

# **NATIONAL TUBERCULOSIS INSTITUTE BANGALORE**

## **ANNUAL REPORT 2012-13**



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

**NATIONAL TUBERCULOSIS INSTITUTE**  
**WHO Collaborating Centre**  
**For**  
**Tuberculosis Research & Training**

**ANNUAL REPORT**  
**2012 - 13**



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**(Directorate General of Health Services)**  
**'Avalon', No.8, Bellary Road, Bangalore-560 003**  
**INDIA**

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## **LIST OF ABBREVIATIONS**

|         |  |
|---------|--|
| AIIMS   | All India Institute of Medical Sciences        |
| ARTI    | Annual Risk of Tuberculous Infection           |
| BCG     | Bacillus Calmette Guerin                       |
| BBMP    | Bruhat Bangalore Mahanagara Palika             |
| CMO     | Chief Medical Officer                          |
| CPWD    | Central Public Works Department                |
| CTD     | Central Tuberculosis Division                  |
| 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                    |
| DTO     | District Tuberculosis Officer                  |
| EQA     | External Quality Assurance                     |
| HIV     | Human Immuno deficiency Virus                  |
| HRD     | Human Resource Development                     |
| IRL     | Intermediate Reference Laboratory              |
| JALMA   | Japanese Leprosy Mission for Asia              |
| LPA     | Line Probe Assay                               |
| MDR     | Multi Drug Resistance                          |
| M.TB    | <i>Mycobacterium tuberculosis</i>              |
| NIRT    | National Institute of Research in Tuberculosis |
| NRL     | National Reference Laboratory                  |
| NTI     | National Tuberculosis Institute                |

|       |  |
|-------|--|
| NTP   | National Tuberculosis Programme                      |
| NFSG  | Non-Functional Selection Grade                       |
| OSE   | On-Site Evaluation                                   |
| PPM   | Public Private Mix                                   |
| PPs   | Private Practitioners                                |
| RNTCP | Revised National Tuberculosis Control Programme      |
| SAARC | South Asian Association for Regional Co-operation    |
| 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                    |
| TUs   | Tuberculosis Units                                   |
| WHO   | World Health Organization                            |

# FOREWORD

It gives me immense pleasure to present the Annual report for the year 2012-13. After half a century of existence, the Sections of the Institute were re-engineered into Divisions and Units in the year 2011. This landmark event was expected to enhance the scope of contribution of the Institute towards various aspects of TB control. The six Divisions of the Institute are- Human Resources Development and Documentation, Laboratory, Epidemiology & Research, Monitoring & Evaluation, Communication & Sociology, and Administration. This report highlights the major activities undertaken by the Institute during the year of report and has a blend of both administrative and technical activities.

The Technical Activities carried out at NTI include building the capacity of human resources for effective implementation of RNTCP, and also to undertake Operational Research to strengthen the roll out of services under RNTCP. 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. Additionally, the institute also provides technical support to WHO, SAARC, The Union and other Partners of Global TB Control. Being a technical arm of the Central TB Division, Director NTI is the member of most National Advisory Committees and TWG on RNTCP.

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 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 in several facets of Tuberculosis control. Induction training in RNTCP for programme managers, Training in TB/HIV, Training of Master trainers in Epi- Centre, Training on procurement & drug logistics management, and several Laboratory based training programmes were some of the important courses held at NTI during the year. The ICELT at NTI imparts trainings on WHO endorsed Newer Diagnostic Techniques for TB. In order to establish a National Database on Tuberculosis an Open Access Repository of abstracts of published scientific papers from all major national institutes has been launched under the TB Net project. The Institute is supporting the efforts of Central TB Division to implement an electronic case based recording and reporting system to monitor the programme. Also, the task of establishing a data base of trained manpower under RNTCP to support the Human Resource needs is under consideration. The Institute also provides one-day sensitization on TB Control Programme to medical and paramedical students pursuing life sciences and nursing courses.

As per the decision taken in the meeting of the officers of the Central TB Division and Directors of National Institutes in the month of January 2013, NTI has been assigned to play a lead role in Human Resources Development for RNTCP in the country and efforts are underway to fulfill this role.

Operational research is one of the prime functions of the institute. The studies undertaken during the period under report were, *Challenges in implementation of diagnostic algorithm for patients having symptoms suggestive of pulmonary TB with Smear Negative report on initial sputum examination, Inventory study to find out 'Under reporting' of TB cases in Tumkur district of Karnataka state, Evaluation of diagnostic algorithm among registered new Smear Negative PTB patients under RNTCP in*

*Karnataka state, Role of additional screening by chest X-ray among persons with symptoms suggestive of Pulmonary TB and smear Negative on initial sputum examination and Effectiveness of community based observation of treatment for tuberculosis in Bangalore city in 2010-11.* Several National level research protocols on tuberculosis were also drafted during the period. An Operational Research workshop to augment the capacity of programme workers to undertake operations research was conducted 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 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. NTI supervises and monitors the quality sputum smear microscopy network of nine states. The functions of NRL comprises of training laboratory personnel and accreditation of state level Intermediate Reference Laboratories ( IRLs ) , Medical college and other private laboratories for the culture and Drug Sensitivity testing to detect Multi – Drug Resistant Tuberculosis (MDR-TB) apart from supporting Drug Resistant Surveillance (DRS) and DOTS Plus at the state level. The NRL is also responsible for Human Resource Development and capacity building of IRLs for the management of MDR-TB. Also, a training course in Culture & DST of *Mycobacterium tuberculosis* was organized in collaboration with SAARC TB & HIV AIDS Centre, Nepal.

Participation of faculty and Technical staff in various meetings, training programmes, seminars, internal evaluation visits, 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 and the staff position of the institute. The role of Administrative division in ensuring the efficient execution of technical activities cannot be overemphasized and their contribution finds a mention in the report. The five units under this Division are - Establishment, Accounts, Hostel, Stores and Transport. An important achievement has been the renovation of the auditorium (Kalanikethan).

Amongst the visitors to the Institute were luminaries from the Government of India of the stature of Dr P K Pradhan, Union Secretary for Health & Family Welfare, Dr Jagdish Prasad, Director General Health Services and Mr. R S Shukla, Joint Secretary PH.

I acknowledge the co-operation, hard work and diligence of all the members of the NTI family and I solicit the same degree of motivation and dedication from all in times to come.

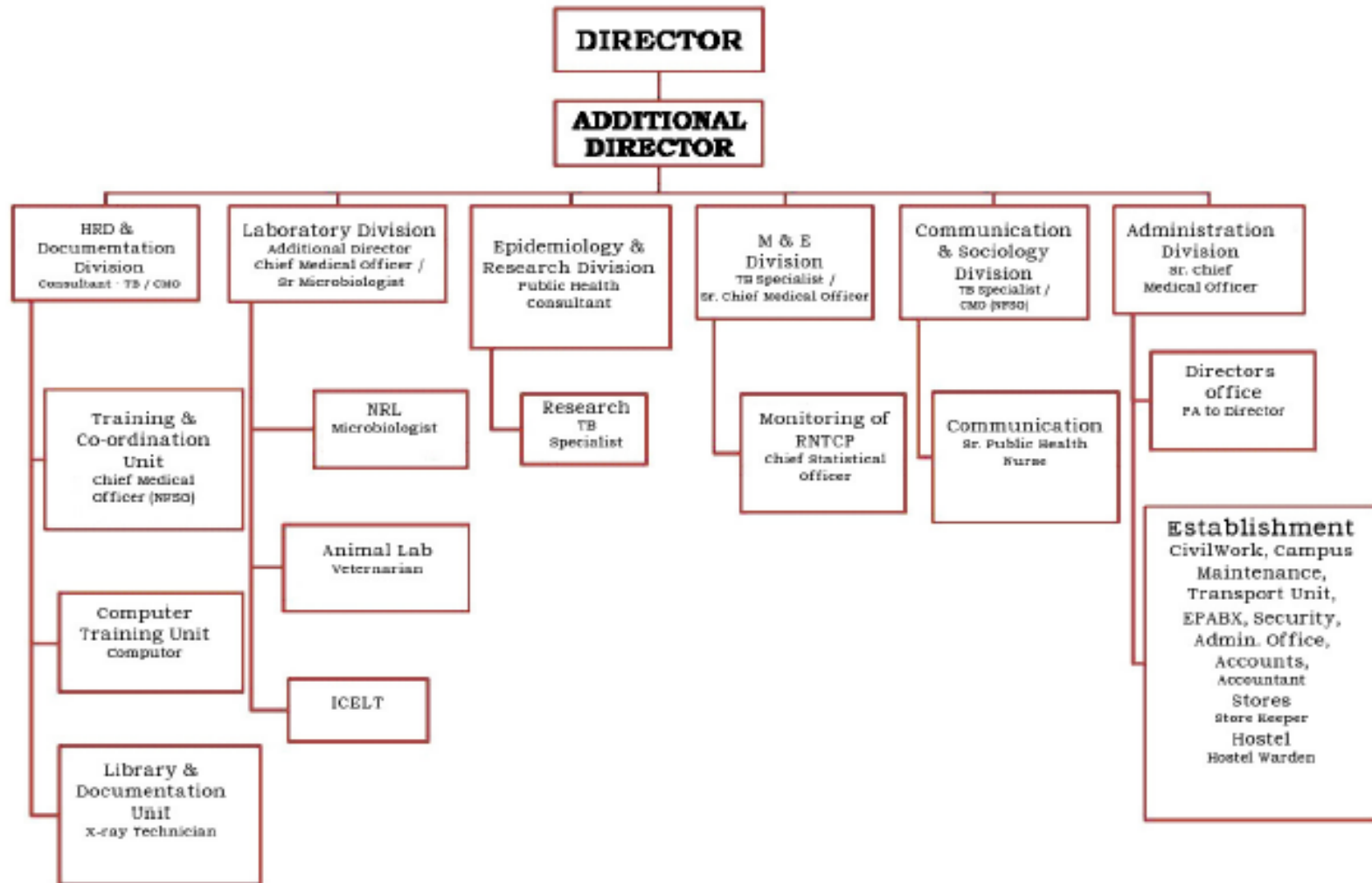
I also express my gratitude to the Director General Health Services and the Central TB Division for their continuous guidance, support and encouragement.

