

NATIONAL TUBERCULOSIS INSTITUTE BANGALORE



Government of India
NATIONAL TUBERCULOSIS INSTITUTE
(Directorate General of Health Services)
'Avalon', No.8, Bellary Road, Bangalore-560 003
INDIA

ANNUAL REPORT 2009 - 10

NATIONAL TUBERCULOSIS INSTITUTE
WHO Collaborating Center
For
Tuberculosis Research & Training

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LIST OF ABBREVIATIONS

AIIMS	All India Institute of Medical Sciences
AMRU	Animal Model Research Unit
AOR	Adjusted Odd's Ratio
ART	Anti-Retroviral Therapy
ARTI	Annual Risk of Tuberculous Infection
BCG	Bacillus Calmette Guerin
BBMP	Bruhat Bangalore Mahanagara Palika
CMO	Chief Medical Officer
CPT	Co-trimaxazole Preventive Therapy
CPWD	Central Public Works Department
CTD	Central Tuberculosis Division
DFID	Department For International Development
Dte.GHS	Directorate General of Health Services
DGNM	Diploma in General Nursing & Midwifery
DMC	Designated Microscopy Centre
DOT	Directly Observed Treatment
DOTS	Directly Observed Treatment Short Course
DRS	Drug Resistance Surveillance
DST	Drug Susceptibility Testing
DTC	District Tuberculosis Center
DTLA	District Tuberculosis & Leprosy Assistant
DTO	District Tuberculosis Officer
EQA	External Quality Assurance
HIV	Human Immune deficiency Virus
HPLC	High Profile Liquid Chromatography
IAEC	Institutional Animals Ethics Committee
ICTC	Integrated Counseling and Testing Centre
IEC	Information Education Communication
IRL	Intermediate Reference Laboratory
I.I.Sc.	Indian Institute of Science
IUAT&LD	International Union Against Tuberculosis & Lung Diseases
LAN	Local Area Network
MDR	Multi-Drug Resistance
MDG	Millennium Development goal
MIFA	Managing Information For Action
MO-TC	Medical Officer - TB Control

<i>M.tuberculosis</i>	<i>Mycobacterium tuberculosis</i>
NACP	National AIDS Control Programme
NICD	National Institute of Communicable Disease
NRL	National Reference Laboratory
NTI	National Tuberculosis Institute
NTP	National Tuberculosis Programme
NFSG	Non-Functional Selection Grade
OSE	On-Site Evaluation
PGIMER	Post Graduate Institute of Medical Education & Research
1 TU PPD RT	1 Tuberculin Unit Purified Protein Derivative Refined Tuberculin
PPM	Public Private Mix
PPS	Population Proportion to Size
RBRC	Random Blinded Re-Checking
RNTCP	Revised National Tuberculosis Control Programme
RTI	Right To Information Act
SAARC	South Asian Association for Regional Co-operation
SACS	State AIDS Control Society
SEARO	South East Asia Regional Office
STDC	State Tuberculosis Demonstration and Training Center
STLS	Senior Tuberculosis Laboratory Supervisor
STO	State Tuberculosis Officer
STS	Senior Tuberculosis Supervisor
TAI	Tuberculosis Association of India
TB	Tuberculosis
TCC	Technical Co-ordination Committee
TRC	Tuberculosis Research Center
TUs	Tuberculosis Units
WHO	World Health Organization

FOREWORD

I am glad to place before you the Annual Report for the year 2009-10. The Institute has been functioning as the technical arm of the Directorate General of Health Services and designated as WHO collaboration center. We have taken pioneering role in training medical and para-medical personnel in the control of tuberculosis. Training is a continuous process aimed at providing human resources at the district/state level for maintenance of TB control programme. This has assumed greater importance in the consolidation phase and to face the newer challenges of the TB control Programme. Increasing need for trained manpower is being fulfilled by the persistent efforts of the staff of the institute by conducting frequent training programmes as indicated in the report. The training curriculum incorporates the fundamental principles of TB control as enunciated in the RNTCP and reinforcing aspects of Drug Resistance Tuberculosis and TB-HIV collaboration activities.

Institute as a WHO collaboration center, has also undertaken training activities in MIFA and TB Surveillance & Programme Monitoring and Evaluation for participants from SEARO region. Apart from this, the institute has imparted training in sputum culture and drug susceptibility testing techniques for the participants from the SAARC region.

Operational research is one of the prime functions of the institute. The research studies undertaken by the institute are in consonance with the priority areas identified by the Central Steering Committee. Institute in collaboration with UNION conducted a workshop on protocol development for research studies in TB control. Study on prevalence of TB in adults in the adjoining rural area of Bangalore is in progress. Repeat Zonal level tuberculin surveys for estimating Annual Risk of Tuberculous Infection are in progress. NTI being a nodal center is facilitating the study in different zones. It is also worth mentioning that the district level intervention study on routine referral of TB patients to Integrated Counseling and Testing Centers has been completed.

It would be of interest to the readers to go through the summary of the research in progress and papers published which are presented in brief in this report.

In the long run, maintenance of the quality of smear microscopy network and consolidation of high cure rates achieved is essential for the success of RNTCP. In this respect, the institute is striving hard in establishing External Quality Assessment network for sputum smear microscopy in different states under its jurisdiction and establishing accreditation of culture & drug susceptibility testing laboratories for tuberculosis is under process. Drug Resistance Surveillance, as an indicator of the programme, performance has also been taken up as one of the priorities in the second phase of the RNTCP. Summary in brief of above research projects and their status has been presented in this report.

The details of participation in technical activities along with the Central TB Division is also reflected in brief in this issue. Involvement in Zonal and National Task Force Meetings of Medical Colleges, Standing Operational Research Committee Meetings and participation in Laboratory Committee meetings form important components in this report.

Participation of faculty and Technical staff in various meetings, training programmes, seminars, conferences, workshops and continuing medical education have been highlighted in this report.

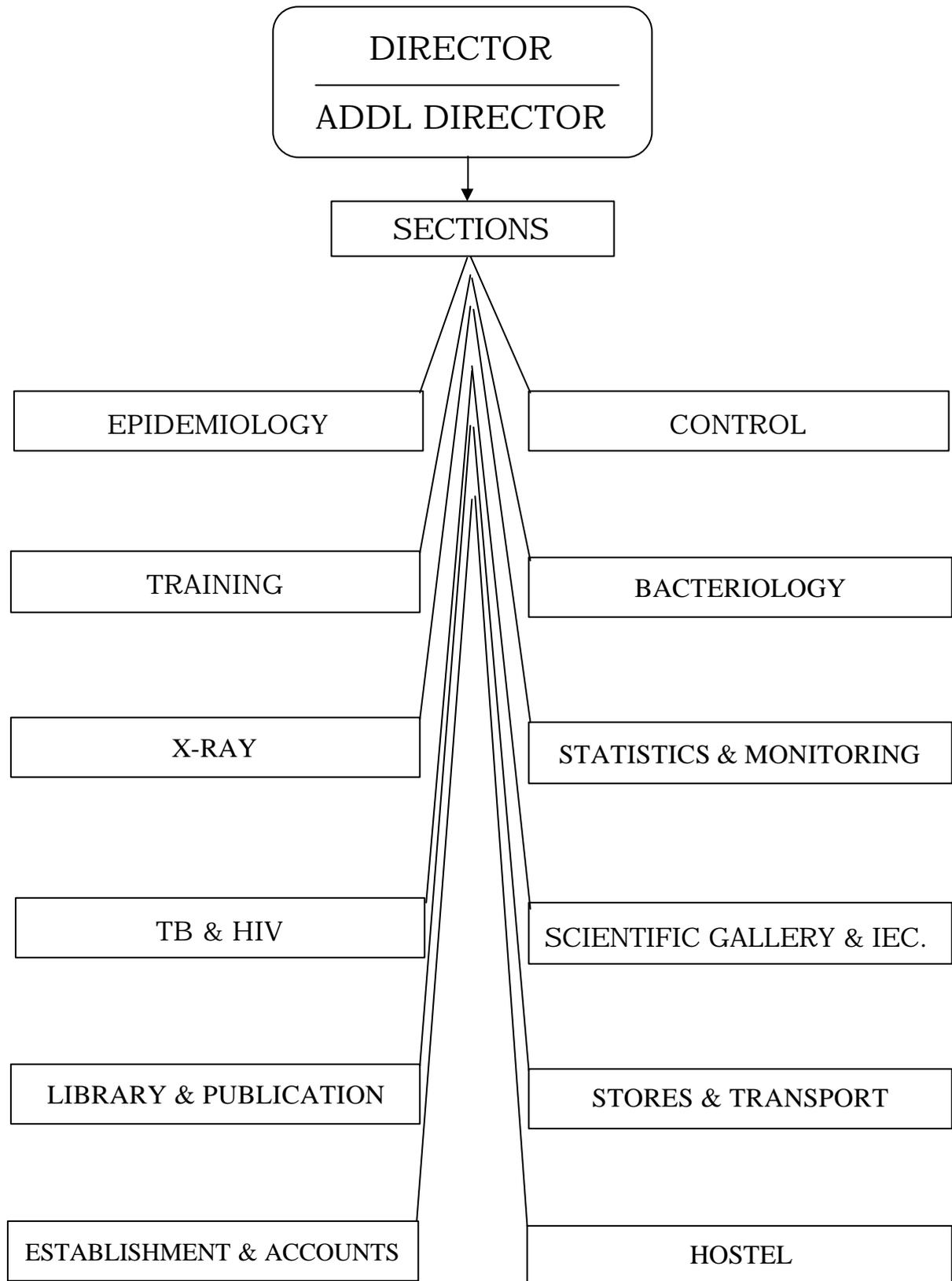
On this occasion, I like to express my thanks and appreciation to the faculty and staff of the institute for extending their co-operation and untiring efforts in achieving the objectives set for the institute. I look forward for the same zeal and enthusiasm evinced by all the officials of the institute in times to come.

