक करा दिया तथा मुझे एक शब्द भी नहीं कहा । सन् १९६२ में जब वह संस्थान छोड़कर सलाहकार बनकर दिल्ली गए तो मैं बहुत रोया था । वह हमारे पहले निदेशक थे ।

धीरे-धीरे हमारा राष्ट्रीय क्षयरोग संस्थान बहुत अच्छा संस्थान बन गया और संसार में प्रसिद्ध हो गया । यह प्रसिद्धि कहाँ से आयी ? इसका कारण हम लोगों का समर्पण भाव से किया गया कार्य है । विश्व स्वास्थ्य संगठन के अधिकारियों ने भी इसकी प्रशंसा की । मैं यह बताना चाहूँगा कि मैं भी इन कार्यकर्ताओं के समूह का एक गर्वान्वित व्यक्ति था ।

* 1999 में निधन

*Group photo of VII course of Statistical section staff with trainees
June - August 1964*



- Sitting L-R** : M.M. Chakraverty (Bihar), S.R. Daingrey (M.P.), M.L. Agrawal (Bihar), M.M. Prasad (Bihar)
- Sitting Chair L-R** : Miss K.R. Prameela, K. Gundanna, K.T. Ganapaty, G.Dwarkanath, Dr. D. R. Nagpaul (Director), Mr. S.S. Nair. sr. Statistical officer, Mrs. Jayalakshmi, Miss Rajalakshmi, Miss I. Indira, Narayanmurthy (Warden)
- Standing Ist Row L-R** : R. Pandey (Bihar), B.L. Sharma (Rajasthan), P. Durgaiyah (A.P.), R.K. Mittal (U.P.), V.U. Upadhyay (Maharashtra) P.J. Asthana (U.P.), S.L. Kaul (Kashmir) R.C. Das (Orissa), J.Y. Kazi (Maharashtra), R.M. Balot (M.P.) B.N. Saraf (Jammu)
- Standing 2nd Row L-R** : Subbiah, M. Peter (Bearer)