Dr. Prahlad Kumar  
Director

Dated:  
Place: Bangalore



# ORGANOGRAM



# **1. HUMAN RESOURCE DEVELOPMENT & DOCUMENTATION**

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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 three units under this Division are Training and Coordination Unit, Computer Training unit and Library & Documentation Unit. As per the decision taken in the meeting of the officers of the Central TB Division and Directors of National Institutes in the month of January 2013, NTI has been assigned to play a lead role in Human Resources Development for RNTCP in the country which includes overall training need assessment, co-ordination and conducting training courses, post training evaluation, and strengthening of State TB Training and Demonstration Centers.

## ***A. Training and Coordination Unit***

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 quality assured diagnosis of TB, management of TB-HIV co-infection, 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). 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 Unit works in tandem with the hostel, stores and transport units of the institute to facilitate smooth organization of training activities. Several training courses and workshops on all facets of TB control were conducted during the year to cater to the ever-increasing demand of trained manpower, the details of which are briefly appended below.

**1. Revised National Tuberculosis Control Programme (RNTCP) Modular Training**

| <b>Sl. No.</b> | <b>Category of personnel</b>  | <b>Period</b>                                       | <b>No. of Participants</b> |
|----------------|---|---|----------------------------|
| 1.             | State and District level programme Managers and faculty from Medical colleges | 16 <sup>th</sup> 28 <sup>th</sup><br>July 2012      | 31                         |
| 2.             |   | 27 <sup>th</sup> Aug to<br>8 <sup>th</sup> Sep 2012 | 28                         |
| 3.             |   | 8 <sup>th</sup> to 20 <sup>th</sup><br>Oct 2012     | 27                         |
| 4.             |   | 4 <sup>th</sup> to 16 <sup>th</sup><br>Feb 2013     | 33                         |

**2. Capacity Building Workshop of State TB/HIV Coordinators**

| <b>Sl. No.</b> | <b>Category of personnel</b> | <b>Period</b>                                      | <b>No. of Participants</b> |
|----------------|------------------------------|--|----------------------------|
| 1.             | State TB-HIV coordinators    | 5 <sup>th</sup> & 6 <sup>th</sup> November<br>2012 | 16                         |

**3. Training on Procurement & Drug Logistic Management**

| <b>Sl. No.</b> | <b>Category of personnel</b>                | <b>Period</b>                                    | <b>No. of Participants</b> |
|----------------|---|--|----------------------------|
| 1              | State and district level programme managers | 8 <sup>th</sup> to 11 <sup>th</sup><br>May 2012  | 36                         |
| 2              |   | 03 <sup>rd</sup> – 6 <sup>th</sup><br>July 2012  | 32                         |
| 3              |   | 11 <sup>th</sup> 14 <sup>th</sup><br>Sep 2012    | 34                         |
| 4              |   | 6 <sup>th</sup> to 8 <sup>th</sup> Nov -<br>2012 | 12                         |

**4. Training in External Quality Assessment**

| <b>Sl. No.</b> | <b>Category of personnel</b>                | <b>Period</b>                                    | <b>No. of Participants</b> |
|----------------|---|--|----------------------------|
| 1              | State and District level programme Managers | 9 <sup>th</sup> to 13 <sup>th</sup><br>July 2012 | 17                         |
| 2              |   | 19 <sup>th</sup> 23 <sup>rd</sup><br>Nov 2012    | 15                         |
| 3              |   | 18 <sup>th</sup> – 22 <sup>nd</sup><br>Mar 2013  | 11                         |

### 5. Training in Culture (solid) and Drug Sensitivity Testing

| Sl. No. | Category of personnel            | Period  | No. of Participants |
|---------|----------------------------------|---|---------------------|
| 1       | Microbiologist and LTs from IRLs | 13 <sup>th</sup> – 23 <sup>rd</sup><br>Aug 2012 | 7                   |
| 2       |                                  | 3 <sup>rd</sup> – 13 <sup>th</sup><br>Dec 2012  | 7                   |
| 3       |                                  | 21 <sup>st</sup> – 31 <sup>st</sup><br>Jan 2013 | 13                  |
| 4       |                                  | 18 <sup>th</sup> – 28 <sup>th</sup><br>Feb 2013 | 07                  |

### 6. Training on LED Fluorescent Microscopy

| Sl. No. | Category of personnel                      | Period   | No. of Participants |
|---------|--|--|---------------------|
| 1.      | Laboratory Technicians                     | 2 <sup>nd</sup> to 4 <sup>th</sup><br>Apr 2012       | 17                  |
| 2.      |  | 09 <sup>th</sup> – 11<br>Apr 2012                    | 15                  |
| 3.      |  | 16 <sup>th</sup> – 18 <sup>th</sup><br>Apr 2012      | 16                  |
| 4       |  | 23 <sup>rd</sup> & 25 <sup>th</sup><br>Apr 2012      | 16                  |
| 5       |  | 30 <sup>th</sup> Apr to<br>2 <sup>nd</sup> May 2012  | 15                  |
| 1       | Senior Tuberculosis Laboratory Supervisors | 2 <sup>nd</sup> to 5 <sup>th</sup><br>Apr 2012       | 15                  |
| 2       |  | 9 <sup>th</sup> to 12 <sup>th</sup><br>Apr 2012      | 16                  |
| 3       |  | 16 <sup>th</sup> to 19 <sup>th</sup><br>Apr 2012     | 15                  |
| 4       |  | 23 <sup>rd</sup> to 26 <sup>th</sup><br>Apr 2012     | 13                  |
| 5       |  | 30 <sup>th</sup> Apr to<br>03 <sup>rd</sup> May 2012 | 15                  |

### 7. Training in Line Probe Assay for Microbiologists & Laboratory Technicians

| Sl. No. | Category of personnel                      | Period   | No. of Participants |
|---------|--|--|---------------------|
| 1       | Laboratory technicians and Microbiologists | 1 <sup>st</sup> – 6 <sup>th</sup><br>June 2012 | 05                  |

### 8. Second Line Drug Susceptibility Testing

| Sl. No. | Category of personnel  | Period  | No. of Participants |
|---------|--|---|---------------------|
| 1       | Microbiologists, Laboratory Technicians, Assistant Professors and Technical Officers | 4 <sup>th</sup> – 8 <sup>th</sup><br>March 2013 | 06                  |

### 9. In House Training on Gene Xpert

| Sl. No | Category of personnel      | Period                    |
|--------|----------------------------|---------------------------|
| 1      | All Laboratory Technicians | 17 <sup>th</sup> Sep 2012 |

### 10. Collaborative training activities with

- a. **SAARC TB & HIV/AIDS Center** SAARC Regional Training of Trainers for Microbiologists on Culture and DST of M.tuberculosis

| Sl. No. | Category of personnel | Period  | No. of Participants |
|---------|-----------------------|---|---------------------|
| 1       | Microbiologists       | 23 <sup>rd</sup> – 29 <sup>th</sup> May<br>2012 | 15                  |

- b. **NTP Nepal** *Orientation Programme for Para-medical staff*

| Sl. No. | Category of personnel              | Duration                                    | No. of Participants |
|---------|------------------------------------|---|---------------------|
| 1       | Para-medical staff from NTP, Nepal | 9 <sup>th</sup> - 13 <sup>th</sup> Jul 2012 | 04                  |

- c. **CTD-NTI- CDC- The Union Operations Research Capacity Building workshop and project mentorship for professionals working with the RNTCP**

| Sl. No. | Category of personnel                              | Duration   | No. of Participants |
|---------|--|--|---------------------|
| 1       | Officials from CTD, NTI, The Union and CDC-Atlanta | 11 <sup>th</sup> to 15 <sup>th</sup> Mar<br>2013 | 16                  |

## 11. International Center of Excellence for Laboratory Training (ICELT)

International Center of Excellence for Laboratory Training, supported by FIND, RNTCP and UNITAID, was started in NTI Bangalore with the mission “to support the scaling up of laboratory capacity building in India and Asia by providing hands-on training courses in the diagnosis and monitoring of major infectious diseases such as TB, HIV/AIDS and Malaria”. Presently, ICELT is imparting trainings on WHO endorsed Newer Diagnostic Techniques for TB. In addition to Line Probe Assay and Liquid Culture, this year training was also conducted on GeneXpert MTB/RIF, the latest technique in TB diagnostic armamentarium. GeneXpert MTB/RIF is a cartridge based nucleic acid amplification test (CB NAAT) that can diagnose TB and Rifampicin resistance in less than two hours.

