

NATIONAL TUBERCULOSIS INSTITUTE BANGALORE



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

2010 -11

NATIONAL TUBERCULOSIS INSTITUTE
WHO Collaborating Centre
For
Tuberculosis Research & Training

ANNUAL REPORT
2010 - 11



Government of India
NATIONAL TUBERCULOSIS INSTITUTE
(Directorate General of Health Services)
'Avalon', No.8, Bellary Road, Bangalore-560 003
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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 Immuno 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
MIFA	Managing Information For Action
MO-TC	Medical Officer - TB Control
M.TB	<i>Mycobacterium tuberculosis</i>
NACP	National AIDS Control Programme
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

It gives me immense pleasure to present the Annual report for the year 2010-11. The report has a blend of both administrative and technical activities undertaken by the institute.

The institute has been reposed with responsibility to develop human resources to implement the Revised National Tuberculosis Programme (RNTCP) and conduct Operational Research to provide meaningful inputs to improve the service delivery of RNTCP- this has been done diligently over the years- the past year being no exception. The training courses are organized in close consultation with Central TB Division, New Delhi. The Institute shoulders the responsibility of training medical and paramedical personnel from various states and Union Territories in several facets of Tuberculosis control. Induction training in RNTCP for state and district level programme managers, professors of medical colleges, and medical officers, Training on Managing Information for Action (MIFA) and Training in Epi- Centre were some of the important courses held at NTI during the past year. Several laboratory related training programmes in External Quality Assessment, Culture & DST, preventive maintenance and minor repairs of binocular microscopes were also conducted. Also, a training course in Culture & DST of *Mycobacterium tuberculosis* was organized in collaboration with SAARC TB & HIV AIDS Centre, Nepal. The year witnessed the establishment of International Centre of Excellence in Laboratory Training at NTI and training courses in Line probe assay were held for the first time.

Operational research is one of the prime functions of the institute. Repeat zonal tuberculin survey for estimating Annual Risk of Tuberculosis Infection and Disease prevalence survey in Nelamangala taluk, Bangalore, were the path breaking research studies completed during year. An OR research workshop was held in collaboration with CTD, The Union, CDC Atlanta and WHO. 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.

The core activities of the National Reference Laboratory at NTI comprises of training the laboratory personnel and accreditation of Intermediate Reference Laboratories for the Culture and Drug Susceptibility Testing to detect Drug Resistant Tuberculosis and support the activities such as Drug Resistance Surveillance (DRS) and rolling out DOTS Plus services by states and Union Territories.

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

A fleeting reference has been made on the organizational set up of the institute, the staff position and the various committees of the institute. The role of administrative sections in ensuring the efficient execution of technical activities cannot be overemphasized and their contribution finds a mention in the report.

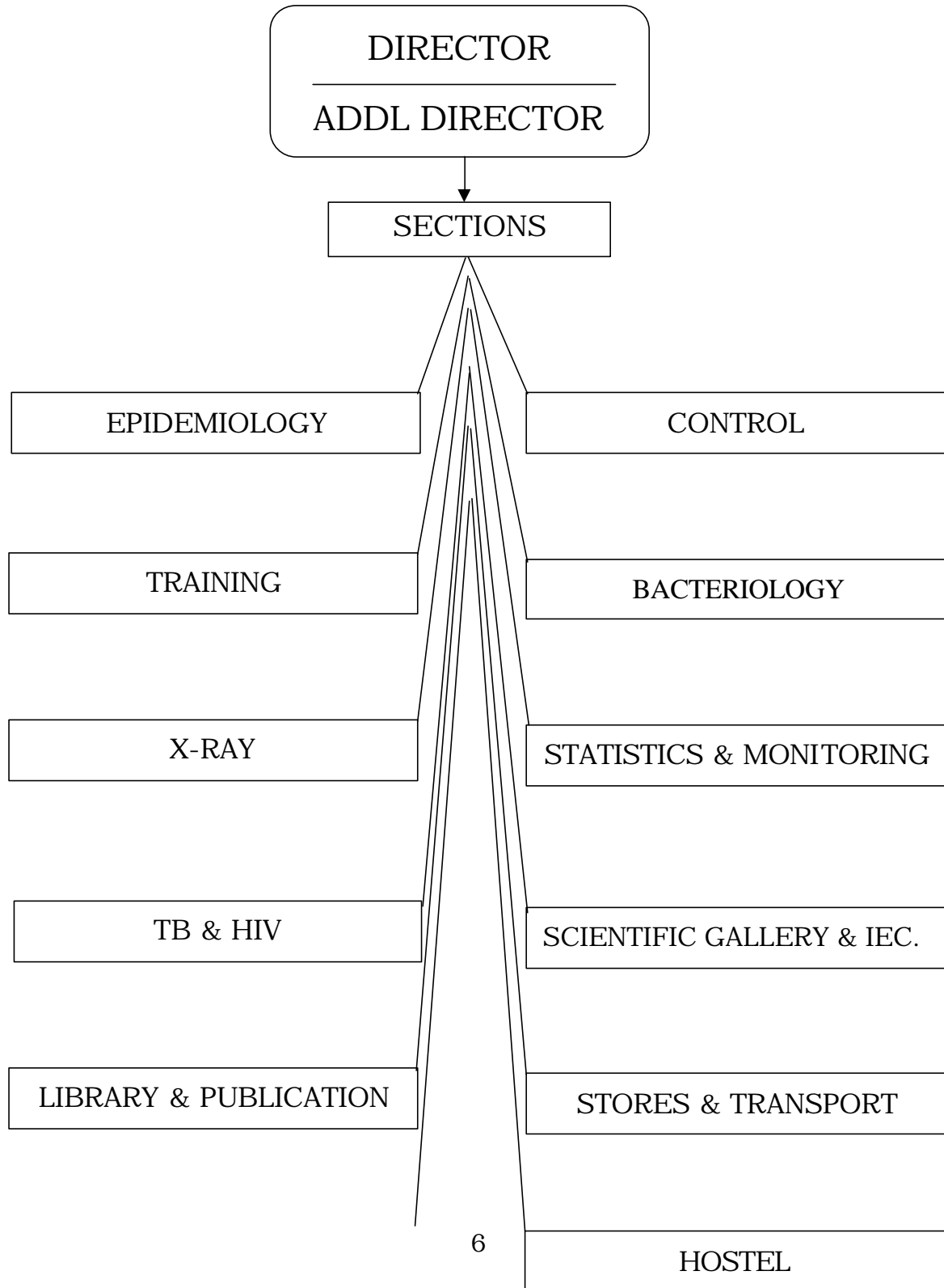
I sincerely appreciate the faculty and staff of the institute for their co-operation and their indefatigable efforts and diligence during the year. I solicit the same degree of motivation and dedication from the staff of the institute in times to come.

I also express my gratitude to the Central TB Division for their continuous co-operation, guidance and encouragement.

Dr. Prahlad Kumar
Director

Dated:
Place: Bangalore

1. ORGANIZATIONAL SET UP



2. STAFF POSITION

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

GROUP-WISE STAFF POSITION

Sl. No.	Category	Sanctioned	In position	Vacant
1.	Group 'A'	15	13	2
2.	Group 'B'			
	<i>Gazetted</i>	03	2	1
	<i>Non-gazetted</i>	34	25	9
3.	Group 'C'	103	96	7
Total		155	136	19

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 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

A core activity of the Institute is to support human resources development and strengthen the capacity of programme managers through skill development activities relevant to RNTCP. The aim of RNTCP training programmes is to ensure that programme managers, teachers of medical colleges, medical officers and paramedical staff are equipped with the necessary skills and knowledge required to implement and sustain TB control activities including management of TB-HIV co-infection, quality assurance of sputum microscopy, sputum culture, programmatic management of drug resistant TB, data management and forging partnerships with all sectors involved in TB control activities.