The institute also expresses its gratitude to the Central TB Division and WHO-India for their continuous support, guidance and encouragement in all our endeavors.

Dated: 03-12-2010
Place: Bangalore

Dr. Prahlad Kumar
Director

1. ORGANIZATIONAL SET UP



2. STAFF POSITION

Staff position in terms of posts sanctioned and in working strength is given in the tables below.

GROUP-WISE STAFF POSITION

Sl. No.	Category	Sanctioned	In position	Vacant
1.	Group 'A'	15	14	1
2.	Group 'B'			
	<i>Gazetted</i>	03	1	2
	<i>Non-gazetted</i>	34	25	9
3.	Group 'C'	105	96	9
Total		157	136	21

3. COMMITTEES

Institutional Ethics Committee

This committee reviews the research protocols from the point of view of ethical considerations and gives clearance on ethical issues before implementation of the project.

Institutional Animal Ethics Committee

This committee reviews and approves the research projects which involve animal experimentation.

Technical Coordination Committee

This committee meets periodically to ensure in-depth inter-disciplinary discussions on all technical matters, exchange of information, plan and co-ordinate research activities. Whenever a new research activity is proposed to be undertaken, it is discussed threadbare in the committee meetings. It also reviews progress of fieldwork & analysis of the ongoing research projects. The draft findings of the research projects are discussed before it is either presented in technical conferences or published in the journals. All the faculty members of the Institute are members of this committee.

Committee on Administration and Staff Welfare:

All important service matters pertaining to the officers and staff are referred to this committee for its examination from the point of view of prevailing rules and formulation of recommendations for action.

Purchase Committee

This committee is responsible for the scrutiny of the specification of the items sought by different sections, examination of pre-qualification criteria, opening of quotations/tenders and scrutiny of comparative statements with reference to the set specifications and relevant rules of purchase. Finally the recommendations are submitted to the Director for further action.

Local Purchase Committee

This committee is responsible for conducting market surveys for rates and specifications of the items to be procured.

Rajbhasha Implementation Committee

This committee has been formulated to promote the use of Rajbhasha and encourage the officials to learn and use Hindi language in day to day

official correspondences. This committee coordinates the celebration of Hindi week and Hindi Day.

Editorial Committee

This committee coordinates the publication activities of the Institute, especially the biannual publication viz., “**NTI Bulletin**”.

Quarters Allotment Committee

The committee is responsible for organizing the preparation and scrutiny of waiting list for allotment of quarters and finalization of recommendations as per the prevailing allotment rules.

Committee for prevention of Sexual Harassment at Work Places

This committee deals with the complaints of sexual harassment faced primarily by the women Government employees at work place.

Committee for condemnation of obsolete articles

This committee has been constituted to process the items recommended for condemnation by different sections. The committee after going through the history sheet consisting date of procurement, duration of its use, the quantum of repairs undertaken, cost incurred for repair and its present working condition decides on the feasibility of its condemnation or otherwise.

Nomination of central public Information officers

Two central public Information officers - One for administrative matters and other for technical matters have been nominated to process the request as and when the information is sought in accordance with the guidelines of RTI act.

4. TRAINING AND WORKSHOPS

I. TRAINING

Training in TB Control programme is a vital function of the Institute and keeps meeting ever-increasing demand of trained manpower in implementation and maintenance of TB Control Programme. This is an ongoing process due to periodic replacement of key personnel either because of retirements/transfers. The training is undertaken based on the requirement of the states and as per the directives from Central TB Division, New Delhi. Besides regular RNTCP Modular Training, the Institute also shoulders the responsibility of training the Medical & Paramedical personnel from various states in the areas of activities viz., TB-HIV, EQA in smear microscopy & DST, DRS studies and training of tuberculin survey teams in testing and reading. Officials from both government and Non-governmental Organization are participating in the above mentioned Training Programme.

The various training activities carried out by the Institute during the period under report are furnished below in detail.

RNTCP Modular training

This course of 12 days duration comprises of imparting skills and knowledge to Medical officers to effectively implement RNTCP in their area. The training methodology is essentially module based, besides group discussions, interactions and work exercises. This is augmented with presentations on important aspects of RNTCP and field visits to Tuberculosis Units. The evaluation of training is carried by pre & post test. The following trainings were conducted during the year under report:

Sl. No.	Category of personnel	Duration	No. of Participants	Organization / State / District represented
1	State and District level programme Managers and faculty from Medical colleges	27-04-09 to 09-05-09	22	Andhra Pradesh, Goa, Karnataka, Kerala, Meghalaya, Orissa and West Bengal
2		08-06-09 to 20-06-09	18	Assam, Chandigarh, Jharkhand, Himachal Pradesh, Karnataka, Maharashtra, Madhya Pradesh and Rajasthan
3		06-07-09 to 18-07-09	19	Haryana, Karnataka, Maharashtra & Uttar Pradesh

Sl. No.	Category of personnel	Duration	No. of Participants	Organization / State / District represented
4		03-08-09 to 15-08-09	19	Karnataka, Kerala, Maharashtra, Madhya Pradesh, Jammu & Kashmir and Orissa
5.		09-11-09 to 21-11-09	30	Andhra Pradesh, Karnataka, Himachal Pradesh, Gujarat, Madhya Pradesh, Maharashtra & Uttar Pradesh, West Bengal
6.		18-01-10 to 30-01-10	14	Assam, Chattisgarh, Delhi, Goa, Karnataka, Maharashtra, Orissa & Uttar Pradesh
7.	State and District level programme Managers and faculty from Medical colleges	22-03-10 to 03-04-10	18	Chattisgarh, Gujarat, Himachal Pradesh, Jharkhand, Maharashtra, Sikkim, & Uttarakhand

Training in TB-HIV

This training is aimed at strengthening the TB-HIV collaborative activities. The duration of the training is 2 days. The methodology of the training is through power point presentations, discussions on the national frame work on joint TB/HIV collaborative activities and field visit to ICTC and ART Centres.

Sl. No.	Category of personnel	Duration	No. of Participants	Organization / State / District represented
1	SACS TB/HIV focal points, RNTCP TB/HIV focal points, RNTCP-WHO State HQ Consultants	04-02-10 to 05-02-10	43	Andhra Pradesh, Assam, Chandigarh, Delhi, Gujarat, Karnataka, Kerala, West Bengal, Maharashtra, Manipur, Mizoram, Orissa, Rajasthan, Tamil Nadu & Uttar Pradesh

DATA Management Training – Managing Information For Action(MIFA):

The objective of this training programme is to establish systems for routine analysis and interpretation of the quarterly RNTCP programme data for effective management of the programme. The training methodology adopted is through power-point presentations, problem solving exercises and group discussions.

Sl. No.	Category of personnel	Duration	No. of Participants	Organization / State / District represented
1	Training of Master Trainers on MIFA under RNTCP	27-07-09 to 31-07-09	29	Assam, Bihar, Chhattisgarh, New Delhi, Jammu & Kashmir, Jharkhand & Karnataka

Training in Quality Assurance (QA) aspects of laboratory

The laboratory of the Institute being a NRL under EQA is responsible for training STDC personnel of various states in EQA procedures of smear microscopy and Culture & Drug Susceptibility Testing

i. Training in smear microscopy

Sl. No.	Category of personnel	Duration	No. of Participants	Organization / State / District represented
1	Microbiologists and Lab. Technicians of STDCs/State laboratories	01-06-09 to 05-06-09	22	Arunachal Pradesh, Bihar, Chattisgarh, Gujarat, Jammu & Kashmir, Karnataka, Kerala, Maharashtra, Madhya Pradesh, Uttar Pradesh & West Bengal.
2	Microbiologists and Lab. Technicians of STDCs/State laboratories	26-10-09 to 30-10-09	18	Andhra Pradesh, Arunachal Pradesh, Delhi, Goa, Punjab, Uttar Pradesh

Training in Culture & DST

Sl. No.	Category of personnel	Duration	No. of Participants	Organization / State / District represented
1	Microbiologists and Lab. Technicians of State TB Laboratories	11-05-09 to 21-05-09	7	Microbiologists and LTs from State TB Lab of Maharashtra
2		18-05-09 to 21-05-09	03	

Collaborative training activities with WHO, The UNION and SAARC TB & HIV/AIDS Centre