The training activities held in ICELT during the year are given below:

| <b>Name of training</b>   | <b>Participating laboratories</b>   | <b>Date</b>  | <b>Number of participants</b> |
|---|---|--|-------------------------------|
| Line Probe Assay using HAIN GenoType MTBDRplus version 2<br><br>Duration: 5days | Microbiologist from NIRT Chennai and LTs from KIMS Hubli, IRL Chennai and IRL Bangalore         | 09 <sup>th</sup> – 13 <sup>th</sup><br>July 2012   | 4                             |
|   | Microbiologists from KGMC Lucknow and IRL Karnal, TO from IRL Bhopal and Sr. LT from IRL Patna  | 16 <sup>th</sup> – 20 <sup>th</sup><br>July 2012   | 4                             |
|   | Microbiologists from IRL Dharampur, PGI Chandigarh, C&DST Lab Vizag and Regional Microbiologist | 24 <sup>th</sup> to 28 <sup>th</sup><br>Sept 2012  | 4                             |
|   | Microbiologists from IRL Hyderabad, IRL Bangalore and IRL Patiala and TO from KIMS Hubli        | 7 <sup>th</sup> – 11 <sup>th</sup><br>January 2013 | 4                             |

| <b>Name of training</b>   | <b>Participating laboratories</b>  | <b>Date</b>  | <b>Number of participants</b> |
|---|--|--|-------------------------------|
| Liquid Culture and DST Training using Bactec MGIT 960<br><br>Duration: 10days | Microbiologist from NIRT Chennai, Sr. Specialist from IRL Bangalore, TO from IRL Pune and LT from AIIMS New Delhi  | 27 <sup>th</sup> Aug to<br>07 <sup>th</sup> Sep<br>2012    | 4                             |
|   | Microbiologists from IRL Indore, IRL Ajmer and IRL Guwahati  | 10 <sup>th</sup> -21 <sup>st</sup><br>Sep<br>2012          | 3                             |
|   | Microbiologists from IRL Chennai and IRL Puducherry and TO from New Delhi TB Center, Delhi   | 08 <sup>th</sup> - 19 <sup>th</sup><br>Oct<br>2012         | 3                             |
|   | Microbiologists from IRL Patna and IRL Bangalore   | 29 <sup>th</sup> Oct<br><br>to<br>9 <sup>th</sup> Nov 2012 | 2                             |
|   | Microbiologist from IRL Karnal, TO from C&DST Lab Lucknow and Sr. LT from PGI Chandigarh   | 11 <sup>th</sup> - 22 <sup>nd</sup><br>Feb 2013            | 3                             |
|   | Microbiologists from IRL Cuttack and C&DST Lab Vizag and Regional Microbiologist   | 11 <sup>th</sup> - 31 <sup>st</sup><br>March 2013          | 3                             |
| CB NAAT training using Cepheid Gene Xpert MTB/RIF<br><br>Duration: 1day       | Microbiologists from IRL Bangalore, IRL Hyderabad, IRL Chennai, C&DST Lab Lucknow and ICELT; Site coordinator from Pavagada and Researcher from University of Varanasi | 8 <sup>th</sup> -10-12                                     | 7                             |

## **Other technical activities conducted by the officers of the Training and co-ordination unit**

### ***I Research papers reviewed:***

The following editorials received from IJT were reviewed by Dr. Preetish S. Vaidyanathan

1. Tackling extensively drug resistant tuberculosis (XDR-TB)
2. 'What new knowledge we gain through IJT in 2012
3. 'Total Drug Resistant (TDR-TB)-A fact or myth?

### ***II. Administrative activities***

1. Dr. Preetish S Vaidyanathan discharged duties as Chairman of Purchase Committee
2. Dr. Preetish S Vaidyanathan was Committee member in selection committee RNTCP in BBMP, Bangalore held during November 2012 for appointing MOs, STS, STLS and TB-HV on contractual basis
3. Dr Preetish S Vaidyanathan discharged his duties as Nodal officer at NTI for development of Management Information System for the officers of Central Health services.



## ***B. Computer Training Unit***

### **The Computer Training Unit supports the following major areas:**

1. Facilitate in organizing need based training with relevance to programme and customized application related trainings.
2. To support Information and Communication Technology (ICT) Initiatives in the context of the Programme.
3. To support Data Management and Statistical Analysis of research studies and other MIS.
4. To cater to the maintenance of website / upkeep / up-gradation of IT infrastructure of the Institute.

### **I. ICT Related Project Initiatives:**

#### **a. TB-Net Project - Establishing a National Database on Tuberculosis – Phase II:**

The Phase II of the TB-Net project was initiated upon obtaining approval from the Department of Biotechnology, Ministry of Science and Technology, Government of India. An Open Access Repository of abstracts of published scientific papers from all major national institutes has been launched vide URL <http://tbresearch.ntiindia.org.in>. It attempts to collect, preserve and disseminate the intellectual output of these Institutes available in peer-reviewed journals. Another site <http://ntiresearch.ntiindia.org.in> facilitates archival of research protocols and other documents which are not published and are intellectual property of NTI Bangalore.

#### **b. HR Training Data Base**

There is a felt need for an efficient mechanism using ICT intervention to maintain a national database of trained manpower. A conceptual presentation of the HR database, proposal with budget requirement has been submitted for approval.

#### **c. Model DOTS District**

Currently efforts are underway to develop a Model DOTS district in Kolar which would incorporate all components outlined in the National Strategic Plan for TB control (2012-17) including Case based electronic recording & reporting

## II. Data Management, Statistical Analysis of Research Studies and MIS activities:

The I/c Computer Training Unit has co-authored in the following research papers:

- i. Chadha, V. K. and Sarin, R. and Narang, P. and John, K. R. and Chopra, K. K. and Jitendra, R. and Mendiratta, D. K. and Vohra, V. and Shashidhara, A. N. and Muniraj, G. and Gopi, P. G. and Kumar, P. (2013); **Trends in the annual risk of tuberculous infection in India**: [Int J Tuberc Lung Dis](#). 2013 Mar;17(3):312-9. doi: 10.5588/ijtld.12.0330. Epub 2013 Jan 14.
- ii. Chadha, V. K. and Kumar, P. and Anjinappa, Sharada M. and Sanjay Singh, and Somashekar Narasimhaiah, and Joshi , M. V. and Gupta, J. and Lakshminarayana, and Jitendra, R. and Magesh, V. and Suganthi, P. and Suseendra Babu, and Hemalatha Krishna, (2012); **Prevalence of Pulmonary Tuberculosis among Adults in a Rural Sub-District of South India**. PLoS ONE 7(8): e42625. doi:10.1371/journal.pone.0042625
- iii. Chopra, K. and Chadha, V. K. and Ramachandra, J. and Aggarwal, N. (2012): **Trends in Annual Risk Of Tuberculous Infection in North India**; Plos ONE, 7 (12) : e51854. doi:10.1371/journal.pone.0051854.
- iv. Rao, V. G. and Jyothi Bhat, and Rajiv Yadav, and Gopi Punnathanathu Gopalan, and Selvakumar Nagamiah, N and Manoj Kumar Bhondeley, and Anjinappa, Sharada M. and Jitendra, R. and Chadha, V. K. and Fraser, W. (2012); **Prevalence of Pulmonary Tuberculosis - A Baseline Survey In Central India** : PLoS ONE, August 2012, 7(8), e43225, doi:10.1371/journal.pone.0043225
- v. Conducted the statistical analysis of study titled “**Pathogenicity of drug resistant isolates of M.Tuberculosis in guinea pig animal model**”.

**III. National Drug Resistance Survey:** The Computer Training Unit has been entrusted with the responsibility of implementing the data management module for the forthcoming National Drug Resistance Survey. The Data management module for the survey would take the benefits of IT advancements like bar coding of DR Sputum samples to streamline the receipt of samples from over 120 Tuberculosis Units across the nation at NTI. The development of the said module has been initiated and currently under way

## IV. IT Support Services:

1. The unit also handles matters pertaining to the Annual Maintenance Contract of Computers and peripherals with a full time resident engineer and AMC of UPS.
2. Technical inputs pertaining to Internet/ Server / Softwares / Audio Visual Equipments and infrastructure expansion are entrusted to the unit.

3. Updated and installed the latest version R.21 of the mailing server. Feasibility for conversion of Broadband to Internet lease line with ISP providers is underway.
4. Periodic technical server configuration / proxy server configuration for Internet services & maintenance there off are being under taken regularly.
5. Involved in providing technical Inputs and discussions regarding furnishing of Kalaniketan Auditorium with Audio / Visual presentation and networking requirements with I/c Estt and AE Electrical CPWD.

### ***C.Library and Information Services & Documentation***

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. 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. 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 preparation of NTI Annual report. Assistance in printing was provided to the different divisions of the Institute.

#### **Documents / Articles published:**

1. NTI annual report for the year 2011-12
2. NTI Bulletin Vol.44/3 & 4, 45/1& 4, 46/1&4, hosted onto NTI website.

## **2. 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.

### **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 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.

An EQA-OSE visit to IRL Nagpur, Maharashtra, was undertaken between 14-03-13 to 16-03-13 by a team comprising of Mrs. Reena K and Ms. Anupurba Roy Chowdhury in the year, March 2012 – 2013.

### **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.

A pre-assessment visit was undertaken for the Solid Culture & DST (LJ Medium) laboratory at the Medical College, Jammu, between 08-05-12 to 10-05-12, by Dr. S Anand, Consultant Microbiologist, NRL, NTI.

## **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 onsite – 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. The details of the accreditation visits made are as under:

### **State Laboratories accredited for LPA**

NTI was accredited for LPA on 8<sup>th</sup> November 2011 by the CTD. Subsequently, NTI was entrusted with the responsibility of Proficiency Testing of the state laboratories for accreditation of LPA activities. During the period under report, proficiency testing for LPA activities for accreditation was undertaken for the following state laboratories.

### **Proficiency Testing of accredited laboratories in Solid Culture**

Annual proficiency testing was conducted for the following thirteen labs by sending panel of 20 cultures in March 2013.

1. IRL Cuttack, Odisha
2. IRL Kolkata, West Bengal
3. IRL Ajmer, Rajasthan
4. IRL Nagpur, Maharashtra
5. IRL Ranchi, Jharkhand
6. JJ Medical college Mumbai, Maharashtra
7. Bhopal Medical Hospital & Research Centre, Madhya Pradesh
8. Choithram Hospital & Research Centre, Indore, Madhya Pradesh
9. SMS Medical College, Jaipur.
10. IRL Indore, Madhya Pradesh
11. Mahatma Gandhi Institute of Medical Sciences, Sewagram, Wardha, Maharashtra
12. IRL Pune, Maharashtra
13. RMRCT Jabalpur, Madhya Pradesh

### **Proficiency Testing of accredited laboratories in Liquid Culture**

Annual proficiency testing was conducted for the following four labs by sending panel of 20 cultures in March 2013.