All RNTCP training activities at NTI are organized in coordination with the HRD unit at Central Tuberculosis Division (CTD). Careful planning ensures that all key personnel involved with the RNTCP are adequately trained in RNTCP and also on the newer initiatives under the programme. The proposed annual plan for training activities to be held at NTI is prepared for the ensuing year and sent to CTD. The CTD communicates the annual training plan to all State TB Officers. Prior intimation of the annual training plan ensures staggered nomination of candidates in appropriate batch sizes and also provides adequate time to secure release of participants from their offices for attending the training programmes. Also, the training section works in tandem with the hostel, stores and transport sections of the institute to facilitate smooth organization of training activities. Several training courses on all facets of TB control were conducted last year to cater to the ever-increasing demand of trained manpower, the details of which are briefly appended below.

A. RNTCP Modular training

This twelve days induction training for state and district level programme managers, teachers of medical colleges and medical officers, imparts skills and knowledge for effective implementation of RNTCP. The training methodology is essentially through reading the modules, group discussions, interactions and work exercises. This is augmented with presentations on important aspects of RNTCP and field visits to Tuberculosis Units. The list of the batches in which the course was conducted during the year under report is as under:

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	17-05-10 to 29-05-10	28	Assam, Chattisgarh, Goa, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Mizoram, Rajasthan, Tamil Nadu and West Bengal.

Sl. No.	Category of personnel	Duration	No. of Participants	Organization / State / District represented
2		12-07-10 to 24-07-10	36	Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Punjab, Chattisgarh, Goa, Gujarat, Jharkhand, Kerala, Maharastra, New Delhi, Rajasthan, Tamil Nadu, Uttar Pradesh & West Bengal.
3	State and District level programme Managers and faculty from Medical colleges	18-10-10 to 30-10-10	44	Andhra Pradesh, Chattisgarh, Goa, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Orissa, Tamil Nadu, Uttar Pradesh, Uttarakhand and West Bengal.
4		15-11-10 to 27-11-10	28	Andaman & Nicobar Islands, Andhra Pradesh, Assam, Chandigarh, Goa, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Meghalaya, Orissa, Punjab, Rajasthan & West Bengal.
5.		17-01-11 to 29-01-11	31	Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Gujrat Karnataka, Kerala, Madhya Pradesh, Maharashtra, Punjab & West Bengal.
6.		07-03-11 to 19-03-11	24	Andhra Pradesh, Assam, Chattishgarh, Gujarat, Jharkhand, Maharashtra New Delhi, Odisha & Tamil Nadu.

B. Data Management Training – Managing Information for Action (MIFA):

The objective 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. The details of the MIFA training held last year is as under:

Sl. No.	Category of personnel	Duration	No. of Participants	Organization / State / District represented
1	Training of Master Trainers on MIFA under RNTCP	16-08-10 to 20-08-10	35	Arunachal Pradesh, Goa, Haryana, Himachal Pradesh, Maharashtra, Madhya Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Punjab, Uttar Pradesh, Uttarakhand

C. Training in Epi-Centre:

This training course aims at familiarizing Consultants and Data Entry operators on the Windows version of Epi-Center for reporting aggregate quarterly data on case finding and treatment outcome from districts. The schedule of the course organized is as under:

Sl. No.	Category of personnel	Duration	No. of Participants	Organization / State / District represented
1	WHO-RNTCP Consultants and Data Entry Operators from different states of the country	06-12-10 to 10-12-10	33	Andhra Pradesh, Karnataka, Kerala, UT of Lakshadweep, Pudhucherry & Tamil Nadu

D. Laboratory related training

In the capacity of an NRL, NTI imparts various laboratory related training programmes the details of which are as under:

i. Training in External Quality Assessment (EQA)

Sl. No.	Category of personnel	Duration	No. of Participants	Organization / State / District represented
1	State & District level Programme Managers and faculty from Medical Colleges	04-10-10 to 08-10-10	16	Dadra & Nagarhaveli, Haryana, Himachal Pradesh, Jammu & Kashmir, Maharashtra & Rajasthan
2		03-01-11 to 07-01-11	13	Himachal Pradesh, Maharashtra, Puducherry, Uttar Pradesh & West Bengal
3	Orientation of STOs & STDC Directors in EQA	08-04-10 to 09-04-10	13	Chandigarh, Himachal Pradesh, Madhya Pradesh, Maharashtra, Manipur, Mizoram, Tamil Nadu & West Bengal

ii. Training in Preventive Maintenance and Minor Repairs of Binocular Microscopes

Sl. No.	Category of personnel	Duration	No. of Participants	Organization / State / District represented
1	Laboratory Technicians	21-09-10 to 24-09-11	7	Andaman & Nicobar Islands, Pondicherry and Sikkim

iii. 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	26-04-10 to 07-05-10	10	Gujarat, Haryana, Maharashtra & Puducherry
2		07-06-10 to 18-06-10	5	Rajasthan

Sl. No.	Category of personnel	Duration	No. of Participants	Organization / State / District represented
3		02-08-10 to 13-08-10	01	Karnataka
4		16-08-10 to 27-08-10	09	Arunachal Pradesh, Assam, Bihar, Haryana, Manipur & Maharashtra.
5		01-12-10 to 11-12-10	12	Arunachal Pradesh, Assam, Himachal Pradesh, Jharkhand, Karnataka, Manipur, Rajasthan & West Bengal.
6		07-02-11 to 18-02-11	05	Madhya Pradesh & Uttar Pradesh

iv. Training in Line Probe Assay & Liquid Culture

The International Centre of Excellence in Laboratory Training (ICELT) with the support of Foundation for Innovative Newer Diagnostics (FIND) imparts training in New Diagnostic Techniques like Line Probe Assay (LPA), Liquid Culture using Mycobacterial Growth Indicator Tube (MGIT) and Laboratory Bio-safety for Microbiologists from IRL and NRL. The objective of using the LPA is to fast track MDR-TB diagnosis, as it is a molecular technique that detects resistance to Rifampicin.

The details of the training programmes are as under:

Sl. No.	Category of personnel	Duration	No. of Participants	Organization / State / District represented
1	Microbiologists & Senior Laboratory Technicians	26-07-10 to 30-07-10	06	IRL Ahmedabad , Hyderabad, Pune and National Tuberculosis Institute (NRL)
2		24-01-11 to 28-01-11	05	IRL Ahmedabad, Ajmer, Nagpur, Trivandrum, AIIMS & New Delhi TB Centre, New Delhi
3	Microbiologists & Senior Laboratory Technicians contd..	31-01-10 to 04-02-11	05	IRL Cuttack, Kolkata, Raipur, Ranchi and JJ Hospital, Mumbai

E .Collaborative training activities with SAARC TB & HIV/AIDS Centre

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

Sl. No.	Category of personnel	Duration	No. of Participants	Countries represented
1	SAARC Regional Training of Trainers (Microbiologists) on Culture & DST of <i>Mycobacterium tuberculosis</i>	22-06-10 to 28-06-10	16	Afghanistan, Bangladesh, India, Sri-Lanka & Nepal

F. Participation of NTI faculty as resource persons in Training activities

Sl. No.	Type of Training	Duration	No. of Participants	Resource Person
1.	Sensitization programme for Private Practitioners organized by BBMP	20-06-10	30	Dr. Preetish S. Vaidyanathan
2.	On-site re-training of IRL Microbiologists and Lab. Technicians in Mycobacterial culture and Drug Susceptibility Testing held at IRL Nagpur, Maharashtra	10-01-11 to 12-01-11	10	Mr. H.D. Surendra
3.	Training on Techniques of Tuberculin Skin Test	05-04-10 to 10-04-10	16	Mr. Lakshminarayana Mr. Joydev Gupta

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 also screened by the Institutional Ethics Committee for addressing the ethical issues. The progress of the project is monitored by the TCC at periodic intervals. The findings of the research studies are also discussed in the TCC before they are either presented in technical conferences or published in journals.