As a WHO collaborative center, the Institute took active role in organizing training programme in collaboration with WHO / The UNION and SAARC TB & HIV AIDS Centre, Nepal. Both in-house and external faculty members facilitated the training. The details of the activities carried out during the period under report are furnished below:

i. WHO Fellowship Training

Sl. No.	Type of Training	Duration	No. of Participants	Organization / Countries
1.	Study tour to learn on Implementation of DOTS in India	22-07-09 to 02-08-09	03	DPR Korea

ii. Training programme for participants from SAARC Region

Sl. No.	Type of Training	Duration	No. of Participants	Countries
1	Training in TB & HIV co-infection for District TB & Leprosy Assistants	01-07-09 to 10-07-09	09	Nepal
2	Culture and DST Training for participants from SAARC Countries	20-08-09 to 28-08-09	14	Bangladesh, Nepal, Srilanka, India representatives from WHO SEARO and STAC, Nepal Director, Deputy Director and microbiologist. (7 Participants + 7 Facilitators and observers)

Participation of NTI faculty as resource persons in Training activities

Sl. No.	Type of Training	Duration	No. of Participants	Resource Person
1.	SAARC Regional training for operational research, Institute of Health Management Research, Jaipur	04-08-09 to 06-08-09	20	Dr. Prahlad Kumar
2.	Training in Tuberculin Testing for Nurses of LOTUS Lab Ltd. Bangalore	28-08-09 to 31-08-09	4	Mr. Lakshminarayan Mr. Magesh
3.	Orientation on TB for Medical College faculty & students held at KIMS Bangalore	19-02-10	100	Dr. Preetish S. Vaidyanathan

Training of NTI officials:

Sl. No.	Type of Training	Duration	Venue	Participants
1	Training programme on Tobacco Smoking Cessation Intervention among TB cases	19-02-10 to 20-02-10	NIMHANS Bangalore	Dr. V.K. Chadha Dr. N. Somashekar Mr. B.A. Shivashankara Mr. Jameel Ahmed Mr. Govindanarayana Swamy Mr. S. Nagaraj
2	Training of trainers of nurses on DOTS & DOTS Plus	11-05-09 14-05-09	LRS Institute, New Delhi	Dr. N. Somashekar
3.	Managerial skills for DOTS Plus programme managers	05-10-09 to 08-10-09	Mumbai	Dr. Somashekar

II. WORKSHOPS HELD AT NTI**1.Regional Workshop on Tuberculosis Surveillance and Programme Monitoring and Evaluation, during 20-24 July 2009**

The objectives were to strengthen TB surveillance and share current approaches and outcomes from surveillance, monitoring and evaluation activities. Program managers from countries of South East Asia Region of WHO participated in the workshop facilitated by resources persons from WHO and NTI.

Workshop began with an update on TB burden and performance of Nation TB programs. Data generated during various epidemiological studies since 1990 was shared. A frame work for measuring progress towards MDGs was worked out by the member countries of the SEARO region, on the lines of recommendations by WHO global task force. Due emphasis was given to enhance the reliability as well as completeness of notification data and to carry out specific operational research that would provide inputs towards improving the estimates of TB burden and measuring progress.

2. Research protocol development workshop, 21-25 September 2009

Work shop was jointly organized and facilitated by the union & NTI to share methodology and facilitate operational research in TB. All aspects including identification of research question, protocol development, managing research and ethical issues were deliberated in detail. Workshop culminated with in preparation of several research protocols and precise action plans.

3. Workshop for Revision of Modules “Managing RNTCP in your area”, 14-17 September 2009

Participants included officials from Central TB Division, NTI, TRC, LRS institute of TB & Respiratory diseases, State TB cells and WHO. Drafts of the modules 1-9 revised by NTI faculty keeping in mind the technical and programme policy changes were discussed threadbare for final incorporation. Additional sections including management of paediatric TB, MDR TB, TB-HIV, TB in diabetics and tobacco cessation intervention were drafted during the workshop.

5. RESEARCH

Research in TB control and related areas is one of the primary functions of the Institute. Technical sections in the Institute pursue research in their respective areas. The Institute has put in place the mechanism of Technical Coordination Committee (TCC) for thorough technical discussion and exchange of information before finalization of the research protocol. The projects are screened by Institutional Ethics Committee for addressing ethical issues. Progress of the project is monitored by the TCC at periodic intervals. Findings of research studies are also discussed in the TCC before they are either presented in technical conferences or published in journals.

A. The status of the ongoing research projects undertaken during the year are furnished below:

1. Prevalence of Pulmonary Tuberculosis among adults in Nelamangala taluk, Bangalore rural district.

Study was initiated in October 2007 with the objective of estimating point prevalence of pulmonary TB among individuals aged 15 years and above. The methodology comprises of registration of the study population by house to house census, screening for presence of pulmonary symptoms and by Mass Miniature Radiography (MMR) of the chest, followed by sputum examination by smear and culture.

The details of the field work performed during the year are as under:

Number of Eligible persons registered	22126
Number screened for symptoms	20106
Number X-rayed (MMR)*	11354
Total number Eligible for sputum collection	1895
Number of sputum specimens collected	
Spot specimen	1818
Overnight specimen	1692
Number of bacteriologically positive TB cases detected	
Smear positive	12
Culture positive cases	32
Smear & Culture positive	09
Number referred for investigations and further treatment	53

**MMR screening discontinued earlier due to breakdown was resumed from June 2009.*

The interim analysis for the data collected till 31st August 2009 was undertaken. Prevalence estimated based on symptoms screening only was 154 per 100,000 population. Applying correction for the number of additional cases that would be detected by X-ray, derived from population covered by both X-ray and symptoms, the prevalence was estimated at 200 per 100 000 population.

The section, along with the committee nominated by CTD, took a lead in formulating common templates to be adopted for analysis of the data of Disease prevalence surveys at other six sites in the country

2.Repeat zonal level tuberculin surveys for estimating Annual Risk of Tuberculous Infection (ARTI).

The objective of the surveys was to estimate ARTI among children aged 1-9 years in each of the four zones and to compare them with the estimates obtained during previous zonal level surveys during 2000-03.

Zone-wise progress of the field work is presented below:

Sl. No	Zone	No of Clusters covered	Name of Districts completed	District presently working
1	North	254	Gurudaspur, Kangra, Jaunpur, Delhi, Hardoi	Raebareilly
2	South	202	Tiruvallur, Kanjipuram, Kanyakumari, Mallapuram, Dakshina Kannada, Udupi	Belgaum
3	East	205	Burdman, Jalpaiguri, Cuttack, Purbisinghbhum	Samastipur
4	West	164	Nagpur, Thane	Ratnagiri

Periodic field Visits were made by designated officials to monitor field work as per work instructions and corrective actions taken wherever necessary.

Necessary support was provided on a continuous basis for data entry which has been completed for 4 districts of North Zone, 5 districts in South Zone, 3 districts in East Zone and 2 districts in West Zone.

3. District level intervention study on routine referral of TB patients to Integrated Counseling and Testing Centers (RP-226)

The HIV epidemic has increased the global tuberculosis (TB) burden and has focused attention on the necessity to strengthen the linkages between the TB and HIV/AIDS control programmes. In the light of this, reliable HIV surveillance systems among TB patients and large scale access to HIV testing and counseling services are considered corner stones for effective TB-HIV collaboration. WHO suggests that all regions with generalized and concentrated HIV epidemic, should aim to ensure that HIV counseling and testing are actively promoted and offered to all TB patients preferably, in conjunction with the provision of CPT and ART treatment. The study was undertaken to pilot-test routine referral of TB patients for HIV counseling and testing under field conditions. National Tuberculosis Institute was assigned with the responsibility of conducting this study in Mysore district of Karnataka. This multi-centric study was taken up against the background mentioned above. Data analysis of the study for the districts of Mysore & Tiruchirapalli was completed.

Follow up of HIV positive TB patients

All the HIV positive TB patients (286) detected in the above study in Mysore district (RP-226) were followed up to assess their treatment outcome and their linkage to care and support services through patient interviews and collection of relevant data from the records. Interview of all the patients was completed in February 2010 and the data entry and analysis are under progress.

4. Virulence assay of parental, devR mutant and complemented strains of M.tuberculosis in NTI-bred albino guinea pigs in collaboration with the Dept. of Biotechnology AIIMS, Delhi.

Fifty (50) fresh animals were inoculated with IAEC approved coded suspensions. Post mortem examinations were conducted on 61 animals for assessing gross lesion & extent of TB diseases. A portion of spleen, liver and lung tissues were aseptically dissected out for culture and microbial enumeration besides preserving remaining portion in 10% formalin for further investigations at TRC Chennai.

5. The pathogenetic role of serine threonine kinases of M.tuberculosis in albino guinea pigs- A collaborative study with the Tuberculosis Research Centre (TRC) Chennai.

Necropsy examinations were conducted on 12 guinea pigs. Besides assessing the extent of disease for virulence assay; spleen, liver & lung tissues, from these animals were aseptically dissected out for further processing at TRC, Chennai. Two different strains of *M.tuberculosis* received from TRC were subjected to virulence assay in 4 animals.