1. SMS Medical College, Jaipur.
2. P.D. Hinduja Hospital Mumbai, Maharashtra
3. Super Religare Laboratories Ltd, Mumbai, Maharashtra
4. IRL Nagpur, Maharashtra

### **External Quality Assurance for Mycobacterial Culture and DST**

| <b>Sl. No.</b> | <b>Proficiency tested for</b>                     | <b>Month of Reporting</b> | <b>Month of passing</b> | <b>Testing agency</b>  | <b>Methods / Media Used</b> | <b>Proficiency Result</b> |
|----------------|---|---------------------------|-------------------------|------------------------|-----------------------------|---------------------------|
| 1              | 9 <sup>th</sup> round:<br>Sputum smear microscopy | April 2012                | September 2012          | STAC, Kathmandu, Nepal | ZN Staining                 | 100%                      |

| Sl. No. | Proficiency tested for                                      | Month of Reporting | Month of passing  | Testing agency  | Methods / Media Used   | Proficiency Result |
|---------|---|--------------------|-------------------|---|--|--------------------|
| 2       | 19 <sup>th</sup> round:<br>Solid &<br>Liquid<br>Culture DST | February<br>2013   | Result<br>awaited | Prince<br>Leopold<br>Institute of<br>Tropical<br>Medicine<br>(SNRL),<br>Antwerp,<br>Belgium | First line<br>DST:<br>Economic<br>Variant<br>Method of<br>PST and<br>MIC<br>method<br>Second Line<br>DST | Result<br>awaited  |

### Specimens processed at NTI during the period April 2012-March 2013

|   |      |
|---|------|
| Total number of specimens registered  | 2489 |
| Total number of specimens registered from patients referred to NTI  | 69   |
| Total number of sputum specimen of MDR suspects registered for DOTS Plus under Plan B                     | 1307 |
| Total XDR suspect culture samples registered  | 124  |
| Total XDR culture samples received  | 752  |
| Total sputum samples of RP/236 study registered   | 131  |
| Specimens received from Institute of Animal Health and Veterinary Biologicals                             | 26   |
| Specimens received from Pawgada (CB-NAAT)   | 20   |
| Total Cultures samples registered for 19 <sup>th</sup> round of Proficiency testing received from Belgium | 20   |
| Total number of specimens put up for the Primary culture  | 1693 |
| Total number of specimens subjected for Identification tests  | 302  |
| Total number of sensitivity tests done by Proportion method both for first and second line drugs using LJ | 482  |
| Total no. of Drug Susceptibility test performed using MGIT  | 572  |
| Total no. of Line Probe Assay performed   | 542  |
| Total no. of specimens subjected to Gene Xpert  | 3    |

## **Status of laboratory animals**

### **Major activities**

#### **A. Status of laboratory Animals:**

During the above period a total of 391 albino guinea pigs were raised in healthy condition. Appropriate preventative measures were taken to check outbreak of diseases among breeding stock. One hundred and eight (108) freshly raised animals were utilized for the ongoing research projects. Outdoor Shelter for Retired Breeders was maintained in good condition.

Monthly & “Quarterly reports on monitoring the experiment on animals” in organizations/Institutions under Dte.GHS were prepared in the prescribed format for timely submission to ADG (EPI) with a copy to DDG (TB).

#### **Research Activities:**

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

For assessing the variation in the infectivity, pathogenicity and transmission of drug-resistant isolates of *M.tuberculosis*, post-mortem examinations were conducted on one hundred and forty five (145) guinea pigs that were infected earlier, for a prescribed period. Lymph glands (RLG, ILG & SLG)/ Spleen tissues from these animals were aseptically dissected out, mechanically homogenized, serial dilutions prepared and inoculated on LJ media for viable counts of colony forming units (cfu) after its incubation by two independent readers, as per the approved action plan/ work instruction. Gross lesions, if any, were also assessed and scored at the time of necropsy.

During the period under report, nine coded drug-resistant isolates of *M.tuberculosis* were inoculated in one hundred and eight (108) NTI-bred albino guinea pigs (12 for each isolate). Briefly, preserved coded suspensions prepared in the Bacteriology laboratory were injected subcutaneously (0.5ml) in the medial aspect of right thigh in each guinea pig. Weights of all animals prior to inoculation and every week post-infection were recorded.

The above study Rp/232 was completed and revised man script presented in TCC 18/2/2013 for publication in international Journal tuberculosis.



### **3. EPIDEMIOLOGY AND RESEARCH**

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#### **A. Research Studies**

##### **1. Challenges in Implementation of Diagnostic Algorithm for Patients having Symptoms Suggestive of Pulmonary TB with Smear Negative report on initial sputum examination**

###### **Objectives:**

1. To find out the proportions of smear negative patients that complete the diagnostic algorithm under RNTCP in Karnataka state.
2. To find out health system and patient related barriers to completion of diagnostic algorithm for smear negative patients.
3. To gain insight into the care seeking behavior of smears negative patients.

###### **Methodology in brief:**

The study was carried out in 3 districts of Karnataka namely, Mysore, Chikkamagalur and Shimoga, selected by Simple Random Sampling (SRS), having ratio of notified smear positive to smear negative PTB cases < 1:0.7. In each district, 20% of the DMCs were selected using stratified random sampling; the strata were based on location in rural/urban area and availability of X-ray facility within the DMC. In each DMC, a line list of smear negative patients (both the sputum specimen negative on initial examination /one specimen examined and negative) during the month preceding the visit of research team by two months was prepared. Pediatric TB suspects (<15 years) and those not residing in the jurisdiction of the concerned TU were excluded. Interviews were conducted with patients and relevant RNTCP records were reviewed: Lab register, X-ray register, OPD register, pharmacy register. Patients found to have symptoms at the time of home visit by study field staff were referred to nearest PHI. In order to understand the challenges and constraints in implementing the algorithm and relevant suggestions, in depth interviews were conducted with 5 MOs randomly selected in each district.

###### **Progress during the period of report:**

Field work was carried out from April to September 2012. Line lists of smear Negative patients were prepared for 9 DMCs. RNTCP records as above was scrutinized. 258 patients were interviewed. Information as per check list collected for 8 Laboratories. Information as per check list collected for X-ray units in 6 PHIs. Information on infrastructure was collected for 11 PHCs. In-depth Interview for 11 Medical officers were carried out. Observation visits were made by Divisional Head.

###### **Results of preliminary analysis are as under:**

Out of 258 patients included in the study; only 15(6.0%) completed the algorithm, X-ray was done along with initial sputum examination for 23(9.0%) patients. 21(8.1%) patients received antibiotics for =>10 days and 225(87.2%) for <10 days. Two patients were diagnosed with TB and put on treatment.

## **2. Inventory Study to find out 'Under reporting' of TB cases in Tumkur District of Karnataka State**

**Objective:** To estimate the level of under reporting of TB cases in Tumkur district

### **Methodology in brief:**

The study was carried out in Tumkur district of Karnataka. The information on private nursing homes/Polyclinics presently functional in the district was obtained from the District TB office and updated with the support of MOTC and IMA. The Medical College faculty and doctors of Private nursing homes/Polyclinics were sensitized on ISTC, operational strategy of RNTCP and purpose and procedures of the present study through meetings and personal visits by NTI officials and DTO. The data on diagnosed TB patients was thus collected from TB register of 6 TUs, Lab register of all 28 DMCs, 8 departments of Medical college and 83 nursing homes/Polyclinics.

The data collection formats used for recording the data on diagnosed TB patient were supplied to each of the private nursing homes/Polyclinics and each clinical department of the medical college. For the purpose of the study, any patient diagnosed to be suffering from TB and/or treated for TB by a Medical Officer was considered as a case. Key variables in respect of each TB patients diagnosed in all the selected sources were name, age (in completed years), sex, complete address, postal pin code, disease category (Pulmonary / Extra Pulmonary), Type of cases (New/Previously treated), date of starting treatment and telephone number. All MOTCs and in-charge PHIs were advised through a circular from DTO to ensure recording of the aforesaid variables in the treatment cards and TB register. The data recording by the participating facilities was undertaken prospectively from 1st January 2012 to 31st December 2012.

### **Progress during the period of report:**

Observation visits were made by SSO and I/C ERD. Sensitization and data collection were carried out by ERD officials on regular intervals during the year.

The data collections and data entry from the selected sources was completed for all the four quarters of 2012 and analysis is under progress.

### **Results of preliminary analysis are as under:**

Overall under reporting of all diagnosed cases was 5.5%. Out of Smear negative cases diagnosed by RNTCP 5.5% were initial defaulters in the 2<sup>nd</sup> quarter of 2012.

**3. *Evaluation of diagnostic algorithm among registered new Smear Negative PTB patients under RNTCP in Karnataka state***

**Objective:** To find out the proportion of patients diagnosed as per the RNTCP algorithm out of the registered new smear negative PTB patients.

**Methodology in brief**

Study is being carried out in four districts namely Chikkabalapur, Tumkur, Uttarakannada and Belgaum from Karnataka state, selected by purposive sampling. In each district, 50 new smear negative patients registered during the period of 90 days prior to field visit by research team are to be recruited into the study. Pediatric TB suspects (<15 years), those not residing in the jurisdiction of the concerned TU, Transfer out cases are excluded. Data collection regarding the investigations undertaken, smear results, antibiotics prescribed/ consumed with duration, details of X-ray was done from TB register, Treatment card, DMC lab register, X-ray report and X-ray film if available and by patient Interviews.

**Progress during the period of report:**

The protocol was prepared and presented to TCC meeting. Clearance from institutional ethics committee was obtained. The pilot study was undertaken in Yeshwanthpur TU, Bangalore. Based on the pilot study necessary revisions in protocol and study formats were prepared. Field work and data entry are completed in Chikkaballapur and Belgaum district. Study is under progress.

**4. *Role of additional screening by chest X-ray among persons with symptoms suggestive of Pulmonary TB and smear Negative on initial sputum examination***

**Objective:** To find out the proportion of patients having a normal chest X-ray out of smear negative PTB patients diagnosed by using X-pert MTB/RIF

**Methodology in brief:**

Clearance from institutional ethics committee was obtained for the study. The study is being conducted in about 400 consecutive smear negative suspects at Pavagada TU on pilot basis in collaboration with SVIRHC. The Study population is PTB suspects, smear negative on initial sputum examination, 15 yrs and above in age. Key variables are X-ray result (Normal/lung pathology other than PTB/tuberculosis inactive/ tuberculosis active /technically inadequate/not done) and Gene Xpert result (Pos/Neg/Indeterminate/not done). An additional spot sputum specimen will be obtained from smear negative PTB suspects reporting at the study site, for subjecting to Gene X-pert. Chest X-ray PA view of the patient will be taken on the same day. X-ray films will be read by Chest specialist/Physician at the study site and later at NTI. Recruitment of study subjects at a given study site will continue till the allocated sample size with available results of X-ray and Gene X-pert is achieved.