A. Research studies under progress

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

1. A prospective multi-centric cohort study to assess risk factors for unfavourable treatment outcomes, including recurrent TB, among sputum positive pulmonary tuberculosis patients treated with CAT I regimen of RNTCP

- The principal Investigator from NTI reviewed the draft protocol questionnaire received from TRC, Chennai and comments thereon were sent to the project co-ordinator.
- Discussion was held with the project co-ordinator from TRC, Chennai regarding the protocol, budget and study questionnaire. Subsequently the questionnaire was modified and the details of budget for NTI was prepared and forwarded to the co-ordinator.
- Planning visits were made to the two provisionally selected districts for preliminary data collection.
- The Field work for the study is yet to be initiated

2. Factors associated with unfavorable TB treatment outcome in New Smear positive patients treated under Revised National Tuberculosis Control Programme in Bruhat Bengaluru Mahanagara Palike

Field work initiated in January 2011. The data collection of patient information from records were completed for eight TUs in May 2011. The data collection for the remaining one TU is expected to complete by first week of June 2011. Data entry of the information collected is in progress.

3. Annual Risk of Tuberculous Infection (ARTI) Among School Children in Nelamangala Taluk, Bangalore Rural District

The objectives of the survey are to study the prevalence of infection and estimate ARTI among children studying in 1st to IVth standard of selected schools of Nelamangala

Taluk aged 1-9 years of age and to derive the relationship between ARTI and prevalence of infectious cases of pulmonary TB disease. During the year under report, a total of 3706 children were registered into the study.

4. “Role of Drug Resistant isolates of *M.tuberculosis* on Infectivity, Pathogenesis & Transmission of Tuberculosis in Guinea Pig Animal Model” (R.P. No.232).

The study was commenced in November 2010. Preliminary work for this IAEC approved protocol including viability testing & preserving study cultures at -80° C was carried out as per the approved action plan/work instructions. Three coded suspensions were inoculated in prescribed number of albino guinea pigs (36) before assessing for infectivity of drug-resistant isolates of *M.tuberculosis*. Post-mortem examinations were conducted on eight guinea pigs, infected two weeks earlier with drug-resistant isolates of *M.tuberculosis*. Lymph glands (RLG/ILG/SLG) from these animals were aseptically dissected out, mechanically homogenized, serial dilutions prepared and inoculated on LJ media. Gross lesions, if any, were scored at the time of necropsy.

5. “Maintenance of High Virulent status of *M.tuberculosis* strain”.

Two high virulent strains of *M.tuberculosis* were passaged in 16 albino guinea pigs. Necropsy examinations were conducted 6- weeks post-infection & spleen tissue homogenates processed for the viable counts.

B. Research studies completed

RP-226 “District level intervention study on routine referral of TB patients to Voluntary Counseling and Testing Centers”

The field work for the second phase of the above study on “Follow up of HIV infected TB patients detected from the cohort of patients registered for treatment under RNTCP during July 2007 to June 2008 in Mysore district” was completed in March 2010 and data entry and data analysis of information related to TB treatment along with the outcome, linkage to ART services and details regarding initiation of ART available in the study formats of 281 HIV infected TB patients was completed.

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

The objective of the study was to estimate the point prevalence of pulmonary TB among individuals =15 years of age. The field methodology comprised of registration of the study population by house to house visits, screening for presence of pulmonary symptoms and by Mass Miniature Radiography (MMR) of the chest, followed by sputum examination (two specimens) of persons with symptoms or any kind of X-ray abnormality. Two sputum specimens were collected from individuals with symptoms or any abnormality on X-ray, and examined by microscopy and culture for Acid Fast Bacilli.

During the year under report, a total of 4603 persons were registered and 4070 persons were screened for symptoms. Overall, 71,874 persons were registered into the study and 88% were investigated for the presence of chest symptoms suggestive of TB.

The Prevalence of ***bacteriologically positive Pulmonary Tuberculosis was estimated at about 260*** per 100,000 population. There was significant decline in prevalence estimates compared to the findings of a previous survey in the same area in 1975.

Common templates to be adopted for analysis of the data by 6 Disease prevalence survey sites in the country was formulated with the support of committee nominated by DDG (TB) for this specific purpose.

Repeat zonal level tuberculin survey for estimating Annual Risk of Tuberculous Infection (ARTI)

The objectives of the survey were to estimate ARTI among children 1-9 years of age in each of the four zones and to compare with the estimates obtained during previous zonal level surveys during 2000-03.

During the year under report, fieldwork was carried out in 374 clusters (i.e. 46 in North Zone, 98 in South Zone, 95 in East Zone and 136 in West Zone). Observational Visits were made to North, East, South and West Zones by NTI team to monitor field work as per work instructions. Monitoring and fault correction of itemized work were rendered through SOP. Corrective actions were taken wherever necessary. Further, elaborate support was provided to bringing up reader consistency levels by undertaking internal and external consistency tests on spot. Immediate attention was paid to telephonic queries and necessary advice/ support. The fieldwork has since been completed. Data entry undertaken at the zonal institutes was received at NTI; analysis was undertaken with support of statistics section and a draft report has been prepared. Preliminary results revealed that the ARTI varied between 0.8-1.3% in different zones.

C. Research Papers published

Epidemiology to Pulmonary Tuberculosis in "Tuberculosis 2010" - Jaypee Brothers Medical Publishers, New Delhi:

Evolution of Tuberculin Skin test and challenges in its interpretation - NTI Bulletin 2008,44/1&2:7-13.

Guidelines for conducting Tuberculin Test surveys in high prevalence countries - International Journal of Tuberculosis and Lung Disease 2011, supplement 1 : S1-S26.

D. Research Papers under publication

1.

The paper entitled "Treatment Outcome and Mortality at One and Half Year Follow-up of HIV infected TB Patients Under TB Control Programme in a District of South India" - PLoS ONE open access journal in March 2011.

2. 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
3. Proteogenomic analysis of *Mycobacterium tuberculosis* by high resolution mass spectrometry - Genome Biology
4. Prevalence and Annual risk of tuberculous infection among inmates (0-17 years) residing in orphanages of Bangalore city - in Indian Journal of Tuberculosis.
5. Contribution of Epidemiology to the sustained development and strengthening of Tuberculosis Control - in NTI Bulletin.

6. NATIONAL REFERENCE LABORATORY

The laboratory at NTI has been designated as one of the National Reference Laboratories, which assess the quality of the sputum smear microscopy, culture and drug susceptibility testing services in the laboratory network under RNTCP. As an NRL, NTI supervises and monitors the quality of sputum smear microscopy in the network of laboratories in the nine states allocated viz., Bihar, Jammu and Kashmir, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Rajasthan and West Bengal.