B. Research Papers published

1. Feasibility of Provider-Initiated HIV Testing and Counselling of Tuberculosis Patients Under the TB Control Programme in Two Districts of South India,

Sophia Vijay, Soumya Swaminathan, Preetish Vaidyanathan, Aleyamma Thomas, L. S. Chauhan, Prahlad Kumar, Sonali Chiddarwar, Beena Thomas, Puneet K. Dewan, PLoS ONE | www.plosone.org 1 November 2009 | Volume 4 | Issue 11 | e7899

Background: Provider-initiated HIV testing and counselling (PITC) is internationally recommended for tuberculosis (TB) patients, but the feasibility, effectiveness, and impact of this policy on the TB programme in India are unknown. We evaluated PITC of TB patients across two districts in India considered to have generalized HIV epidemics, Tiruchirappalli (population 2.5 million) and Mysore (population 2.8 million).

Methodology/Principal Findings: Starting June 2007, healthcare providers in both districts were instructed to ascertain HIV status for all TB patients. Subsequently, they were to refer those with unknown HIV status to the nearest Integrated Counselling and Testing Centre (ICTC)—often in the same facility. All TB patients registered from June 2007 to March 2008 were followed up prospectively. Field investigators assessed PITC practices and abstracted data from routine TB programme records and HIV counselling registers to determine the proportion of TB patients appropriately evaluated for HIV infection. Patient records were traced to determine the efficiency of referral links to HIV care and antiretroviral treatment (ART). Between July 2007 and March 2008, 5299 TB patients were registered in both study districts. Of the 4701 (89%) with unknown HIV status at the time of TB treatment initiation, 3368 (72%) were referred to an ICTC, and 3111 (66%) were newly tested for HIV. PITC implementation resulted in the ascertainment of HIV status for 3709/5299 (70%) of TB patients, and detected 200 cases with previously undiagnosed HIV infection. Overall, 468 (8.8%) of all registered TB patients were HIV-infected; 177 (37%) were documented to have also received any ART.

Conclusions: With implementation of PITC in India, HIV status was successfully ascertained for 70% of TB patients. Previously undiagnosed HIV-infection was detected in 6.4% of those TB patients newly tested, enabling referral for life-saving anti-retroviral treatment. ART uptake, however, was poor, suggesting that PITC implementation should include measures to strengthen and support ART referral, evaluation, and initiation.

2.Perceptions of Tuberculosis Patients on Provider-Initiated HIV Testing and Counseling - A Study from South India

Beena E. Thoma, Puneet K. Dewan, Sophia Vijay, Aleyamma Thomas, L S Chauhan, Chandrasekaran Vedachalam, Preetish Vaidyanathan, Soumya Swaminathan, PLoS ONE | www.plosone.org 1 December 2009 | Volume 4 | Issue 12 | e8389

Background: The acceptability and feasibility of provider-initiated HIV testing and counseling (PITC) in many settings across Asia with concentrated HIV epidemics is not known. A pilot study of the PITC policy undertaken within the public health care systems in two districts in India offered the opportunity to understand patient's perspectives on the process of referral for HIV testing and linking to HIV treatment and care.

Methods: We conducted a cross-sectional study of randomly selected TB patients registered by the TB control program between July and November 2007 in two districts in south India. Trained interviewers met patients shortly after TB diagnosis and administered a structured questionnaire. Patients were assessed regarding their experience with HIV status assessment, referral for counseling and testing, and for HIV-infected patients the counseling itself and subsequent referral for HIV treatment and care.

Results: Of the 568 interviewed TB patients, 455 (80%) reported being referred for HIV testing after they presented to the health facility for investigations or treatment for TB. Over half the respondents reported having to travel long distances and incurred financial difficulties in reaching the Integrated Counselling and Testing Centre (ICTC) and two-thirds had to make more than two visits. Only 48% reported having been counseled before the test. Of the 110 HIV infected patients interviewed, including 43 with previously-known HIV positive status, 89 (81%) had reported as being referred for anti-retroviral treatment (ART); 82 patients reported at ART centers and 44 had been initiated on ART.

Conclusions: This study provides the first evidence from India that routine, provider-initiated voluntary HIV testing of TB patients is acceptable, feasible and can be achieved with very high efficiency under programme conditions. While PITC is useful in identifying newly diagnosed HIV-infected patients so that they can be successfully linked to ART, the convenience and proximity of testing centres, quality of HIV counseling, and efficiency of ART services need attention.

3. Risk Factors Associated with Default among New Smear Positive TB Patients Treated Under DOTS in India

Sophia Vijay, Prahlad Kumar, L S Chauhan, V H Balasangameshwara, K P Unnikrishnan, PLoS ONE | www.plosone.org April 2010 | Volume 5 | Issue 4 | e10043

Background: Poor treatment adherence leading to risk of drug resistance, treatment failure, relapse, death and persistent infectiousness remain an impediment to the tuberculosis control programmes. The objective of the study was to identify predictors of default among new smear positive TB patients registered for treatment to suggest possible interventions to set right the problems to sustain and enhance the programme performance.

Methodology & Principal Findings: Twenty districts selected from six states were assigned to six strata, considering the geographic, socio-cultural and demographic setup of the area. New smear positive patients registered for treatment in two consecutive quarters during III quarter 2004 to III quarter 2005 formed the retrospective study cohort. Case control analysis was done including defaulted patients as “cases” and equal number of age and sex matched patients completing treatment as “controls”. The presence and degree of association between default and determinant factors was computed through univariate and multivariate logistic regression analysis. Data collection was through patient interviews using pre-tested semi-structured questionnaire and review of treatment related records. Information on a wide range of socio demographic and patient related factors was obtained. Among the 687 defaulted and equal numbers of patients in completed group, 389 and 540 patients respectively were satisfactorily interviewed. In the logistic regression analysis, factors independently associated with default were alcoholism [AOR-1.72 (1.23–2.44)], illiteracy [Adjusted Odd’s Ratio (AOR)-1.40 (1.03–1.92)], having other commitments during treatment [AOR-3.22 (1.1–9.09)], inadequate knowledge of TB [AOR-1.88(1.35–2.63)], poor patient provider interaction [AOR-1.72(1.23–2.44)], lack of support from health staff [AOR-1.93(1.41–2.64)], having instances of missed doses [AOR-2.56(1.82–3.57)], side effects to anti-TB drugs [AOR-2.55 (1.87–3.47)] and dissatisfaction with services provided [AOR-1.73 (1.14–2.6)].

Conclusion: Majority of risk factors for default were treatment and provider oriented and rectifiable with appropriate interventions, which would help in sustaining the good programme performance.

4 Relationship of Nutritional status with tuberculin sensitivity among schoolchildren in Bangalore city. Indian J Pediatrics 2009; 76:605-607.

VK Chadha, R Jitendra, P Kumar, J Gupta and Umadevi.

A cross sectional study to estimate the prevalence of under-nutrition among school children and to find out the relationship between nutritional status and tuberculin sensitivity was carried out among 3335 children between 5–8 years of age attending 60 schools in Bangalore city selected by stratified random sampling. The nutritional anthropometric indices were calculated using reference median as recommended by World Health Organization, classified according to standard deviation units termed as Z-scores. The nutritional status of the children was assessed by Weight for age, Height for age and Bio-mass-index (BMI). Depending upon the method for classifying nutritional status, the prevalence of under-nutrition (including mild and severe under-nutrition) varied between 14.9–29.8%. The prevalence of severe under-nutrition varied from 2.9–6.7%. The frequency distributions of tuberculin reaction sizes were found to be similar among children classified by nutritional status. The differences in proportions of significant reactions ($\geq 10\text{mm}$) and mean tuberculin reaction sizes between children classified by nutritional status were not found to be statistically significant. Tuberculin sensitivity was not influenced by nutritional status among apparently healthy school children.

5. Epidemiological situation of tuberculosis and its Trends in India. Manual on Tuberculosis, HIV and Lung Diseases, A practical Approach; Jaypee Brothers Medical Publishers (P) Ltd 2009; 52:62.

V.K Chadha

The article describes in detail the various epidemiological indicators of Tuberculosis and their merits and demerits. The survey methods and statistical techniques for estimating prevalence of pulmonary TB and the risk of tuberculous infection are presented for easy comprehension and application in the field. Verbal autopsy technique for estimating mortality, the role of Onion Model and capture and recapture technique for estimating incidence have been lucidly described. The article also summarizes the information collected from all the community based epidemiological studies carried out in India so far. The progress towards Millennium Development Goals in TB control in India is abstracted from these studies and from the estimations through mathematical modeling.

6. Annual Risk of Tuberculous Infection as an epidemiological indicator in the present scenario. Manual on Tuberculosis, HIV and Lung Diseases, A practical Approach; Jaypee Brothers Medical Publishers (P) Ltd 2009; 92:102.

V.K Chadha

The article highlights the importance of ARTI as an epidemiological indicator and describes in detail, the standard techniques and operating procedures. The various techniques of analysis of survey data for computing ARTI and estimating the trends is also included. The interpretation of ARTI estimates and limitations of tuberculin surveys and those of Styblo's equation in the scenario are discussed in detail.

7. ARTI and its trends in India. Round table conference series number 22 December 2008 challenges of MDR/XDR. Tuberculosis in India, Ranbaxy science foundation, New Delhi, page 119-132.

V.K Chadha.

The article after summarizing the methods of estimating ARTI draws meaningful interpretation on trends in ARTI as observed from tuberculin surveys conducted in India since 1957. Four to six percent per annum decrease in ARTI rates is observed in 3 areas after the implementation of RNTCP. A negligible decline had earlier been observed before the implementation of RNTCP.