**Progress during the period of report:**

Field work commenced after Ethical clearance for the study. Gene X-pert and X-ray results were collected for 75 patients. Data entry is under progress.

**5. Effectiveness of community based observation of treatment for tuberculosis in Bangalore city in 2010-11**

**Objectives:**

1. To compare the treatment outcome and sputum conversion rate of new smear positive (NSP) TB patients registered in Bangalore city from 4<sup>th</sup> quarter 2010 to 2<sup>nd</sup> quarter 2011:
  - a) To determine the treatment outcome and sputum smear conversion rate in NSP TB patients on institutional DOT
  - b) To determine the treatment outcome and sputum smear conversion rate in NSP TB patients on community DOT
  - c) To compare the rates between the two groups
2. To determine the proportion of NSP TB patients taking DOT under supervision of different types of community DOT providers during same period.

**Methodology in brief:**

This is a cohort study where the treatment cards of the patients will be reviewed and relevant information will be abstracted to data collection form. Further information will be obtained for the same patients from the TB register and information on type of DOT provider will be recorded from the list of DMC / PHI responsible for treatment of patient. The listed data variables are TB registration number, Age, Sex, sputum conversion at 3months, treatment outcome as per RNTCP guidelines with confounders as HIV, DM, Type of DOT provider (Community / Institutional), etc.

**Progress during the period of report:**

Collected Treatment cards and TB register data from 4<sup>th</sup> Quarter 2010 to 3<sup>rd</sup> Quarter 2011, from all the nine TUs coming under BBMP and data entry under progress.

**6. Annual risk of tuberculous infection in a rural population of south India and its relationship with prevalence of smear positive pulmonary tuberculosis**

**Objectives:** to estimate the annual risk of tuberculous infection (ARTI) among children in a sub-division of rural Bangalore district.

**Methodology in brief:**

The tuberculin survey was conducted during 2010-2011 among 3838, 5-9 year old children attending 147 schools selected by simple random sampling. Purpose of survey, nature of tuberculin test and likely adverse effects were explained to school heads. Similar information was provided to parents/guardians by means of printed pamphlets issued to children and their written consent was sought. Children whose parents had consented, were administered 0.1 ml of 2TU PPDRT23 with Tween 80 (procured from Statens Serum Institute, Copenhagen (SSI) in a single batch) intradermally on mid-anterior aspect of left forearm using a disposable tuberculin syringe. Test was recorded as 'satisfactory' if it raised a flat pale wheal with clearly visible pits and well demarcated borders, and 'unsatisfactory' in case of leakage or subcutaneous injection. Date of birth, sex and presence or absence of BCG scar was recorded. Children with fever or recent history of skin rash were excluded from tuberculin testing. Maximum diameter of induration was measured between 48-96 hours. Parents of children having reaction size of  $\geq 10$  mm were advised through a letter in local language that in the event of the child having persistent cough or fever for  $\geq 2$  weeks, recent loss of weight, failure to gain weight or family history of TB in last two years, the child may be taken to the nearest government health facility to rule out TB.

ARTI was computed from prevalence of infection estimated by mirror-image technique.

Analysis for the study was undertaken during the reporting period. Prevalence of infection was found to be 7.3%, ARTI was 1.05%.

## **B.Research Paper published:**

### **B1: Abstract of NTI studies:**

1. Chadha VK, Sarin R, Narang P, et al; **Trends in the annual risk of tuberculous infection in India:** Int J Tuberc Lung Dis. 2013 Mar;17(3):312-9. doi: 10.5588/ijtld.12.0330. Epub 2013 Jan 14.

Study was conducted in twenty-four districts in India with the objective to evaluate trends in annual risk of tuberculous infection (ARTI) in each of four geographically defined zones in the country.

Two rounds of house-based tuberculin surveys were conducted 8-9 years apart among children aged 1-9 years in statistically selected clusters during 2000-2003 and 2009-2010 (Surveys I and II). Altogether, 184,992 children were tested with 1 tuberculin unit (TU) of purified protein derivative (PPD) RT23 with Tween 80 in Survey I and 69,496 children with 2TU dose of PPD in Survey II. The maximum transverse diameter of induration was measured about 72 h after test administration. ARTI was computed from the prevalence of infection estimated using the mirror-image method.

Estimated ARTI rates in different zones varied between 1.1% and 1.9% in Survey I and 0.6% and 1.2% in Survey II. The ARTI declined by respectively 6.1% and 11.7% per year in the north and west zones; no decline was observed in the south and east zones. National level estimates were respectively 1.5% and 1.0%, with a decline of 4.5% per year in the intervening period.

Although a decline in ARTI was observed in two of the four zones and at national level, the current ARTI of about 1% in three zones suggests that further intensification of TB control activities is required.

2. Chadha VK, Kumar P, Anjinappa SM, et al; **(2012) Prevalence of Pulmonary Tuberculosis among Adults in a Rural Sub-District of South India.** PLoS ONE 7(8): e42625. doi:10.1371/journal.pone.0042625

The survey was conducted to estimate point prevalence of bacteriologically positive pulmonary TB (PTB) in a rural area in South India, implementing TB program DOTS strategy since 2002.

Survey was conducted among persons  $\geq 15$  years of age in fifteen clusters selected by simple random sampling; each consisting of 5–12 villages. Persons having symptoms suggestive of PTB or history of anti-TB treatment (ATT) were eligible for sputum examination by smear microscopy for Acid Fast Bacilli and culture for *Mycobacterium tuberculosis*; two sputum samples were collected from each eligible person.

Persons with one or both sputum specimen positive on microscopy and/or culture were labeled suffering from PTB. Prevalence was estimated after imputing missing values to correct for bias introduced by incompleteness of data.

In six clusters, registered persons were also screened by chest X-ray. Persons with any abnormal shadow on X-ray were eligible for sputum examination in addition to those with symptoms and on anti TB treatment. Multiplication factor calculated as ratio of prevalence while using both screening tools to prevalence using symptoms screening

alone was applied to entire study population to estimate prevalence corrected for non-screening by X-ray.

Of 71,874 residents  $\geq 15$  years of age, 63,362 (88.2%) were screened for symptoms and ATT. Of them, 5120 (8.1%) - 4681 (7.4%) with symptoms and an additional 439 (0.7%) with ATT were eligible for sputum examination. Spot specimen were collected from 4850 (94.7%) and early morning sputum specimens from 4719 (92.2%). Using symptom screening alone, prevalence of smear, culture and bacteriologically positive PTB in persons  $\geq 15$  years of age was 83 (CI: 57–109), 152 (CI: 108–197) and 196 (CI :145–246) per 100,000 population respectively. Prevalence corrected for non-screening by X-ray was 108 (CI: 82–134), 198 (CI: 153–243) and 254 (CI: 204–301) respectively.

3. Chopra K, Chadha VK, Ramachandra J et al: **Trends in Annual Risk Of Tuberculous Infection in North India**; Plos ONE, 7 (12) : e51854. doi:10.1371/journal.pone.0051854

A study was conducted in six selected districts in Northern India, to find out the trend in Annual risk of tuberculous infection (ARTI) in north India.

Two rounds of community level surveys were conducted during 2000–2001 and 2009–10 respectively. Representative samples of children 1–9 years of age were tuberculin tested and maximum transverse diameter of induration was recorded in mm at about 72 hours. ARTI was computed from the estimated Prevalence of infection using mirror-image technique and anti-mode method.

ARTI was found to decline from 1.9% (confidence interval: 1.7–2.1) at round I to 1.1% (confidence interval: 0.8–1.3) at round II at the rate of 8% per year during the intervening period.

A significant reduction in the risk of tuberculous infection among children was observed between two rounds of surveys carried out at an interval of about 9 years.

Observed prevalence suggests further strengthening of TB control program.

4. Joydev Gupta, Praseeja: **Involving PPs in case notification- Field experience**; website:<http://ntiindia.kar.nic.in>

The article contains the experience gained in involving private practitioners coming under 83 nursing homes of Tumkur district during the conduct of Inventory study involving their case notification.

5. Shashidhara AN, Chadha VK: **Contribution of Epidemiology Section, NTI towards TB control in last 50 years**; website:<http://ntiindia.kar.nic.in>

The article contains different epidemiological and operational research studies conducted by ERD (formerly EPS) during the last 5 decades since NTI's inception.