The NRL trains laboratory personnel and is responsible for accrediting state level laboratories i.e., the IRLs, Medical Colleges and other private laboratories for Culture and Drug Susceptibility Testing for detection of Drug Resistant Tuberculosis (DR-TB). Besides these activities it also supports State level Drug Resistance Surveillance (DRS) and DOTS Plus activities.

The laboratory participates in annual proficiency testing for Culture and Drug Susceptibility Testing for both the first and second line drugs, with its Supranational Reference Laboratory (SRL), the Prince Leopold Institute of Tropical Medicine, Antwerp, Belgium.

Facilities for newer diagnostic techniques such as the Line Probe Assay (LPA), Liquid culture by the Mycobacterial Growth Indicator (MGIT) 960 system and the Genetic Sequencer have been established with support from the World Health Organization (WHO). The NRL is also involved in building a spectral library of the chromatographic profiles of the mycolic acids of pathogenic Non Tuberculous Mycobacteria (NTM), using the HPLC (High Precision Liquid Chromatography) system.

A. Quality Assurance System (QAS):

The Quality Assurance (QA) system for sputum smear microscopy in RNTCP consists of Internal Quality Control (IQC), External Quality Assessment (EQA) and subsequently Quality Improvement (QI) of the laboratory services.

B. External Quality assessment (EQA):

EQA is performed by an On-Site Evaluation (OSE) visit. The components of EQA include, infrastructure assessment, panel testing of the laboratory staff and analyzing data from the Random Blinded Re-Checking (RBRC) at the district level.

The details of EQA-OSE visits undertaken between March 2010 – 2011 are as follows:

Sl. No	State visited	Dates	Team Members
1	Rajasthan (Ajmer)	10-08-10 to 13-08-10	Mr. S. Anand Ms. Reena. K Dr. Alpana Misra Ms. Roopa
2	Orissa (STDC Cuttack)	14-09-10 to 19-09-10	Mr. S. Anand Ms. Mamatha H.G. Ms. Anupurba
3	Madhya Pradesh: IRL Indore & STDC Bhopal	27-09-10 to 30-09-10	Mr. S. Anand Ms. Mamatha H.G. Ms. Anupurba
4	Karnataka	27-12-10 to 29-12-10	Mr. S. Anand, Ms. Mamatha H.G. Ms Srilatha

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

- (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 appraising laboratory related issues to Director/Commissioner public health/Principal secretary (health) of 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 in a quarter and are attended by the NRL Directors, Microbiologists and other partner agencies. The Director and Consultant Microbiologist of NTI participated in 19th RNTCP Laboratory Committee Meeting.

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	Maharashtra (Pune)	24-03-11 to 25-03-11	Mr. S Anand Ms Mamatha H. G. Ms Srilatha

Accreditation of Laboratories

Accredited Mycobacteriology laboratories are a pre-requisite for the efficient diagnosis and follow-up of MDR-TB patients. Towards this objective, efforts are being made to establish IRLs to cater to the diagnostic and follow-up needs of DR-TB patients, in each state. Provision also has been made for inclusion of laboratories of Medical Colleges and the Private Sector, interested in participating in the diagnosis and follow-up of such cases.

The Microbiologists and Laboratory Technicians from such laboratories are trained by the NRL. Subsequently, a pre-assessment visit is undertaken by a central team, the objective of which is to assess the suitability of the laboratory infrastructure and installation of equipments.

Panel cultures are then exchanged between the NRL and the IRL for proficiency testing and retesting. A satisfactory performance is determined in terms of concordance of more than 90% for Isoniazid (H) and Rifampicin (R); more than 80% for Streptomycin(S) and Ethambutol (E). The laboratory carries out investigation of errors if any in case of an unsatisfactory performance in the proficiency testing and informs the NRL regarding the any corrective action taken.

A pre-accreditation visit is then undertaken by a central team to assess the laboratory's technical performance, prior to formal accreditation. Accreditation is initially for a period of two years. During this phase, the accredited laboratory is required to regularly and satisfactorily participate in proficiency testing exercises conducted by the NRL. The minimum number of participations in the proficiency testing is once prior to and twice within the first year of accreditation. Following this the laboratory is required to undergo proficiency testing at least once in every two years.

An on site – evaluation of the laboratory, is undertaken within the first year of grant of accreditation. A re-assessment is performed before the lapse of two years of accreditation, for which the laboratory applies six months in advance. Thereafter, re-assessment of the accredited culture and DST facility is 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:

SMS Medical College, Jaipur, Rajasthan	: May 2010
JJ Medical College, Mumbai, Maharashtra	: February 2011
BMHRC Bhopal, Madhya Pradesh	: March 2011
Choithram Hospital & Research Centre, Indore, Madhya Pradesh	: March 2011

Specimens processed at NTI during the period April 2010-March 2011

Total number of Patients registered	490
Total number of specimens registered	938
Total number of specimens put up for the Primary culture	836
Total number of sensitivity tests done by Proportion method	125
Total number of specimens subjected for Identification tests	150
Out Patients registered	53
Out Patient specimen registered	70
Sputum	483
Gastric lavage	0
Pus	2
Urine	0
Culture from various Hospitals	40
Others (CSF, Biopsy)	0
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, 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.

The Library also coordinates the activities of the Editorial committee and Publication Section. It plays active role in publication programme of the Institute.

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 / Articles published:

1. NTI Annual Report for the year 2009-10
2. NTI Bulletin **Vol. 44/1&2**

B) Document / Articles under publication

An article on “Contribution of Control Section (1959-2009) towards strengthening of Tuberculosis Control” was prepared and submitted for special issue of NTI Bulletin.

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 maintaining homogenous stock of Guinea Pigs required for experimental purposes. The details of technical activities carried out by the Institute are as under:

(A) Status of laboratory animals

Homogeneous stock of 361 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.

(B) Scientific Gallery

As part of the ACSM activity, the institute has a scientific gallery which has rich source of information for all those engaged in TB control activities. The photographic display session will leave 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 ACSM materials comprises 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 projection materials are being revised periodically to include the latest guidelines of RNTCP. A new power point presentation on the various aspects of Tuberculosis & its control programme was introduced for the benefit of the visitors.

The target group for the scientific gallery comprises of medical, para-medical personnel working in both teaching & non-teaching institutions and students of graduation & post graduation from other life science subjects.

This facility is extended to the visitors during all working days of the week (i.e, Monday to Friday). The Scientific Gallery could be visited by interested visitors / institution on a mutually agreed date.