6. NATIONAL REFERENCE LABORATORY

The laboratory of NTI is designated as one of the National Reference Laboratories (NRL) for the purpose of quality assurance of the sputum smear microscopy and Culture and Drug Sensitivity Testing (C&DST) laboratory network under the RNTCP. As an NRL, NTI supervises and monitors the quality of sputum smear microscopy network in the following nine states viz., Bihar, Jammu and Kashmir, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Rajasthan and West Bengal.

The function of NRL comprises- training the laboratory personnel and accreditation of state level IRLs, Medical Colleges and other private laboratories for the Culture and Drug Sensitivity Testing to detect Multi-Drug Resistant Tuberculosis (MDR-TB). It also supports the projects such as Drug Resistance Surveillance (DRS) and DOTS Plus at the state level. Besides, it is also responsible for the Human Resource Development and capacity building of the IRLs of the states for the management of the Multi-Drug Resistant Tuberculosis. The laboratory also participates in the Annual Proficiency Testing for Culture and DST for both First and Second line Drugs with Prince Leopold Institute of Tropical Medicine, its Supra-national Reference Laboratory (SNRL) located at Antwerp, Belgium.

Besides, Laboratory support is provided for research projects such as the Disease Prevalence Survey (DPS) undertaken by NTI. It is also involved in building a spectral library on the chromatographic profiles of the Mycolic acids of pathogenic Non-Tuberculous Mycobacteria (NTM) using HPLC. Now the facilities for newer diagnostic techniques viz., Line Probe Assay (LPA) and Liquid Culture by Mycobacterium Growth Indicator Tube (MGIT) are also coming up with support provided by World Health Organisation (WHO) and Foundation for Innovative and Newer Diagnostics (FIND).

A. Quality Assurance System (QAS):

The Quality Assurance (QA) system in RNTCP consists of Internal Quality Control (IQC), assessment of performance using External Quality Assessment (EQA) and subsequently the Quality Improvement (QI) of the laboratory services. It involves classification of errors in sputum smear microscopy and assessment of laboratories based on Lot Quality Assurance Sampling (LQAS).

B. External Quality assessment (EQA):

The External Quality assessment is done through an On-Site Evaluation (OSE). The components of EQA-OSE include assessment of infrastructure, panel testing of the Microbiologist and LTs apart from analyzing the RBRC data of the districts. The team of NTI assisted the states in effective implementation of EQA.

The details of EQA-OSE visits undertaken between March 2009 – 2010 are as follows:

Sl. No	State visited	Dates	Team Members
1	Karnataka	23-06-09 to 27-06-09	Mr.S.Anand, Ms.Reena.K Mr. Ranganatham A.
2	Madhya Pradesh (STDC Bhopal and IRL Indore)	23-09-09 to 26-09-09	Mr.S.Anand, Mr. Ranganatham A.
3	West Bengal	29-12-09 to 01-01-10	Mr.S.Anand, Ms.Reena.K
4	Jharkhand	17-03-10 to 20-03-10	Mr.S.Anand, Ms.Reena.K, Mrs. Mamatha H G

The EQA-OSE Team assisted the states laboratories (IRL/STDCs) in the following :

- (a) Imparting On-site training to the staff of STDC/IRL in conducting the EQA lab supervision at selected DTCs and orienting the STLS in EQA work.
- (b) Supporting the STOs in representing the problems to the Director/Commissioner public health/Principal secretary (health) of respective states requiring their intervention.

The OSE visit facilitated the STDC and STC in reviewing the implementation of EQA, especially the problems of non-availability of LTs/DTOs, staff structure in STDC, training, reagents quality, disposal of infectious materials and RBRC activities.

NATIONAL LABORATORY COMMITTEE MEETINGS:

Laboratory Committee Meetings are held once a quarter and is attended by the NRL Director, Microbiologists and other partner agencies. Director and the faculty from the Bacteriology section participated in three Laboratory Committee Meetings.

PRE ASSESSMENT VISITS:

As a pre-requisite for accreditation of the IRL for performing culture and DST for detection of MDR-TB, the central team, undertakes pre assessment visits for assessing the suitability of the laboratories for accreditation. Pre-assessment visits were undertaken for the following laboratories:

Sl. No	State	Dates	Team
1	Bhopal Medical College, Hospital and Research Center (BMHRC), Bhopal	12-03-10	Mr. S Anand
2	Choitram Hospital, Indore .	13-03-10	Mr. S Anand

KIMS, Hubli, Karnataka, was visited on 10th September'2009 by Mr. S Anand to assess the preparedness of the laboratory for Culture and DST.

ACCREDITATION OF LABORATORIES

An accredited mycobacteriology laboratory is the pre-requisite for diagnosis and follow up of MDR-TB patients. Towards this purpose, an IRL is being established in each state for diagnosis and follow up of MDR-TB patients. Provision has also been made to include those interested to participate like laboratories of Medical Colleges and Private Sector. The Microbiologist and Laboratory technicians are trained in Culture and DST at the NRL. Panel cultures are exchanged between the NRL and IRL for proficiency testing and retesting. The satisfactory performance is determined in terms of concordance of more the 90% for Isoniazid (H) & Rifampicin [R] and more than 80% for Streptomycin (S) & Ethambutol (E). The laboratory shall carry out investigation for unsatisfactory performance in proficiency testing and inform NRL for necessary corrective action taken.

A pre-accreditation visit is then undertaken to assess the technical performance of the laboratory before formal accreditation. The accreditation shall be initially for a period of two years. The accredited laboratory shall regularly and satisfactorily participate in the proficiency testing programme being conducted by NRL. Scope of the accreditation, at present is limited to primary culture, identification of Mycobacterium tuberculosis and standardized drug sensitivity testing for the first line anti-TB drugs on LJ media using the proportion method. The minimum stipulated participation is once prior to gaining accreditation and twice within the first years of accreditation and subsequently at least once in every two years.

An on-site evaluation is undertaken within one year of grant of accreditation in the first cycle of accreditation and a re-assessment before the end of two years for which the laboratory applies six months before the expiry of accreditation. Thereafter, re-assessment shall be conducted every two years.

STATE LABORATORIES ACCREDITED:

Four Intermediate reference laboratories were accredited after passing the Proficiency testing conducted by the NRL. The accreditation was done on the following dates:

1. IRL Ajmer, Rajasthan : 23-03-2009
2. IRL Cuttack, Orissa : 10-08-2009
3. IRL Kolkata, West Bengal : 11-08-2009
4. IRL Ranchi, Jharkhand : 20-03-2010

Specimens processed at NTI during the period April 2009-March 2010

Total no. of patients registered	2003
Total no. of specimens registered	3776
Total no. of specimen put for primary culture	3859
Total no. of sensitivity tests done by Proportion method	710
No. of specimens subjected for identification tests	724
Out patients registered	29
Out patients specimens registered	31
Sputum	3776
Gastric Lavage	00
Pus	00
Biopsy	00
Urine	00
Culture (from various hospitals)	53
Other – CSF	00
Belgium cultures for QC	30

7. LIBRARY & INFORMATION SERVICES AND PUBLICATIONS

Library & Information Services

The Institute has a specialized Category II health scientific library as per the guidelines of the library Review Committee report, Government of India New Delhi. The categorization is based on Resources, Services and Dissemination of Information & Automation activities. Its resources and services are focused on TB and allied disciplines. The collections include core periodicals on TB and Respiratory diseases and its back volumes, published books on TB and multi-disciplinary aspects, reports, proceedings, souvenirs, WHO unpublished documents, selected papers and non-print media viz., slides, cassettes, transparencies, CD-ROMs, etc.

Library & Information Service section holds the responsibility of building up the appropriate collection, its progressive development, and organization of information services to provide increased access to its resources. Its major role is Selective Dissemination of Information to all stake holders: viz., Policy makers, Administrators, National Data on Tuberculosis hosted on to NTI website, periodical up-dating, creation of Digital Library, Digitization of monitoring reports on TB for archival value stands as a testimony for its efficiency. The information resource on Indian Data on TB available on the electronic media has drawn the attention of various Research workers/Scientists Globally.

The library provides the information needs of the faculty, staff of the Institute besides Medical and para-medical trainees and delegates / visitors from medical fraternity.

Library also coordinates the activities of Editorial committee and Publication Section. It plays active role in publication programme of the Institute. Library has procured 30 books on different subjects. During the year the Institute procured a copy printer.

Publications

Publication section coordinates the publication activities of the Institute. The major responsibilities of this section are to oversee the regularity of the publication of NTI bulletin and the production of other specialized publications. The faculty and the staff of the Institute contribute the articles for publication.

A) Documents published:

1. NTI Annual Report for the year 2008-09
2. NTI Bulletin **Vol. 43/1&2, 2007** and **Vol. 43/3&4, 2007**

Besides, the printing section assisted in printing various research forms and forms required for administrative section in addition to Reprographic services to the laboratory, Animal Model Research Unit, Training & library.

B) Updating of NTI website

The NTI website was updated with the latest information available.