**B2: Collaborative studies:**

1. Vikas G. Rao, Jyothi Bhat, Rajiv Yadav et al; **Prevalence of Pulmonary Tuberculosis - A Baseline Survey In Central India** : PLoS ONE, August 2012, 7(8), e43225, doi:10.1371/journal.pone.0043225
2. Bishnu B, Bhaduri S, Kumar AMV, Click ES, Chadha VK, et al: **What are the reasons for poor up take of HIV testing among patients with TB in an eastern India district**: Plos ONE, 8 (3)e55229.
3. Quazi TA, Sarkar S, Chadha V et al: **Are all patients diagnosed with tuberculosis in Indian medical colleges referred to the RNTCP?** Int J Tuberc Lung Dis. 2012 Aug;16(8):1083-5. doi: 10.5588/ijtld.11.0699. Epub 2012 Jun 5

**6. Trainings, Meetings and Workshops**

| <b>Participant</b>                | <b>Purpose of meeting/workshop</b>  | <b>Date and Venue</b>   |
|-----------------------------------|---|---|
| Mr Hemanth NK and Mr Shivashankar | Attended RNTCP modular training   | 2 weeks from 22 <sup>nd</sup> August 2012 at NTI, Bangalore                   |
| Dr. S.K. Tripathy                 | Presented guest lecture on occasion of centenary celebration of Madanapalle TB sanatorium               | On 7 <sup>th</sup> August 2012 at Arogyavaram Medical Centre, Madanapalle, AP |
| Dr VK Chadha                      | Facilitator in training program for Post Graduates  | 20 <sup>th</sup> September 2012 at NTI , Bangalore                            |
| Dr VK Chadha                      | Facilitated PG Medical students on 'Epidemiological basis of TB' and recent research undertaken at NTI. | 21 <sup>st</sup> January 2013, at NTI.  |



## **7. Other major activities**

### **1. Following National level protocols formulated**

- i. Inventory studies to find out the extent of under reporting of TB cases by RNTCP.
  - ii. Under-diagnosis of Pulmonary TB among persons with symptoms suggestive of pulmonary TB presenting to health facilities under RNTCP
  - iii. National sample survey to estimate point prevalence of bacteriologically positive pulmonary Tuberculosis.
2. Formulated protocol titled 'Improving TB case finding efficiency in management of TB cases in private health care facilities in Bangalore city'.
  3. For the task titled 'Treatment outcome and fate of TB patients treated in private clinic in Bangalore city', data collection format for outcome of TB patients prepared and collected 150 patients data from Dr Subramanya Day care.
  4. Detailed comments on Multi Centric Relapse study was submitted to Director, NIRT, Chennai.
  5. A total of 88 patients detected during Disease Prevalence Survey completed in 2010, were visited during 2012-2013. Out of this, 47 were interviewed, 20 had died and 8 were migrated. Total sputum sample collected was 60 and out of this 4 were culture positive.
  6. Dr. VK Chadha provided technical assistance to laboratory officials in undertaking costing evaluation for (1) Diagnosis of PTB comparing present algorithm and Gene X-pert and (2) for diagnosis and follow up of MDR-TB.

## **4. MONITORING AND EVALUATION**

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The Monitoring & Evaluation Division of the Institute plays an essential role and forms a supportive unit for the research activities. The Division provides the statistical need 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, analysis of data, generating tables and results and interpretation of the results of various research studies.

The Division has experienced 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. However, at present all the work related to M&E w.r.t various research studies and monitoring related work under taken by ERD, Laboratory Division, and HRD respectively is being carried out by the staff functioning under M&E Division.

This wing also shoulders the responsibility of documenting and archiving the various research protocols approved and studies conducted in the Institute till date. Statistical analysis is being carried out using statistical packages viz; Epi-info, SPSS etc. The details of analysis carried out for various research studies are given below.

### **1) *Nelamangala School Study (RP/230)***

Due to few clarifications and errors, the entire database of 148 schools with 4132 records was revisited for fields namely sex, Age, BCG & Testing Status. After careful data validation using Epi-info software a soft copy of cleaned database was re-submitted to the Principal Investigator.

### **2) *Effectiveness of community based observations of treatment for Tuberculosis in Bangalore city in 2010-2011 (RP/236)***

M&E Division participated in the study related meetings and discussions with Dr. Tripathy and field investigators for data entry work of RP 236. This division has scrutinized about 9 TUs Treatment cards, TB registers and DOT provider lists for 4<sup>th</sup> quarter 2010 and I & II quarters of 2011. Data entry has been completed for 1004 records of the above 9 TUs for IV quarter of 2010, I and II quarters of 2011 however, data entry for III quarter of 2011 is still in progress.

### **3) *Drug Resistance Surveillance (DRS)/ NRL Data***

M&E Division generated tables on Analysis of Proficiency testing results of 9 C&DST Labs namely Choitram, JJM, BMHRC, SMSMC, Ajmer, Ranchi, Kolkata, Cuttack and Nagpur set of 20 each data. Reading of published research papers/articles regarding DRS and review of the Statistical tests for univariate and multivariate analytical tables from TAI paper/article.

## **B. Regarding Monitoring work – RNTCP data validation**

- This Division received TU wise RNTCP Triangulation data for the period II quarter 2010 from the CTD, DGHS for TU/District wise data validation for the sputum conversion report & result of treatment reports for NSP & RT smear +ve patients registered in II quarter of 2010. According to CTD guidelines, systematic documentation for triangulation data was undertaken by validating the sputum conversion report & result of treatment reports for NSP & RT smear +ve patients registered in 2<sup>nd</sup> quarter of 2010. Finally, this division has compiled and done related Data Quality Assessment tasks for the 2<sup>nd</sup> quarter 2010 of RNTCP Triangulation data for 24 states of the country comprising 302 TB Units and 105 districts.
- M&E Action plan was prepared for the period 2013-2014 and submitted to the Director.
- Divisional meetings were held regarding reorganization & strengthening of Monitoring work.
- This division was involved in strengthening of STDC for effective support to RNTCP by attending review meetings for STDC guidelines.

## **C. Other technical activities**

- M&E Division participated in “National Statistics Day” held on 29<sup>th</sup> June 2012 @ NSSO (FOD), M/o Statistics & P.I, Kendriya Sadan, CGO Complex, Bangalore.
- M&E Division offers services to in-house website, purchase, publication, and condemnation committee meetings.

## 5. COMMUNICATION AND SOCIOLOGY

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### Scientific Gallery

As part of the ACSM activity, the institute has a scientific gallery which has rich repository of information on TB and its control. The visual display at the gallery leaves an indelible impression in the minds of the visitors on different aspects of Tuberculosis and its control, the evolution of TB control activities, and also on the role played by the Institute in the quest to control TB.

The ACSM materials include display boards, photographs of luminaries in the field of TB, milestones in the development of TB Control Programming the salient features of the National TB Control Programme. In addition, projection and information kiosk facilities have been installed for the benefit of trainees and visitors to the Institute who are on an education tour on tuberculosis. The projection materials are being updated periodically in tune with current policies of TB control.

The target group for the scientific gallery comprises of both undergraduate and graduate medical students, para-medical students and also those pursuing life sciences.

### **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 (including Ayurvedic, Homoeopathy & Unani), para-medicals, under graduate and post graduate students pursuing life sciences and Nursing courses. The scientific gallery had a total 2028 students in 57 batches from 39 educational institutions during the year under report. The details of the visits are furnished below:

| Sl. No | Date     | Category of students | No. of students | Organisation  |
|--------|----------|----------------------|-----------------|---|
| 1      | 09-04-12 | Bsc Nursing          | 43              | Oxford college of nursing, Bengaluru                |
| 2      | 10-04-12 | Bsc Nursing          | 45              | Narayana Hrudayalaya college of nursing, Bengaluru. |
| 3      | 12-04-12 | Bsc Nursing          | 90              | Apollo college of Nursing, Ayambakkam, Chennai, TN  |
| 4      | 17-04-12 | ----do-----          | 18              | Sanjeevini nursing Inst., Bengaluru                 |
| 5      | 19-04-12 | DGNM                 | 40              | Manipal school of nursing, Bengaluru                |
| 6      | 27-04-12 | Medical students     | 15              | Devaraju Urs Medical college, Tamaka, Kolara.       |
| 7      | 27-04-12 | PG Medical students  | 05              | St. Martha's Hospital Bengaluru                     |

| <b>Sl. No</b> | <b>Date</b> | <b>Catagory of students</b>            | <b>No.of students</b> | <b>Organisation</b>  |
|---------------|-------------|--|-----------------------|--|
| 8             | 03-05-12    | Health visitors trainees               | 25                    | Health & Family welfare training centre, Bengaluru         |
| 9             | 08-05-12    | Bsc Nursing                            | 29                    | Ambigara Chowdaiah college of nursing, Bengaluru           |
| 10            | 14-05-12    | Bsc Nursing                            | 43                    | CMR college of Nursing, Bengaluru                          |
| 11            | 15-05-12    | ----do-----                            | 23                    | -----do-----   |
| 12            | 22-05-12    | Diploma in paramedical                 | 47                    | Goutham college of paramedical, Bengaluru                  |
| 13            | 24-05-12    | -----do-----                           | 40                    | -----do-----.  |
| 14            | 29-05-12    | Medical Asst. Trainees                 | 35                    | Airforce medical training centre, Bengaluru                |
| 15            | 05-06-12    | Bsc Nursing                            | 15                    | Chinai college of nursing, Bengaluru                       |
| 16            | 13-06-12    | Bsc MLT                                | 50                    | Acharya Inst. Of Health science, Bengaluru                 |
| 17            | 19-06-12    | Bsc Nursing                            | 39                    | Adventist college of Nursing, Bengaluru                    |
| 18            | 21-06-12    | GNM                                    | 35                    | St.Philominas school of nursing,Bengaluru                  |
| 19            | 26-06-12    | Bsc Nursing                            | 36                    | Sri Sathya Sai Inst. Of Higher Medical Sciences, Bengaluru |
| 20            | 03-07-12    | Bsc Nursing                            | 40                    | Dr.John college of nursing, Bengaluru                      |
| 21            | 20-07-12    | Public health students                 | 13                    | Maastricht university, Netherlands                         |
| 22            | 26-07-12    | Bsc Nursing                            | 28                    | Lakshmi college of Nursing, Bengaluru                      |
| 23            | 31-07-12    | Bsc Nursing                            | 28                    | St.John's college of nursing,Bengaluru                     |
| 24            | 01-08-12    | Bsc Nursing                            | 39                    | Vaidehi college of nursing, Bengaluru                      |
| 25            | 03-08-12    | Msc (N)<br>Bsc(N)                      | 01<br>28              | -----DO-----   |
| 26            | 07-08-12    | Msc(Microbiology)<br>Bsc(Microbiology) | 10<br>13              | Indian Academy degree college, Bengaluru                   |
| 27            | 04-09-12    | MSW                                    | 27                    | Acharya Inst. of management & sciences, Bengaluru          |