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, para-medicals and students of graduation / post graduation 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 1808 visitors in 53 batches from 37 educational institutions during the year under report. The details of the visits are furnished below:

Sl. No.	Date	No. of participants	Organization
1	06-04-10	12	Maharani lakshmi ammani college for women , Bengaluru
2	13-04-10	31	St Philominas college of nursing, Bengaluru
3	15-04-10	47	Athena college of nursing, Mangalore
4	20-04-10	34	Bhagawan mahaveer jain college of nursing, Bengaluru
5	12-05-10	25	Oxford college of science, Bengaluru
6	22-04-10	03	Govt. nursing college, Victoria campus, Bengaluru
7	28-04-10	43	Padmashree college of nursing, Bengaluru
8	30-04-10	43	
9	01-06-10	33	Krupanidhi college of nursing, Bengaluru
10	03-06-10	32	St. John's college of nursing, Bengaluru
11	09-06-10	08	Bengaluru Medical College, Bengaluru
12	23-06-10	57	KPB College of nursing, Mangalore
13	25-06-10	13	Krupanidhi college of nursing, Bengaluru
14	09-07-10	36	Maruthi college of nursing, Bengaluru
15	13-07-10	37	Dr. John college of nursing, Bengaluru
16	20-07-10	33	Govt. nursing college, Victoria campus, Bengaluru
17	21-07-10	65	Govt. Medical college, Trissur, Kerala
18	29-07-10	28	Sri lakshmi college of nursing, Bengaluru
19	21-09-10	27	Air force medical Training centre, Bengaluru
20	28-09-10	03	Yenepoya college of nursing, Mangalore
21	28-09-10	43	Gautham college of paramedical science, Bengaluru
22	07-10-10	39	St Philominas school of nursing, Bengaluru
23	18-10-10	15	Krupanidhi college of nursing, Bengaluru
24	21-10-10	15	Bhagawan mahaveer jain college of nursing, Bengaluru
25	26-10-10	40	St. Martha's college of nursing, Bengaluru of nursing, Bengaluru

Sl. No.	Date	No. of participants	Organization
26	27-10-10	50	Administrative management college, Bengaluru
27		50	VHM Medical College, Tamil Nadu
28	09-11-10	50	Hosmat college of nursing, Bengaluru
29	23-11-10	25	PSG College of nursing, Coimbatore, Tamil Nadu
30	25-11-10	32	Florence college of nursing, Bengaluru
31	30-11-10	19	Walchand college of Arts & science, Solapur, MH
32	02-12-10	40	Gautham school of nursing, Bengaluru
33	03-12-10	48	
34	08-12-10	35	Air force medical Training centre, Bengaluru
35	09-12-10	38	T.John college of nursing , Bengaluru
36	10-12-10	37	Air force medical Training centre, Bengaluru
37	10-01-11	38	Lakshmi memorial Inst. Of nursing,Mangalore
38	11-01-11	38	Lakshmi memorial Inst. Of nursing,Mangalore
39	17-01-11	41	JOSCO College of nursing, Bengaluru
40	31-01-11	23	TJPS College, Guntur, AP.
41	04-02-11	52	St. Mary's Inst. Of nursing, Bengaluru
42	10-02-11	45	Sri Adichunchanagiri sikshana trust, college og nursing, Sakthi Nagar, Bavani Taluk, Tamilnadu
43	17-02-11	10	Mathru college of nursing, Bengaluru
44	21-02-11	04	A.J.Inst. of medical science, Mangalore
45	22-02-11	72	Air force medical Training centre, Bengaluru
46	24-02-11	23	Lakshmi memorial Inst. Of nursing,Mangalore
47	25-02-11	59	Narayana hrudayalaya college of nursing, Bengaluru
48	28-02-11	50	Acharya Inst. Of Medical science, Bengaluru
49	04-03-11	40	SEA college of nursing, Bengaluru
50	04-03-11	20	Karnataka vijnana parishat, Bengaluru
51	11-03-11	30	Oxford college of science, Bengaluru
52	24-03-11	37	Bhagawan mahaveer jain college of nursing,Bengaluru
53	30-03-11	40	Sri Devaraj Urs College of Nursing, Kolar

(D) Consultancy Services

Dr. V.K. Chadha, Senior Epidemiologist provided technical assistance for conduct of validation of Annual Risk of Tuberculous Infection survey to the Royal Govt of Bhutan at Bhutan from 25th Aug to 3rd Sept 2010.

Dr. P. Kumar, Director provided Consultation on “Galvanizing evidence for HIV management” held at National AIDS Research Institute, Pune from 27th – 29th January 2011 and also had held interaction with International and National participants on TB-HIV co-infection.

Dr. P. Kumar, Director participated in the WHO “National consultation on developing public-private collaboration strategies for RNTCP-3 held at Le Meridian, New Delhi from 16th – 19th February 2011

(E) Review of articles / 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 various organizations both within India and outside India. During the year, eight research proposals were reviewed for its suitability for publication in various journals, by the faculty of NTI and comments submitted.

(F) External Quality Assurance for Mycobacterial Culture and DST

The laboratory participated in the 16th Round of proficiency testing, with Institute of Tropical Medicine, Antwerp, Belgium. The Proficiency of most of the drugs was more than 97 % and the sensitivity for all the drugs were 100 %.

(G) External Quality Assurance for sputum smear microscopy:

The laboratory participated in the 7th Round of proficiency testing for sputum smear microscopy with SAARC-TB, Proficiency was 100%.

(G) Diagnosis of XDR-TB:

Performing 2nd line DST for XDR suspects diagnosed at accredited state level Culture & DST laboratory under the supervision of NTI.

(H) Maintenance of High Virulent status of *M. tuberculosis* strain:

Two high virulent strains of *M.tuberculosis* were passaged in 16 albino guinea pigs. Necropsy examinations were conducted 6 weeks post-infection & spleen tissue homogenates processed for viable counts.

(G) X-ray services

Twenty three cases referred large X-rays were taken 23. The CD mobile X-ray unit being used in the field for the DPS Survey was dysfunctional and the same was serviced for its smooth functioning.

9. STATISTICAL SERVICES FOR RESEARCH ACTIVITIES

The statistics section of the Institute plays an essential role and forms a supportive unit of the research activities. This wing provides the statistical needs of all the research activities, i.e., from the planning stage of studies or surveys, protocol development, designing study schedules/forms, sample size estimation, 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, SPSS, etc., This wing also shoulders the responsibility of documenting and archiving the various research protocols approved and studies conducted in the Institute till date. In order to cater to the needs of both national and international trainings, an exclusive computer laboratory consisting of 18 computers with LAN connectivity and other basic requirement was established.

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

During the year a control section study on 'Factors associated with unfavorable TB treatment outcome in new smear positive patients treated under RNTCP in BBMP' is initiated along with the ongoing projects viz., Disease Prevalence Survey, Repeat ARTI Survey and Routine Referral of TB patients to ICTC.

Hardware facilities

An exclusive computer laboratory with LAN connectivity and other basic requirements including internet connectivity was established. providing a state of art ambience to make available to the needs of national/ international trainings.

Intranet facility

A separate domain name "ntiindia.org" was registered and is being operational. The existing e-mail facilities within the Institute have been improved from the conventional centralized system. As part of decentralizing the communication network in the Institute, intranet facility has been launched in the Institute to enable every section to access the email received by the Institute and also transmitting emails to both within the Institute and external organizations/agencies. In the present system, the enclosures of the mails received are traversed to the "inbox" of the concerned sections of the Institute after Director's perusal. The outgoing mails from the Institute are being sent from the respective sections after approval. This has resulted in not only enhancing the efficiency but also conservation of paper.