8. OTHER TECHNICAL ACTIVITIES

The Institute, apart from its routine training and research activities, also carries out other technical activities viz., involvement of Medical Colleges in TB Control activities. The Institute also has an Animal Model Research Unit which is responsible for maintaining homogenous stock of Guinea Pigs required for experimental purposes. The details of technical activities carried out by the Institute are as under:

(A) Involvement in task force meetings of Medical Colleges

The faculty of NTI actively participated in the task force meetings of Medical Colleges at State, Zonal & National levels and involvement of NGOs for the successful implementation of RNTCP. This was aimed at enhancing their extent and depth of involvement in the TB Control Programme. The details of the workshop in which the faculty of NTI participated are furnished in chapter 10 of the report.

(B) Status of laboratory animals

Homogeneous stock of 350 NTI-bred albino guinea pigs was raised in healthy condition. Appropriate preventative measures were taken to check outbreak of diseases among breeding stock. Sixty two freshly raised animals were utilized for the ongoing research projects. Outdoor Shelter for Retired Breeders was maintained in good condition. Quarterly reports on monitoring of Institutional Animal Ethics Committee (IAEC) approved animal experiments were compiled for timely submission to Dte.GHS.

(C) Scientific Gallery

Institute has developed a scientific gallery as part of the IEC activity which has rich source of information for all those engaged in TB control activities. The photographic display session leaves an indelible impression in the minds of the visitors on different aspects of Tuberculosis and its control, achievements of the Institute, the evolution of the programme, its monitoring aspects.

The IEC materials comprise of display boards, photographs of luminaries in the field of TB, milestones in the development of TB Control Programme, salient features and facilities available under the TB Control Programme. Besides, projection and information kiosk facilities have been installed for the benefit of trainees and visitors to the Institute on Education Tour.

The target group for the scientific gallery are the visitors comprising medical, the para-medical personnel working in teaching & and non-teaching institutions and under graduates & post graduate students from other life science subjects.

This facility is available free of cost during the working days of the week (Monday to Friday). The gallery could be visited by the interested visitors / institution on a mutually agreed date.

(D) Sensitization on TB Control Programme for undergraduate/ Post graduates / medical / paramedical students:

The Institute also provides one-day sensitization on TB Control Programme to medical, paramedicals and graduates / postgraduates pursuing life sciences and Nursing. This consists of briefing on TB, its magnitude, salient features of RNTCP, management of TB cases and wherever relevant, the bacteriological aspects of TB viz., Primary isolation, identification & sensitivity tests, role of animal experimentation in TB control programme followed by a journey through the Scientific Gallery. The session at the scientific gallery ends with an oath taking ceremony on commitment of their role in the control of TB. The scientific gallery had a total 2,109 visitors in 60 batches from 38 educational institutions during the year under report. The details of the visits are furnished below:

Sl. No.	Date	No. of participants	Organization
1	01-04-09	39	Hosmat college of nursing, Bengaluru
2	03-04-09	39	Acharya school of nursing, Bengaluru
3	08-04-09	14	SJEC College of management studies, Bengaluru
4	20-04-09	45	T. John college of nursing, Bengaluru
5	21-04-09	43	PES College of science, Bengaluru
6	28-04-09	48	Athena college of nursing, Bengaluru
7	04-05-09	33	Bhagawan mahaveer jain college of nursing, Bengaluru
8	06-05-09	10	AECS Maruthi college of nursing, Bengaluru
9	08-05-09	08	Radiance College of Management and Science, Bengaluru
10	12-05-09	37	Dayananda sagar Inst. of Bio science, Bengaluru
11	26-05-09	40	Indian academy group of institutions, Bengaluru
12	29-05-09	30	Dr. Shyamala Reddy college of nursing, Bengaluru
13	03-06-09	59	Narayana Hrudayalaya college of nursing, Bengaluru

14	04-06-09	31	Nisarga college of nursing, Bengaluru
15	05-06-09	50	BGS Global college of nursing, Bengaluru
16	08-06-09	30	Oxford college of science, Bengaluru
17	10-06-09	61	Fr.Muller's college of nursing, Mangalore
18	12-06-09	29	St.John's college of nursing, Bengaluru
19	16-06-09	50	Padmashree Inst. Of nursing, Bengaluru
20	18-06-09	19	St.John's college of nursing, Bengaluru
21	23-06-09	48	Krupanidhi college of nursing, Bengaluru
22	02-07-09	32	AECS Maruthi collge of nursing, Bengaluru
23	03-07-09	40	Medical training centre, Air force, Bengaluru
24	07-07-09	40	Infant Jesus college of nursing, Bengaluru
25	09-07-09	34	AECS Maruthi collge of nursing, Bengaluru
26	14-07-09	26	Padmashree college of nursing, Bengaluru
27	08-09-09	26	Gautham college of para-medical course, Bengaluru
28	23-09-09	24	Dr.Shyamala Reddy college of nursing, Bengaluru
29	12-10-09	02	St.John's college of nursing, Bengaluru
30	20-10-09	41	Hosmat college of nursing, Bengaluru
31	04-11-09	10	PSG College of nursing, Bengaluru
32	10-11-09	18	St.John's college of nursing, Bengaluru
33	27-11-09	27	T.John college of nursing, Bengaluru
34	02-12-09	02	Canara college of nursing, Kundapura, Udupi Dist
35	04-12-09	44	Medical training centre, Air force, Bengaluru
36	07-12-09	73	Lakshmi memorial Inst. of nursing, Mangalore
37	15-12-09	3	Kempegowda college of nursing, Bengaluru

38	05-01-10	5	Goutham college of nursing, Bengaluru
39	06-01-10	43	
40	07-01-10	40	St.Martha's college of nursing, Bengaluru
41	11-01-10	44	Harsha college of nursing, Bengaluru
42	12-01-10	45	
43	19-01-10	17	City college of nursing
44	19-01-10	06	Smt. VHD College of Home science, Bengaluru
45	21-01-10	35	Dr.Shyamala Reddy college of nursing, Bengaluru
46	22-01-10	27	
47	27-01-10	56	T.John college of nursing, Bengaluru
48	28-01-10	40	Nrayana hrudayalaya college of nursing, Bengaluru
49	02-02-10	47	St. Mary's Inst. Of nursing, Bengaluru
50	04-02-10	48	Acharya Inst. Of Health sciences, Bengaluru
51	15-02-10	34	Narayana hrudayalaya college of nursing, Bengaluru
52	16-02-10	41	KMCT College of nursing, Bengaluru
53	02-03-10	18	NMKRV College for women, Bengaluru
54	15-03-10	40	PES College of science, Bengaluru
55	18-03-10	59	Oxford college of nursing, Bengaluru
56	19-03-10	49	
57	22-03-10	35	KVS College of nursing, Bengaluru
58	23-03-10	40	Alleppey Medical college, Alleppey, Kerala
59	25-03-10	39	Fr.Muller's college of nursing, Mangalore
60	26-03-10	38	Adventist college of nursing, Bengaluru

(E) Consultancy Services

Dr. V.K. Chadha, Senior Epidemiologist assisted, SEARO, WHO in compilation of Annual Report - "Tuberculosis Control in South East Asia Region 2010".

Mr. Lakshminarayana, Investigator, provided technical assistance to Bhutan TB as Temporary Advisor for tuberculin surveys from 22 June-11 July 2009.

A draft of the document titled "Measuring progress in TB Control towards MDGs in South-East Asia Region- Methodological issues and challenges" was prepared by Dr. V.K. Chadha, Senior Epidemiologist, on behalf of WHO.

Draft report on Tuberculosis surveillance and monitoring was compiled by Dr. V.K. Chadha, Senior Epidemiologist, during WHO-Regional workshop held at NTI from 20 to 24 July 09.

(F) Academic sessions

The Institute has a strong technical arm to support the research activities of the Institute. Periodic technical session involving the faculty and technical staff of the Institute were held for updating their knowledge in the field of tuberculosis. The faculty and technical staff made presentations on various aspects of TB Control and with special reference to the areas of the research activities carried out by different technical sections. The details of presentations made are furnished below:

Sl. No.	Topic Presented	Presented by
1	Laboratory Standard Operating Procedures in the Disease Prevalence Survey	Dr. Alpana Misra, Bacteriologist
2	Presentation of case studies on TB	Dr. Subramanyam, President, Family Physicians Association, Bangalore
3	Scientific Report Writing	Dr. V.K. Chadha, Senior Epidemiologist

(G) Review of research protocols / papers

The faculty of the Institute, in addition to their technical activities, provided expert opinion / comments by reviewing various research protocols / papers referred to the Institute from TB Association of India, Dy. Director General (TB), Central TB Division and other research institutions for its suitability of publishing in various journals / periodicals. During the year, eleven scientific papers and 18 research proposals were reviewed by the faculty members of the institute and comments submitted.

(F) Revision of RNTCP Training Modules

Following certain policy and procedural changes in strategies in TB Control under RNTCP, the existing modules 1-4 & 5-9 were revised. The policy changes with respect to the definition of a pulmonary TB suspect and number of sputum samples to be collected for diagnosis were incorporated. Additional information on newer diagnostic tools and managing TB in smokers and diabetics was added. The sections pediatric TB, MDR TB, and TB HIV cases have been elaborated. Other revisions comprised of change in titles and provision of sub-titles, sequencing of the contents, merging of modules, reduction in the number of work exercises, incorporation of learning objectives for each chapter, methodologies etc. The drafts of the revised modules were discussed during the workshop at NTI. Subsequently, the comments received from the Central TB Division and other experts were incorporated.