| <b>Sl. No</b> | <b>Date</b> | <b>Catagory of students</b> | <b>No.of students</b> | <b>Organisation</b>  |
|---------------|-------------|-----------------------------|-----------------------|--|
| 28            | 20-09-12    | Medical PG'S (PSM)          | 11                    | Armed medical college, Pune  |
| 29            | 01-10-12    | GNM                         | 31                    | St.Marth's school of nursing, Bengaluru                                      |
| 30            | 03-10-12    | Bsc(N)                      | 54                    | St.Marth's College of nursing, Bengaluru                                     |
| 31            | 05-10-12    | ----do-----                 | 50                    | St.John's college of nursing, Bengaluru                                      |
| 32            | 09-10-12    | -----do-----                | 12                    | Manipal college of nursing, Bengaluru  |
| 33            | 17-10-12    | ----do-----                 | 19                    | Bhagawan mahaveer Jain Hosp. School of nursing, Bengaluru                    |
| 34            | 16-11-12    | Bsc(N)                      | 50                    | Krupanidhi college of nursing, Bengaluru                                     |
| 35            | ---do---    | ---do---                    | 45                    | Manipal College of nursing, Bengaluru  |
| 36            | 23-11-12    | ----do-----                 | 53                    | St.Philomina's college of nursing, Bengaluru                                 |
| 37            | 05-12-12    | Medical Assts.              | 61                    | Medical training centre, Air force, Bengaluru                                |
| 38            | 11-12-12    | Pc Bsc(N)                   | 38                    | St.John's national academy of health sciences, College of nursing, Bengaluru |
| 39            | 14-12-12    | Bsc(N)<br>Msc(N)            | 21<br>10              | Garden city college of nursing, Bengaluru                                    |
| 40            | 08-01-13    | GNM.                        | 68                    | Lakshmi memorial inst. of nursing Bengaluru.                                 |
| 41            | 18-01-13    | ----do-----                 | 32                    | St.Philomina's school of nursing, Bengaluru                                  |
| 42            | 21-01-13    | Medical P.G's               | 20                    | Various medical colleges of karnataka  |
| 43            | 24-01-13    | Bsc(N)<br>Msc(N)            | 37<br>03              | Oxford college of nursing, Bengaluru   |
| 44            | 28-01-13    | Bsc(N)<br>GNM               | 04<br>38              | Goutham college / school of nursing, Bengaluru                               |
| 45            | 04-02-13    | Bsc(N)                      | 35                    | Josco college of nursing, Bengaluru  |
| 46            | 05-02-13    | Bsc(N)                      | 43                    | St.Jonn's college of nursing, Bengaluru                                      |

| <b>Sl. No</b> | <b>Date</b> | <b>Catagory of students</b> | <b>No.of students</b> | <b>Organisation</b>                                |
|---------------|-------------|-----------------------------|-----------------------|--|
| 47            | 06-02-13    | Bsc(N)<br>GNM               | 24<br>10              | CMR colleges of Nursing,Bengaluru.                 |
| 48            | 08-02-13    | Bsc(N) GNM                  | 18<br>28              | Narayana hrudayalaya college of nursing, Bengaluru |
| 49            | 19-02-13    | Bsc(N)                      | 50                    | Sri Kalabhyraveshwara college nursing, Bengaluru   |
| 50            | 22-02-13    | P.C.Bsc(N)                  | 34                    | Narayana hrudayalaya college of nursing, Bengaluru |
| 52            | 06-03-13    | Medical Assts.              | 59                    | Medical Trg. Centre, Air force, Bengaluru          |
| 53            | ----do----  | Msc-Biotech<br>Bsc-Biotech  | 24<br>28              | Furgussion college,Pune, Maharastra                |
| 54            | 08-03-13    | P.C.Bsc(N)                  | 34                    | T.John colleges of Nursing,Bengaluru.              |
| 55            | 12-03-13    | Msc(N)<br>Bsc(N)            | 02<br>37              | SEA college of nursing, Bengaluru                  |
| 56            | 13-03-13    | Medical Assts.              | 20                    | Medical Training Centre, Air force, Bengaluru      |
| 57            | 21-03-13    | Msc(N)                      | 25                    | Lakshmi memorial Inst. of Nursing, Mangalore       |

In order to impart knowledge on TB among youngsters, the division has initiated sensitization of pre-university students and has planned to escalate this endeavour in the years to come. About 1000 pre-university students of Sheshadripuram composite college, Yelahanka, Bengaluru, were sensitized about TB Disease during the period under report.

## 6. ADMINISTRATION DIVISION

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The Administration Division of NTI caters to all the administrative requirements of the institute. The five units under this Division are Establishment, Accounts, Hostel, Stores and Transport Units. The major activities of the units for the financial year 2012-13 are briefly furnished below.

### Establishment

The unit caters to the administrative matters, general upkeep of campus through CPWD, provision of contractual manpower to various divisions and service matters pertaining to the staff viz., Framing of Recruitment Rules in respect of all Group 'B' & 'C' posts as per the recommendation of VI CPC and its onward transmission to the CTD for its notification, holding of DPC for considering cases of promotion, confirmation, grant of MACP, processing of legal issues pertaining to service matters coming under the purview of Central Administrative Tribunals and Honorable High Court of Karnataka & SLP in the Supreme Court.

The details of staff position as on 31-03-2013 is as under

| Sl. No.      | Category            | Sanctioned | In position | Vacant    |
|--------------|---------------------|------------|-------------|-----------|
| 1.           | <b>Group 'A'</b>    | 15         | 11          | 04        |
| 2.           | <b>Group 'B'</b>    |            |             |           |
|              | <i>Gazetted</i>     | 03         | 01          | 02        |
|              | <i>Non-gazetted</i> | 29         | 22          | 07        |
| 3.           | <b>Group 'C'</b>    | 102        | 92          | 10        |
| <b>Total</b> |                     | <b>149</b> | <b>126</b>  | <b>23</b> |

### Recruitments

| Sl. No | Name             | Designation | Date       |
|--------|------------------|-------------|------------|
| 1.     | Mr. Arvind Kumar | LDC         | 11/09/2012 |

### Promotions

| Sl. No | Name | Designation | Date |
|--------|------|-------------|------|
| 1.     | Nil  | -           | -    |



**Retirements**

| <b>Sl. No</b>               | <b>Name</b>            | <b>Designation</b>  | <b>Date</b> |
|-----------------------------|------------------------|---------------------|-------------|
| <b>Superannuation</b>       |                        |                     |             |
| 1.                          | Dr. K.M. Shivakumar    | Additional Director | 30-06-2012  |
| 2.                          | Sri. S. Shivaraju      | Daftry (MTS)        | 31-08-2012  |
| 3.                          | Sri. S. Pushpanathan   | Driver Gr. I        | 30-09-2012  |
| 4.                          | Sri. P. Madhavan       | Store Keeper        | 30-11-2012  |
| 5.                          | Dr. Vijay Kumar Challu | Veterinarian        | 28-02-2013  |
| <b>Voluntary Retirement</b> |                        |                     |             |
| 1.                          | Nil                    | -                   | -           |

| <b>Resignation from service</b> |                   |                    |             |
|---------------------------------|-------------------|--------------------|-------------|
| <b>Sl. No</b>                   | <b>Name</b>       | <b>Designation</b> | <b>Date</b> |
| 1.                              | Sri. Arvind Kumar | LDC                | 31-12-2012  |

**Transfers from NTI**

| <b>Sl. No</b> | <b>Name</b> | <b>Designation</b> | <b>Date</b> |
|---------------|-------------|--------------------|-------------|
| 1.            | Nil         | -                  | -           |

**Transferred to NTI**

| <b>Sl. No</b> | <b>Name</b>          | <b>Designation</b> | <b>Date</b> |
|---------------|----------------------|--------------------|-------------|
| 1.            | Dr. Parameshwar Naik | Sr. C.M.O          | 01-08-2012  |

**Training of officers / officials in administrative matters**

| <b>Sl. No.</b> | <b>Details of Training</b>     | <b>Date</b>   | <b>Venue</b>   | <b>Name of the officer</b> |
|----------------|--------------------------------|---------------|----------------|----------------------------|
| 1              | Training on New Pension Scheme | On 04-10-2012 | INGAF, Chennai | Smt. E. Divya UDC          |

### **Events observed / celebrated**

Republic Day, Independence Day and Hindi Day were observed.

#### **Civil & Electrical works and Maintenance**

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, 70, 00,000/- under the head of account PLAN–Capital- Major Works was allocated to the Institute during the financial year 2012-13 for carrying out maintenance and new works. An amount of Rs.1, 65, 00,000/- was spent for carrying out maintenance and new works. There was no allocation of budget under Machinery and Equipment during the financial year 2012-13.

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 of Canteen
2. Provided Kalaniketan with push-back chairs, sofas, podium, wooden cabinets and information display units.
3. Strengthening of the embankment on eastern and western side of Animal Lab Unit
4. Canopy cover constructed for Cauvery and Krishna Nivas hostels.
5. Gutter around NTI campus were closed with concrete slabs.
6. Toilet in ground floor PV Benjamin block was renovated.
7. Four rain water pipes in PV Benjamin Block were replaced.
8. Replacement of the doors of hostel rooms.
9. Replaced steel doors and windows and provided wire mesh for NTI Staff Type I, II and III quarters
10. Barbed wire fencing of southern and western sides of NTI Campus was undertaken.
11. Horticultural work was done around hostels and in front of Kalaniketan.

### **Electrical works**

1. Electrical works for Kalaniketan, canteen and Avalon Building were undertaken.
2. A standby electrical pump set was provided for the well in the campus.

### **Transport Unit**

The Institute has fleet of 11 vehicles and the unit is responsible for the upkeep of the vehicles including in-house repair of vehicles, if feasible. The unit also provides vehicles for various activities undertaken by the Institute. The unit also maintains all documents pertaining to registration, insurance and condemnation of vehicles.

## Accounts

The unit caters to the financial matters of the Institute. This includes:

1. Preparation of annual budget and performance budget proposals.
2. Drawing and disbursement of salaries, traveling allowances, medical reimbursement & other claims and advances related to the staff & officers
3. Calculation and disbursement of MACP arrears, Pay re-fixation, and payment of arrears on account of grant of PCA from retrospective effect.
4. Processing of payments pertaining to procurements made through stores and annual maintenance contracts services.