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 /poster presented
1	65th NATCON 2010 held at NIMHANS, Bangalore	10-01-11 to 12-01-11	Dr. P. Kumar, Director Dr. V.K. Chadha, Senior Epidemiologist Mr. Sanjay Singh, Field Investigator Mr. R. K. Srivastav, Field Investigator Mrs. Reena K. Consultant Microbiologist Mr. S. Anand, Consultant Microbiologist Mr. Manjunath G A, Lab. Technician	Delivered presidential address in the inaugural sessionof the conference Paper on Measuring Progress towards Millennium Development Goals for TB Control in India Paper on Disease Prevalence Survey in Nelamangala Taluk in Rural Bangalore Paper on Prevalence of Tuberculosis Infection among children residing in orphanages of Bangalore Paper on MDR TB Diagnosis for Rajasthan performed at NTI Chaired the technical session on Newer Diagnostic Techniques Paper on Comparison of Ziehl Neelson staining with Phenol

Sl. No.	Particulars	Date	Participants	Paper /poster presented
				Ammonium Sulphate Sedimentation method for diagnosis of Pulmonary Tuberculosis
	65th NATCON 2010 held at NIMHANS, Bangalore Contd...	10-01-11 to 12-01-11	Mrs. Mamatha H.G, Sr. Lab Technician Mrs. Shrilatha Sr. Lab Technician Ms. Anupurba Roy Chowdhury Sr. Lab Technician	Paper on Performance of RNTCP accredited Culture and DST laboratories under NTI Poster on Role of Panel Testing in Sputum Smear Microscopy Poster on Evaluation of External Quality Assessment of Sputum Smear Microscopy by NTI

Workshops

At NTI

Sl. No.	Particulars	Date	Resource person
1	Capacity building workshop on Operations Research & Protocol Development and Project Mentorship for professionals working with the RNTCP. Thirty three delegates from the states of Andhra Pradesh, Bihar, Chattisgarh, Delhi, Karnataka, Kerala, Maharashtra, Madhya Pradesh, Meghalaya and West Bengal participated in the workshop.	13-09-10 to 21-09-10	Faculty from The Union, CTD, NTI, CDC Atlanta and WHO participated as resource persons.
2	Workshop on Revision of Standard Operating Procedures	06-12-10 to 09-12-10	Dr. S.K. Tripathy, I/C Bacteriologist Mr. George Sebastian, Jr. Bacteriologist Mr. S.Anand, Consultant Microbiologist Reena K

Sl. No.	Particulars	Date	Resource person
			Consultant Microbiologist Representatives from all NRLs, Central TB Division and Dr. Ranjani Ramachandran, MO- WHO-SEARO

Outside NTI

Sl. No.	Particulars	Date	Resource person
1	Zonal Task Force workshop of East zone at Kolkata. Presentation on "Update on RNTCP, achievements and universal access to TB care" was made besides facilitating various groups.	26-08-10 to 27-08-10	Dr. Prahlad Kumar, Director
2	Zonal Task Force workshop of South zone at Chennai. Presentation on "TB-HIV - update" was made besides facilitating various groups.	02-09-10 to 03-09-10	Dr. Prahlad Kumar, Director
3	Zonal Task Force workshop of North-east zone at Guwahati, addressed the gathering and made presentation on "Universal access to TB - RNTCP" and facilitated various groups.	30-09-10 to 01-10-10	Dr. Prahlad Kumar, Director
4	Zonal Task Force workshop of West zone at Bhopal - chaired the scientific session and made presentation on "TB-HIV - update"; addressed the gathering and guided the group discussion. Had interaction with the Principal Secretary, Health & Medical Education, government of Madhya Pradesh regarding the support of NTI for development of IRL in the state of MP.	20-10-10 to 21-10-10	Dr. Prahlad Kumar, Director
5	Zonal Task Force workshop of North zone at Dehradun, for involvement of Medical Colleges in RNTCP, chaired the scientific	08-11-10 to 09-11-10	Dr. Prahlad Kumar, Director

Sl. No.	Particulars	Date	Resource person
	session, addressed the gathering and made presentation on "TB-HIV - update" and guided the group discussion.		
6	SAARC Regional workshop for development of regionally relevant research protocols on TB and HIV / AIDS for SAARC members states held at IIHMR, Jaipur.	20-12-10 to 24-12-10	Dr. Prahlad Kumar, Director
7	National Task Force Workshop for medical colleges held at Gandhi Medical College, Hyderabad - inaugurated the CME on 18 th , chaired the scientific sessions on 20 th and addressed the gathering.	18-01-11 to 20-01-11	Dr. Prahlad Kumar, Director

Meetings

At NTI

Sl. No.	Meetings/CME	Date	Resource person
1	Focus Group meeting on the analysis of Disease Prevalence Survey at 7 sites of India	21-04-10 to 23-04-10	Dr. V K Chadha, Senior Epidemiologist
2	Institution Ethics Committee meeting was held to discuss ethical issues related to proposed research studies.	19-11-10	Faculty of NTI
3	Institutional Animal Ethics Committee meeting was held to	16-07-10	Faculty of NTI
4	discuss the ethical issues for studies involving Animal Experimentation.	12-11-10	

Outside NTI

Sl. No.	Meetings	Date	Resource person
1	Technical working group meeting of WHO SEARO held at New Delhi	23-4-10	Dr. Prahlad Kumar, Director.
2	Meeting of the collaborating institutes for protocol development of CAT I relapse study, at LRS Institute, New Delhi	24-04-10	Dr. Prahlad Kumar, Director.

Sl. No.	Meetings	Date	Resource person
3	Regional meeting of the WHO Collaborating centres on communicable diseases held at New Delhi	03-06-10 to 04-06-10	Dr. Prahlad Kumar, Director.
4	Meeting of the Standing committee on Operations Research for RNTCP held at LRS Institute, New Delhi	25-08-10	Dr. Prahlad Kumar, Director
5.	Meeting with DDG (TB), CTD, New Delhi regarding participation in the ZTF workshops and support of NTI through presentations in the workshops as suggested by DDG.	21-09-10	Dr. Prahlad Kumar, Director
6	Meeting with DDG (TB), CTD, to appraise the activities being undertaken at NTI.	10-11-10	Dr. Prahlad Kumar, Director
7	Chaired the meeting to discuss & review RNTCP activities undertaken in the states of Jammu & Kashmir, Karnataka, Goa and Punjab held at LRS Institute, New Delhi	11-11-10	Dr. Prahlad Kumar, Director
8	National Consultative meeting on PPM to facilitate Nationwide scale up of quality assured diagnosis of drug resistant TB in India held at Taj Mahal Hotel, New Delhi and guided the discussion. Preliminary meeting was held on 17-12-10 with Dr Aleyamma Thomas, Director, TRC, Chennai and Dr Selvakumar, I/c EPS, TRC, Chennai in this regard	18-12-10	Dr. Prahlad Kumar, Director Dr. S.K. Tripathy, TB Specialist Mr. S. Anand, Consultant Microbiologist Ms. Hema Sundaram, Consultant Microbiologist Dr. Alpana Misra, Bacteriologist Mr. George Sebastian , Jr. Bacteriologist
9	RNTCP National Standing committee meeting on Operations Research held at Gandhi Medical College, Hyderabad	18-01-11	Dr. Prahlad Kumar, Director
10	19 th National Lab committee held at Gandhi Medical College, Hyderabad	19-01-11	Dr. Prahlad Kumar, Director
11	Meeting with STO, Rajasthan, Teachers of SMS Medical College, and DTO, Jaipur	21-02-11 to 24-02-11	Dr. Prahlad Kumar, Director

Sl. No.	Meetings	Date	Resource person
12	Advisory Committee meeting of the Indo-US workshop held at the office of Secretary Health Research and DG ICMR, New Delhi	16-03-11	Dr. Prahlad Kumar, Director
13	Meeting to review the work allotted to STS, STLS, Data Entry Operators, IEC Officer and part time Accountant working in the states held at Central TB Division, Dte. GHS, New Delhi,	17-03-11	Dr. Prahlad Kumar, Director
14	Meeting with WHO Consultant responsible for accreditation and EQA in Delhi regarding the next visit for pre-accreditation and accreditation of various labs under supervision of NTI.	20-03-11	Dr. Prahlad Kumar, Director