(H) Repair and servicing of MMR Units

The X-ray Section of the Institute, since its inception is engaged in repair and replacement of parts of MMR Units installed in Districts under the TB Control programme. During the year three RFCs and six magazines were repaired, serviced and sent back to the respective districts.

9. STATISTICAL SERVICES FOR RESEARCH ACTIVITIES

Statistical Services

The statistical section of the Institute plays a vital role and forms a supportive unit of the research activities. This wing caters to the statistical needs of all the research activities in terms of planning studies or surveys, protocol development, designing study schedules/forms, collection and validation of data, collation, compilation, analysis of data generating tables and results and interpretation of the results of various research studies.

The section has well qualified, trained, experienced and committed subordinate level manpower to maintain the standards of the statistical support for the research activities supervised by officers belonging to Indian Statistical Service (ISS) cadre.

Statistical analysis is being carried out using statistical packages viz., epi-info 3.5.1, SPSS - 15, etc., This wing also shoulders the responsibility of documenting and archiving the various research protocols approved and studies conducted in the Institute till date.

Besides, this wing has also been entrusted with the responsibility of training the key personnel in computer literacy and application of software viz., epi-info related to TB Control Programme.

10. PARTICIPATION IN CONFERENCES, WORKSHOPS, CONTINUING MEDICAL EDUCATION, TRAINING PROGRAMMES, MEETINGS ETC.

The faculty and Technical Staff of NTI participated as Facilitators, Resource person/delegate in Conference /workshops/continuing medical education, Training programmes conducted in both at NTI and outside. The details are furnished below.

Conferences:

Participation and papers presented

Sl. No.	Particulars	Date	Participants	Paper presented
1	64th NATCON 2009 held at Kolkatta	26-12-09 to 29-12-09	Mr. O. Srinivasulu, Sister Tutor Mr. K.R. Hemanth Kumar, Health Visitor Mr. B.A. Shivashankara, Health Visitor Mr. S. Anand, Consultant Micribiologist Ms. Reena K, Junior Bacteriologist	Reasons for defaults among smear positive TB patients treated under RNTCP Subsequent treatment among new smear positive defaulted patients treated under RNTCP Side effects of anti-TB drugs in new smear positive TB patients registered for DOTS under the Revised National Tuberculosis Control Programme External Quality Assesment on Sputum Smear Microscopy - An NTI experience. C Srinivasa Rao award was bestowed for the this paper for the category Best paper by Scientist under 35 years during NATCON 2008 Nitrate Reductase assay-an effective and rapid method of DST

**Workshops
At NTI**

Sl. No.	Particulars	Date	Resource person
1	National Workshop on Capacity building and experience sharing by IRL Microbiologists organized by Government of India and PATH	06-11-09 to 07-11-09	Consultant Microbiologists/ Bacteriologists from all NRLs and Facilitators & representatives from PATH & WHO-SEARO, ASM-USA.
2	Workshop on Revision of Standard Operating Procedure	30-11-09 to 04-12-09	Consultant Microbiologists/ Bacteriologists of all NRLs, representatives from CTD and WHO-SEARO

Outside NTI

Sl. No.	Particulars	Date	Resource person
1	Capacity building workshop on Air borne infection control held at LRS Institute, New Delhi	20-10-09 to 24-10-09	Mr. S Anand.
2	3 rd National Airborne Infection Control Committee workshop on infection control at New Delhi	24-12-09	Mr S Anand, Consultant Microbiologist attended at New Delhi
3	ZTF workshop of North zone, Srinagar and chaired the scientific session and made presentation on RNTCP	07-10-09 to 09-10-09	Dr. P. Kumar, Director
4	TB Impact assessment, New Delhi	26-3-10 to 27-03-10	Dr. P. Kumar, Director Dr V K Chadha

Meetings

At NTI

Sl. No.	Meetings/CME	Date
1	Institution Ethics Committee meeting was held to discuss ethical issues related to proposed research studies.	16-06-09
2	Institutional Animal Ethics Committee meeting was held to discuss the ethical issues for studies involving Animal Experimentation.	25-05-09

Outside NTI

Sl. No.	Meetings	Date	Resource person
1	Follow-up meeting of USAID TREAT TB at Union South East Asia Office, New Delhi.	22-04-09	Dr. P. Kumar, Director
2	6 th National DOTS Plus Meeting held at LRS Institute, New Delhi	10-07-09 to 14-07-09	Mr. S Anand, Consultant Microbiologist at LRS Institute, New Delhi
3	Consultation Meeting for interaction of lab committee members with the Global Laboratory Initiative / Green Light Committee mission held at CTD, New Delhi	12-08-09	Dr. P. Kumar, Director, Mr. S. Anand, Consultant Microbiologist and Reena K, Junior Bacteriologist
4	Zonal Task Force meeting of west zone held at Udaipur and made a presentation on "RNTCP updates and challenges"	07-08-09 to 08-08-09	Dr. P. Kumar
5.	Lesson Dissemination on "treatment of one is prevention for all" (TOPA)	24-08-09	Dr. N Somashekar

6	Zonal Task Force meeting of North-east zone held at Agartala, Tripura and made a presentation on "RNTCP updates and challenges"	10-09-09 to 11-09-09	Dr. P. Kumar
7	"Regional Meeting of National TB programme managers, WHO/SEARO" held at New Delhi.	2-11-09 to 5-11-09	Dr. V.K. Chadha Dr. P. Kumar, Director
8	Participated in the "Meeting of WHO Collaborating Centres in India" held at New Delhi and made a presentation on various activities being carried out at NTI, as WHO collaborating centre.	12-11-09 to 13-11-09	Dr. P. Kumar, Director
9	National Task Force workshop held at AIIMS New Delhi	30-10-09 to 31-10-09	Dr. P. Kumar & Dr. Preetish S Vaidyanathan

11. VISITORS

During the year the Institute had the privilege of having the following dignitaries as visitors.

Sl. No.	Name of visitor	Date	Details of visit
1.	Dr V.K. Arora, Former Professor and Dean, Indian Institute of Health Management Research, Jaipur,	09-04-09	Discussion on managing RNTCP at district level.
2.	Dr. P.G. Gopi, Senior Consultant, WHO, Chennai,	29-04-09	Review progress of the Repeat Zonal ARTI survey wherein Dr Chadha and other officers involved in the survey participated in the meeting.
3.	Ms Ruth Vivek, Community Health Cell, Bangalore,	30-04-09	Discussion on the training programme being organized by CMC at NTI during August 2009.
4.	Mrs. Radha Swaminathan WHO-SEARO	14-05-09	Discussion on NTI WHO collaboration
5.	Dr Vishnuvardhan Kamineni, Technical Consultant, IUATLD,	15-05-09	Discussion on the collaborative activities to be undertaken during the next financial year between NTI and IUATLD.
6.	Dr Ranjani Ramachandran, MO-Medical Laboratories, WHO-SEARO,	16-05-09	Discussion NTI-WHO collaboration in development of accreditation of laboratory network in India.
8.	Dr Suresh Shastri, Deputy Director, KSAPS, Bangalore,	19-05-09	Discussion on the modalities for TB-HIV project to be undertaken jointly by SAARC TB & HIV/AIDS Centre, Kathmandu, Nepal and NTI.
9.	State TB Officer and Director, STDC, Karnataka	05-06-09	Development of IRL in Karnataka.
10.	Dr M.M. Huq, Fellowship Officer (ETS Unit) WHO/SEARO, New Delhi	10-06-09	Discussion on fellowship arrangement between NTI and WHO/SEARO.

11.	Mr. Vijay Kumar, Director (Admn.) DteGHS, New Delhi	16-06-09	Discussion on various administrative issues pertaining to NTI.
12.	Dr Vishnuvardhan Kamineni, Technical Consultant, IUATLD,	18-06-09	Discussion on Joint activities between NTI and IUATLD.
13.	Dr Sheena George, Technical Officer for TB Programme, India and Dr Satish Kaipilyawar, State Manager - Andhra Pradesh - PATH,	25-06-09	Development of IRL in the states.
14.	The IRL Team from Karnataka, consisting of Dr Sangeetha, I/c STDC, Karnataka, Dr Ajay Kumar, WHO Consultant, Karnataka, Mr Karibasappa, Consultant Microbiologist, Karnataka,	29-06-09	Discussion on various issues observed by NTI team during the OSE visit.
15.	Dr Vishnuvardhan Kamineni, Technical Consultant, IUATLD,	09-07-09	Discussion about the preparation for next OR workshop.
16.	Dr V.K. Arora, Vice Chairman, TB Association of India, New Delhi and Dr Shashidhar Buggi, Secretary, KSTBA,	13-07-09	Discussion about strengthening of NGOs to support RNTCP.
17.	Dr C Nagaraja, Pulmonologist, SDS TB & Rajiv Gandhi Institute of Chest Diseases, Bangalore,	16-07-09	Discussion on collaboration between NTI and their organization.
18.	Dr Vishnuvardhan Kamineni, Technical Consultant, IUATLD,	01-09-09	Discussion on partnership between Union and NTI, with specific reference to the protocol development workshop to be held at NTI from 21-25 September 2009.
19.	Dr K.R. Pardasani from MANIT, Bhopal,	01-09-09	Discussion on development of data base on tuberculosis under DBT project.