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.	A team from Foundation for Innovative New Diagnostics (FIND) headed by Sri C.N.Paramasivam	05-04-10	Discussion with regard to strengthening the lab capacity in RNTCP.
2.	Dr Ranjani Ramachandran, WHO SEARO and representatives from FIND	06-04-10	Discussion on strengthening the NRL capacities for detection and follow up of MDR TB cases.
3.	The Administration & Finance team lead by AO, WHO, India	15-04-10 to 16-04-10	Auditing the accounts related to WHO supported activities of the Institute and discussion was held with AO, WHO on the observations made by the auditing team
4.	Dr K.R. John, CMC, Vellore	05-06-10	Discuss the current status of ARTI survey in south zone undertaken in collaboration with CMC Vellore
5.	Dr C.N. Paramasivan, Head of Laboratory Support, FIND, Geneva and Dr Akos Somoskovi, Sr Scientist, FIND	18-06-10	Discussion on the partnership between FIND and CTD for strengthening the component of RNTCP and to discuss the development of NTI as an international centre of excellence for laboratory training.
6.	Dr Vishnuvardhan, The Union	21-06-10	Discussion regarding collaboration between NTI and The Union
8.	Dr Ranjani Ramachandran, WHO-SEARO	22-06-10	Discussion on various issues pertaining to strengthening the national reference laboratory at NTI.
9.	Mr Paul-Henri Ravier, Master Counselor to the French court of Public Accounts	29-07-10	To review the work done by Unit Aid and the use of funds collected in France through the air tax levy by beneficiary institutions at the behest of the French Parliament.
10.	Director, STDC, Karnataka	03-08-10	Discussion on the technical support for development of IRL in Bangalore, Karnataka.

Sl. No.	Name of visitor	Date	Details of visit
11.	Dr Thyagi, MGIMS, Wardha	04-08-10	Discussion With Director and Dr. V.K. Chadha, Sr. Epidemiologist on the development of common templates for preparation of DPS report
12.	Dr V.K. Arora, former Professor and Dean, Indian Institute of Health Management Research, Jaipur	04-08-10	Discussion on the RNTCP activities.
13.	Dr Srinath, Sr. Operations Research Fellow, The Union, New Delhi	09-08-10	Discussion regarding Protocol development workshop to be organized at NTI from 13 th - 22 nd September 2010.
14.	Dr Bamin Tada, State TB Officer, Arunachal Pradesh	16-08-10	Discussion on TB control programme in Arunachal Pradesh and technical support provided by NTI for running the programme in the state.
15.	Director, STDC, Karnataka along with Executive Engineer and a team from Department of Health, Government of Karnataka	01-09-10	Discussion on the establishment of IRL in STDC, Karnataka.
16.	Sri. Gopi, from WHO	06-09-10	Discussion on the status of ARTI survey in various zones of the country
17.	Dr Srinath, Sr. Operations Research Fellow, IUATLD, New Delhi	09-09-10	Discussion on the modalities for successful organization of OR workshop to be held at NTI in the month of September 2011.
18.	Dr C.N. Paramasivan, along with Dr Akos and Prof Knut Feldmann	10-09-10	Discussion on development of laboratory in India with the support of FIND, Geneva.
19.	Dr Patrik from CDC Atlanta and Dr Puneeth Divan from WHO, New Delhi	14-09-10	Discussion regarding collaboration between CDC Atlanta and NTI and various components of TB control.
20.	Dr Shashidar Buggi and a team from State Health Department	14-09-10	Discussion regarding organization of NATCON in Bangalore

Sl. No.	Name of visitor	Date	Details of visit
21.	Dr Matt Willims and Dr Smitha Banerjee from CDC Atlanta	15-09-10	Discussion on various components of TB control in India and the potential area of collaboration between the two Institutes.
22.	Port Health Officers of Kandla and Goa	24-09-10	Discussion regarding efforts on TB control being made in the health facilities in various parts of the country
23.	Director, STDC, Karnataka	14-10-10	Discussion about the cooperation extended by NTI for development of IRL, Karnataka and to provide support for human resource development for better management of IRL and TB control in Karnataka.
24.	Dr Kulshreshtra, I/c Human Resource Development in CTD, New Delhi,	19-10-10	Discussion about various training programmes in TB control being organized at NTI.
25.	Director, STDC, Karnataka; Dr Sangeetha and Microbiologist	29-10-10	Discussion on development of intermediate IRL in Karnataka..
26.	Dr Sharath, WHO Consultant, CTD,.	18-11-10	To discuss various protocols to be presented in the forthcoming IEC meeting
27	Director, STDC, STO, Karnataka and BBMP Coordinator	22-11-10	Discussion regarding support of NTI in strengthening RNTCP activity in Karnataka State TB Cell, IRL and BBMP
28	Sri. Gopi from WHO	25-11-10	Discussion on the report writing of ARTI and Disease Prevalence surveys
29.	Dr Ranjani Ramachandran, Lab nodal person from WHO-SEARO	25-11-10	Discussion on strengthening of network of accredited labs in the states, supervised by NTI.
30.	Dr Paramasivan and the team from FIND, Geneva	06-12-10 07-12-10 & 09-12-11	To discuss the progress on establishment of of ICELT facility at NTI, its operational aspect and plan of action from January to March 2011.
31.	Sri Avijith Chaudhri from WHO	09-12-10	Discussion on strengthening the electronic monitoring system and hand-held device for updating the monitoring mechanism of RNTCP.

Sl. No.	Name of visitor	Date	Details of visit
32.	Representatives from Biotron Healthcare (India) P. Ltd, Mumbai	13-12-10	To discuss the evaluation of GeneXpert machine for rapid detection of Rifampicin resistant mycobacterium tuberculosis.
33.	Dr D.C. Jain, Special DG (ME), DteGHS, New Delhi	28-12-10	Discussion on various activities being undertaken at NTI and visit to various sections of the Institute to take stock of the work being undertaken.
34.	Team from State TB Cell and STDC, Karnataka	03-01-11	Discussion on strengthening of EQA in Karnataka.
35.	Dr Shashidhar Buggi, Director SDS TRC & RGICD and Organizing secretary of NATCON 2010 -	03-01-11	Discussion regarding scientific programme of CME and NATCON conference to be held at Bangalore.
36	Dr Shashidhar Buggi, Director SDS TRC & RGICD and Organizing secretary of NATCON 2010	06-01-11	Final arrangements and the inauguration of CME and NATCON 2010
37.	Niels Brimnes, Associate Professor, Department of History and Area Studies, Aarhus University, Denmark	05-01-11	Discussion regarding history of TB control in India.
38.	Dr Paramasivan, FIND, Geneva, regarding	17-01-11	Regarding arrangements for inauguration of ICELT at NTI.

Sl. No.	Name of visitor	Date	Details of visit
39.	Dr. Gerald Muller, Chairman, Dr. Bernard Mach, Board Member Dr. Mphu Rumatlapeng, Hon'le Health Minister, Ministry of Health & Social Welfare LESOTHO & Board Member, Dr. Giorgio Roschingo CEO, Dr. Moteetee Mphollai Museilla, DG, Ministry of Health & Social Welfare LESOTHO, Dr. C.N. Paramasivan, Head of TB Laboratory Support, from FIND Geneva and Dr. Blessina Kumar, Vice Chairman, STOP-TB partnership, India	20-01-11	On the occasion of Inauguration of ICELT at NTI Bangalore.
40.	Team from FIND, Geneva consisting of Dr Paramasivan, Dr Evan Lee and Dr Christopher	21-01-11	Discussion on the Agenda for the training and inaugural session of LPA training being organised at ICELT, NTI with the support of FIND, Geneva.
41.	Team from FIND, Geneva consisting of Dr Paramasivan, Dr Akos Somoskovi and Dr Christopher,	03-02-11	Discussion on agenda for the proposed training programmes by ICELT, NTI, with the support of FIND, Geneva.
42.	Director, STDC, Karnataka	08-02-11	Discussion on the status of civil work and other development for creating IRL in Bangalore.
43.	Dr Rohit Sarin from LRS Institute, New Delhi	09-02-11 to 11-02-11	Discussion with Director, and Dr. V.K. Chadha, Sr. Epidemiologist, pertaining to the data of ARTI East zone, which was undertaken by LRS Institute in collaboration with NTI, Bangalore.
44	Dr. Anil, Director, STDC, Karnataka	23-03-11	Discussion on the commemoration of world TB day being organized in the state of Karnataka
45	Dr Narang, Dr D K Mendiratta from MGIMS, Wardha; and Dr Chopra from New Delhi TB Centre, New Delhi	28-03-11 to 29-03-11	Discussion with the Director and Dr. V.K. Chadha, Sr. Epidemiologist regarding finalization of ARTI reports pertaining to their zones.

Sl. No.	Name of visitor	Date	Details of visit
46	Dr V.G. Rao from ICMR, Jabalpur	29-03-11 to 30-03-11	Discussion with Director, I/C Statistics & Monitoring Section, and staff regarding data analysis of the prevalence survey carried out by Regional Tribal Research Centre, Jabalpur.

12. EVENTS CELEBRATED / ORGANIZED

- 15th August 2010 : **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 neighbouring 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.
- 6th -14th September 2010 **Hindi week** was observed from 6th - 14th September 2010 and Hindi Divas was celebrated on 14th September 2010. Smt. Bindu, was invited as the chief guest of the Hindi Day. As part of the observance of the Hindi week, Anthakashri, Hindi translation, Letter writing, Essay, Quiz competition, Ek Sham Bachhonke Naam (cultural programme for the children of NTI staff) and Hindi Jokes / Songs were organized. Prizes were distributed to the winners of the events
- 26th January 2011 **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 2011 **World TB Day** was observed in the Institute. In commemoration of the world TB Day, following technical presentations were made:
- a. Achievement of NTI in HRD activities during 2010-11 by Dr.Preetish S. Vaidyanathan.
 - b. Robert-Koch - A Tribute by Mrs. Hema Sundaram
 - c. MDR/XDR TB Diagnosis & Newer Laboratory tools by Mrs. Reena K
 - d. WC Roentgen & Chest X-ray by Dr. N. Somashekar
 - e. Summary of the progress achieved in the Disease Prevalence Survey in Nelamangala and

Repeat ARTI Survey by the staff of
Epidemiology and Statistics Section.

13. FINANCIAL OUTLAY & EXPENDITURE

The Plan & Non-plan budget allocation and expenditure incurred for the financial years 2008-09, 2009-10 & 2010-11 are furnished below.

PLAN		(Rs. in lakhs)
Year	Budget allocated (Rs.)	Expenditure (Rs.)
2008-2009	195.00	192.74
2009-2010	195.00	112.47
2010-2011	195.00	172.21

NON PLAN		(Rs. in Lakhs)
Year	Budget allocated (Rs.)	Expenditure (Rs.)
2008-2009	566.00	549.01
2009-2010	639.50	636.23
2010-2011	618.00	615.37

Revenue generated by the Institute for the year 2010-11 was credited to the consolidated fund of Government of India as given in the table below.

REVENUE GENERATED

Year	Amount (Rs.)
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2010-2011	4,01,529
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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:
 - i. Routine Administrative matters. This includes holding of DPC meetings for promotion, confirmation and service related matters like grant of MACP etc.
 - ii. Provision of manpower to various sections.
 - i. Upkeep of office campus including buildings, hostel facilities etc. .
 - ii. 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.	Sri.A.Ranganatham	Lab.Technician	21-04-10
2.	Smt.V.Mamatha	Lab.Technician	22-04-10
3.	Sri.R.Kumaresh	Draughtsman	26-04-10
4.	Sri.G.Puttaswamy	Health Visitor	26-04-10
5.	Sri.George Sebastian	Jr.Bacteriologist	06-08-10
Transferred out			
1.	Mr. N. Suseendra Babu, Statistical Officer was transferred to Regional Office of Health & Family Welfare, Bangalore on promotion as Senior Statistical Officer w.e.f. 29-12-2010.		

- iii. Processing of legal issues pertaining to service matters coming under the purview of Central Administrative Tribunals and higher institutions.
- iv. Correspondence with Directorate General of Health Services (DGHS) and other agencies on administrative matters.

Training of officers / officials in administrative matters

Sl. No.	Details of Training	Duration	Venue	Name of the officer
1	Empanelment of hospital under CGHS	22-09-10	Kendriya Sadan, Bangalore	Smt.Divya.E., UDC and Smt.S.L.Nagarathna, UDC
2.	Office Management at Parsam Institute of Statutory Rules	07-10-10 to 09-10-10	Parsam Institute of Statutory Rules, Bangalore	Sri.P.M.Sheshadri,UD C and Sri.K.Mohan, UDC
3.	Right to Information Act 2005	24-11-10 to 26-11-10	Parsam Institute of Statutory Rules, Bangalore	Shri. Sree Sayee Prasad, Administrative Officer

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 needs 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. 1,10,00,000/- under the head of account PLAN-Capital- Major works and Rs. 35,00,000/- under machinery and equipment was allocated to the Institute during the financial year 2010-11 for carrying out maintenance and new works. Of which, an amount of Rs.1,04,50,000/- and Rs. 25,43,000/- were spent respectively. The following Civil, Electrical and Horticultural works were executed during the period under report in addition to the routine repairs & Maintenance works.

Civil & Horticultural works

1. Renovation and repairing work of existing Auditorium (Kalanikethan).
2. Furnishing and wall paneling to the existing Auditorium (Kalanikethan).
3. Horticulture work of landscaping and relaying hedge beds.
4. Special repair to external wall with patch plastering and exterior painting of old quarters.
5. Construction of surface drain along the western side of compound wall of the campus and changing the sanitary pipes outside the quarters.
6. Construction of New manholes and sewerage pipes for old quarters No.1 to 7.
7. Alteration / Civil works in Bacteriology section.
8. False ceiling, Vinyl flooring work for LPA Rooms of Bacteriology section and Venetian blind for computer server room.
9. Aluminum Extrusion work for Bacteriology section and Statistical section.
10. Distemper work in the 1st and 2nd floor of P.V.Benjamin block.

Electrical works

1. Renovation and repairing work of existing Auditorium (Kalanikethan).
2. Networking of various computers in Benjamin Block.
3. Operation and maintenance of specialized E&M services.

In additional to the above, the facilities available at AMRU were upgraded to accommodate a new International Centre for Excellence in Laboratory Training (ICELT) with funding from Foundation for Innovative New Diagnostics (FIND).

Acknowledgements

The Director acknowledges the efforts of the Annual Report preparation committee under the able guidance of Dr. K.M. Shivakuamr, Additional Director. Acknowledgement is also due to Dr. Preetish S. Vaidyanathan, Mrs. Hema Sundaram, Consultant Microbiologist and Mr. R. Jitendra, Computer in compiling, editing & organizing the publication of this report. The untiring secretarial assistance provided by Mr. R. Ravi Stenographer Gr.II also deserve deep appreciation.