20.	Director, STDC, Karnataka,	03-09-09	Discussion on development of IRL at Bangalore.
21.	Dr Ruth from Community Health Centre, Bangalore,	29-09-09	Discussion on the role of NGOs in TB control.
22.	Mr. R.S. Chib, Hon'ble Minister for Medical Education / Technical Education & Youth Services and Sports, J&K	06-11-09	Was the Chief Guest of the training programme of IRL Microbiologists. The Hon'ble Minister was briefed about the activities of the Institute besides visit to various sections of the Institute.
23.	Dr R.K. Srivasthava, DGHS, Dte.GHS, New Delhi	29-12-09	The activities being carried out by the Institute was briefed besides visit to various section
24.	Mr. Majumdar, Chief Architect from Ministry of Health & Family Welfare, New Delhi	20-01-10 & 21-01-10	Discussion on the plan of International guest house and Auditorium at NTI.
25.	Dr Pulak Ghosh, Associate Professor, Indian Institute of Management, Bangalore and Dr Neeraj Tiwari from Kumaon University, Almora,	20-01-10	Discussion on the collaborative projects about strengthening the support of TB programmes in Hilly regions of Uttaranchal.
26.	Dr Vishnuvardhan Kamineni, Technical Consultant, IUATLD,	25-01-10	Discussion various partnership projects between IUATLD and NTI.

12. EVENTS CELEBRATED / ORGANIZED

- 15th August 2009 : **Independence Day** was celebrated in the Institute. The staff along with family members, trainees, staff from other offices situated within the campus and students from neighboring Bethesda School participated in the celebrations. The Director hoisted the National Flag. Patriotic songs were sung by the faculty, staff and trainees. The Director addressed the gathering.
- 7th -14th September 2009 **Hindi week** was observed from 7th - 14th September 2009 and Hindi Divas was celebrated on 16th September 2008. Prof. Gangaram B.G was the chief guest on the Hindi Day. As part of the observance of the Hindi week, Anthakashri, Hindi translation, Letter writing, Essay, Quiz competition, Ek Sham Bachchonke Naam (cultural programme for the children of NTI staff) and Hindi Jokes / Songs were organized. Prizes were distributed to the winners of the events
- 16th September 2009 NTI Foundation Day was celebrated
- 3rd & 7th November 2009 Vigilance awareness week was observed
- 19th - 25th November 2009 : Quami Ekta week was observed.

26th January 2010

Republic Day was celebrated in the Institute. The faculty & staff of NTI participated and Trainees from different parts of the country participated. Director hoisted the National Flag. Patriotic songs were sung by the faculty and staff. The Director addressed the gathering.

24th March 2010

World TB Day was observed in the Institute. EPS Officials presented the summary of the progress achieved in the Disease Prevalence Survey, Nelamangla and repeat ARTI survey.

13. FINANCIAL OUTLAY & EXPENDITURE

The Plan & Non-plan budget allocation and expenditure incurred for the financial years 2007-08, 2008-09 & 2009-10 are furnished below.

PLAN		(Rs. in lakhs)
Year	Budget allocated (Rs.)	Expenditure (Rs.)
2007 - 2008	195.00	181.59
2008 - 2009	195.00	192.74
2009-2010	195.00	112.47

NON PLAN		(Rs. in Lakhs)
Year	Budget allocated (Rs.)	Expenditure (Rs.)
2007 - 2008	325.00	291.14
2008 - 2009	566.00	549.01
2009-2010	639.50	636.23

Revenue generated by the Institute for the year 2009-10 was credited to the consolidated fund of Government of India as given in the table below.

REVENUE GENERATED	
Year	Amount (Rs.)
2009 - 10	8,90,551

14. ADMINISTRATIVE SECTIONS

ESTABLISHMENT

- The section caters to the administrative needs and general upkeep of the Institute. The various types of activities undertaken during the year under report are as under:

- Routine administrative matters.
- The details of recruitment, promotions, transfers, retirements (both superannuation and Voluntary Retirement), Termination from service and other related service matters etc., are furnished in the table given below:

Sl. No	Name	Designation	Date
Recruitment			
1.	Mrs. Ranikutty	Safaiwala	15-06-2009
2.	Dr. Sanat Kumar Tripathy	TB Specialist Gr.II	12-03-2010
Retirement on Superannuation			
1	Mr. B.R. Narayana Prasad	Draughtsman	30-04-09
2	Mr. S.G. Radhakrishna	Statistical Assistant	30-06-09
Transferred in			
1.	Dr. C. Ravichandra, assumed charge as CMO w.e.f. 01-01-2010 on transfer from Central Hospital, Mysore, Ministry of Labour.		
Transferred out			
1.	Dr. Devinder Tewani, CMO (NFSG) was transferred to CGHS New Delhi on 31-12-2009.		

- Provision of manpower to various sections.
- Processing of legal issues pertaining to service matters coming under the purview of Central Administrative Tribunals and higher institutions.

- v. Correspondence with Directorate General of Health Services (DGHS) and other agencies on administrative matters.
- vi. Upkeep of office campus including buildings, hostel facilities.

Training of officers in administrative matters

Sl. No.	Details of Training	Duration	Venue	Name of the officer
1	Orientation Programme on Prevention of Sexual Harassment at work place	11-08-09 to 13-08-09	National Institute of Public Cooperation and Child Development	Mrs. Rahelamma Abraham
2.	Training on Pension & retirement benefits	11-08-09 to 12-08-09	Institute of Government Accounts & Finance, Regional Training Centre , Chennai	Mr. C. Narayana Rao
3.	Reservations and concessions in government	11-11-09 to 13-11-09	Hotel Pai Vista Mysore	Dr. N. Somashekar
4	Training on MACP and Pay Fixation	21-01-10 to 22-01-10	Institute of Government Accounts & Finance, Regional Training Centre, Chennai	Mr. C. Narayana Rao

ACCOUNTS

This section is responsible for the financial matters related to the Institute. The activities carried out during the period under report are:

- i. Preparation of annual budget proposal and performance budget.
- ii. Drawing and disbursement of Salaries, Traveling Allowances, Medical reimbursement & other claims and advances by staff & officers.
- iii. Calculation and disbursement of arrears of VI CPC and Patient Care Allowance and crediting the same to the employee's account in the respective banks.

- iv. Effecting scheduled and non-scheduled deductions and its remission to concerned authorities.
- v. Processing of payments pertaining to procurements made by stores and annual maintenance contracts services.

STORES

The Stores caters to the logistic requirement of various sections of the Institute. It is responsible for procurement and supply of stores items for the smooth functioning of the Institute. This involves extensive procedures viz., receipt of indents from individual sections and their compilation, calling for quotations/ tenders, arrangements for opening the tenders, preparation of comparative statements and submission of the same to the Purchase Committee for its recommendations for further necessary action. The other functions of the section includes :

- i. Maintenance of stores /stock ledger.
- ii. Arrangement for Annual Maintenance of equipments held by different sections.
- iii. Arrangement for Annual Stock verification
- iv. Arrangement for condemnation and disposal of unserviceable items as per laid down procedure.

TRANSPORT

The Institute has fleet of 11 vehicles and this section is primarily responsible for its upkeep and provision of the vehicles for various sections of the Institute as per requirements. The section also handles maintenance of all documents regarding registration, insurance and condemnation. The section is also equipped to undertake in-house repairs of vehicles.

HOSTEL

The hostel of the institute caters to the accommodation needs of medical & paramedical trainees attending various training programmes and also officials visiting from head quarters and other Institutions/Offices. The Institute has two hostel blocks viz., Krishna Nivas and Cauvery Nivas. Krishna Nivas block has 27 rooms and Cauvery Nivas has 19 rooms. The Mess attached to the Hostel also caters to the Quality and hygienic boarding facility.

15. CIVIL & ELECTRICAL WORKS AND MAINTENANCE

CIVIL & ELECTRICAL WORKS

The Civil and Electrical works of the Institute are being executed through the Central Public Works Department (CPWD), under the Ministry of Urban Development and Poverty Alleviation, Government of India, out of the budget sanctioned to NTI during each financial year.

A budget of Rs. 62/- lakhs under the head of account PLAN-Capital-Major works and Rs. 35/- lakhs under machinery and equipment was allocated to the Institute during the financial year 2009-10 for carrying out maintenance and new works. Of which, an amount of Rs.41.48 lakhs and Rs. 24.87 lakhs were spent respectively. The following Civil, Electrical and Horticultural works were executed during the period under report.

1. Water proofing of the roof of Stores, NTI staff quarters and vehicle sheds were carried out.
2. Horticulture works was carried in the surrounding areas of Canteen besides defense planting along the compound wall of the eastern side
3. Providing computer outlets & power points in I & II Floor of PV Benjamin Block.
4. Providing sun control film to the window panes and Venetian blinds for computer laboratory and & vetrified flooring in the passage of 3^d floor of PV Benjamin Block.
5. Dismantling of vehicle sheds in front of the National Institute of Communicable Diseases situated in the NTI campus.
6. Aluminum extrusion work in Training & Bacteriology Section.
7. Routine maintenance operation viz., civil, electrical & horticultural maintenance work was undertaken by the CPWD besides maintenance of the existing Air Conditioners.

Acknowledgements

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