The details of Plan & Non-plan budget allocation and expenditure incurred for the financial years 2010-11, 2011-12 & 2012-13 are furnished below.

|             | <b>PLAN</b>                   | <b>(Rs. in lakhs)</b>    |
|-------------|-------------------------------|--------------------------|
| <b>Year</b> | <b>Budget allocated (Rs.)</b> | <b>Expenditure (Rs.)</b> |
| 2010-2011   | 195.00                        | 172.2                    |
| 2011-2012   | 205.00                        | 174.12                   |
| 2012-2013   | 240.00                        | 233.67                   |

|             | <b>NON PLAN</b>               | <b>(Rs. in Lakhs)</b>    |
|-------------|-------------------------------|--------------------------|
| <b>Year</b> | <b>Budget allocated (Rs.)</b> | <b>Expenditure (Rs.)</b> |
| 2010-2011   | 616.00                        | 615.37                   |
| 2011-2012   | 686.00                        | 665.40                   |
| 2012-2013   | 705.00                        | 705.86                   |

The revenue generated by the Institute for the year 2012-13 through various sources was credited to the consolidated fund of Government of India as given in the table below.

### REVENUE GENERATED

| <b>Year</b> | <b>Amount (Rs.)</b> |
|-------------|---------------------|
| 2012-2013   | 5,27,611            |

## **Stores**

Stores cater 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 include:

- 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.

## **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 20 rooms. The Mess attached to the Hostel provides hygienic boarding facility.

## **7. PARTICIPATION IN CONFERENCES, WORKSHOPS, TRAINING PROGRAMMES, MEETINGS ETC.**

The faculty and technical staff of NTI participated as Facilitators, Resource person / delegate in Conference / workshops / Training programmes conducted in both at NTI and outside. The details are furnished below:

### **a.Conferences:**

#### **Participation and paper presented**

| <b>Sl No</b> | <b>Particulars</b>   | <b>Date</b>                                      | <b>Participants</b>  | <b>Paper / poster presented</b>  |
|--------------|--|--|--|--|
| 1            | 67th NATCON conference at Patna  | 7 <sup>th</sup> -11 <sup>th</sup><br>Feb 2013    | Dr V K Chadha<br>Public Health<br>Consultant                                     | Presented paper titled "Under reporting of TB patients in Tumkur district".  |
| 2            | Attended the 43 <sup>rd</sup> Union World Conference on Lung Health (WLC 2012). at Kaula Lumpur, Malaysia. | 16 <sup>th</sup> & 17 <sup>th</sup><br>Nov. 2012 | Dr Prahlad<br>Kumar,<br>Director<br>Dr V K Chadha<br>Public Health<br>Consultant | Actively interacted with TB programme managers of various countries regarding effective management of drug resistant TB. |
| 3            | Attended National conference on AIDS at Taj Residency, Bangalore   | 24 <sup>th</sup> Oct. 2012                       | Dr Prahlad<br>Kumar,<br>Director   | Made presentation on "Recent regulation in the field of TB control".   |
| 4            | Participated in the 23 <sup>rd</sup> Annual Conference of Family Physicians Association, Bangalore         | 25 <sup>th</sup> Nov 2012                        | Dr. Preetish S.<br>Vaidyanathan,<br>CMO-NFSG                                     | Made a presentation on International Standards of TB Care  |

**b.AWARD**

| <b>Awardee</b>                       | <b>Title of the Award</b>  | <b>Date &amp; Place</b>  | <b>Organizer</b>             |
|--------------------------------------|--|--|------------------------------|
| Dr Prahlad Kumar<br>Director,<br>NTI | <b>Dr PRJ Gangadharam End7-45owment Oration Award</b><br>Director made presentation of the Oration titled “Challenges in the management of MDR TB in India”. | 15 <sup>th</sup> March 2013<br>at Mahatma Gandhi Institute of Medical Sciences (MGIMS), Sevagram, Wardha | MGIMS,<br>Sevagram<br>Wardha |

**c.Participation in the ISS Training Programmes**

| <b>Sl No</b> | <b>Participants</b>                                      | <b>Date</b>  | <b>Details of training</b>  |
|--------------|--|--|---|
| 1            | Mr. M.Ananda,<br>Statistical Officer                     | 16 <sup>th</sup> Apr<br>to<br>25 <sup>th</sup> May<br>2012 | ISS induction training programme,<br>NASA, Greater Noida, UP  |
| 2            | Smt. N.Sangeetha, Chief<br>Statistical Officer<br>(NFSG) | 21 <sup>st</sup> to 25 <sup>th</sup><br>Aug 2012           | ISS in service training on Research<br>Methodology and Data Analysis,<br>Tata Institute for Social Sciences<br>(TISS), Mumbai |
| 3            | Mrs Praseeja,<br>Senior Statistical Officer              | 21 <sup>st</sup> -25 <sup>th</sup><br>January<br>2013      | Attended as participant in<br>refresher training for Officers of<br>ISS, Computer centre, MOSPI, New<br>Delhi.                |

#### d. Workshops

##### At NTI

| Sl. No. | Particulars  | Date   | Faculty   |
|---------|--|--|---|
| 1       | Workshop for strengthening the functioning of STDCs  | 26 <sup>th</sup> - 27 <sup>th</sup><br>Sept 2012     | Dr. Prahlad Kumar, Director<br>Dr V K Chadha<br>Public Health Consultant<br>Dr. Preetish S. Vaidyanathan,<br>CMO (NFSG) |
| 2       | Operations Research Capacity Building workshop and project mentorship for professionals working with the RNTCP | 11 <sup>th</sup> - 15 <sup>th</sup><br>March<br>2013 | Dr V K Chadha<br>Public Health Consultant   |

##### Outside NTI

| Sl. No. | Particulars   | Date  | Resource person  |
|---------|---|---|--|
| 1       | Participated in NRL Co-ordination workshop and sensitization workshop on EX PANDx TB CBNAAT Project at NDTB Centre, New Delhi | 9 <sup>th</sup> to 10 <sup>th</sup><br>Apr<br>2012  | Dr. S. Anand<br>Consultant Microbiologist                                  |
| 2       | Participated in National OR workshop organized by Union and WHO on protocol development and EPI data analysis at NIRT Chennai | 10 <sup>th</sup> -21 <sup>st</sup><br>Sept,<br>2012 | Dr V K Chadha<br>Public Health Consultant                                  |
| 3       | Participated in 'Introduction to TB modeling workshop' organized by Union South East Asia Office, New Delhi                   | 8 <sup>th</sup> -10 <sup>th</sup><br>Nov 2012,      | Dr V K Chadha<br>Public Health Consultant                                  |
| 4       | Participated in the ZTF workshop of South zone at Manipal, Karnataka.   | 26 <sup>th</sup> &<br>27 <sup>th</sup> Nov.<br>2012 | Dr Prahlad Kumar,<br>Director  |
| 5       | Participated in the RNTCP National Workshop on standards for TB care in India at New Delhi.                                   | 12-14 <sup>th</sup><br>Dec. 2012                    | Dr Prahlad Kumar,<br>Director<br>Dr V K Chadha<br>Public Health Consultant |

### e.Meetings

#### At NTI

| <b>Sl. No.</b> | <b>Meetings/CME</b>  | <b>Date</b>                                   | <b>Faculty</b>  |
|----------------|--|---|---|
| 1              | Meeting of sub group for ORs related to TB burden estimation   | 12 <sup>th</sup> & 13 <sup>th</sup> May 2012  | Dr Prahlad Kumar,<br>Director<br>Dr V K Chadha<br>Public Health Consultant  |
| 2              | RNTCP National Review meeting of STOs  | 9 <sup>th</sup> & 10 <sup>th</sup> June 2012  | Dr Prahlad Kumar,<br>Director<br>Dr V K Chadha<br>Public Health Consultant,<br>Dr. Preetish S.<br>Vaidyanathan,<br>CMO (NFSG) |
| 3              | RNTCP Regional Review meeting on Programmatic Management of Drug Resistant TB, South and West states                                       | 11 <sup>th</sup> - 12 <sup>th</sup> June 2012 | Dr Prahlad Kumar,<br>Director<br>Dr. S. Anand,<br>Consultant Microbiologist   |
| 5              | Meeting of sub-group for ORs related to TB burden estimation   | 18 <sup>th</sup> - 19 <sup>th</sup> July 2012 | Dr Prahlad Kumar,<br>Director<br>Dr V K Chadha<br>Public Health Consultant  |
| 6              | Chaired the meeting of 'development of case-based electronic monitoring system' at NTI, officials from CTD and experts from IRL Hyderabad. | 20 <sup>th</sup> July 2012                    | Dr Prahlad Kumar,<br>Director<br>Dr. Preetish S.<br>Vaidyanathan,<br>CMO-NFSG<br>Mr. Jitendra, I/c CTU                        |
| 7              | Review Meeting of Regional Directors The meeting was chaired by Dr. Jagdish Prasad, DGHS   | 22 <sup>nd</sup> - 23 <sup>rd</sup> Oct 2012  | Dr Prahlad Kumar,<br>Director   |



## Outside NTI

| Sl. No | Meetings  | Date  | Resource person  |
|--------|---|---|--|
| 1.     | Meeting with Dr Ranjani Ramachandran, WHO and Dr Kulshrestha, CTD regarding preparing TSA with WHO for strengthening the laboratory component of NTI, Bangalore and conducting DRS survey in Rajasthan.                       | 2 <sup>nd</sup> Apr 2012                          | Dr Prahlad Kumar, Director   |
| 2.     | Meeting of the SEAR Technical Working Group on TB held in Delhi   | 11-13 <sup>th</sup> April 2012                    | Dr Prahlad Kumar, Director   |
| 3.     | Meeting of technical expert group on TB burden estimation in India, held at LRS Institute, New Delhi  | 23 <sup>rd</sup> April 2012                       | Dr Prahlad Kumar, Director<br>Dr V K Chadha<br>Public Health Consultant    |
| 4.     | Meeting of National Task Force for involvement of corporate hospitals and Institutions offering DNB (Diplomate National Board) under RNTCP, held at Nirman Bhavan, New Delhi.   | 24 <sup>th</sup> April 2012                       | Dr Prahlad Kumar, Director   |
| 5.     | Meeting with Dr Nevin Wilson, South-East Asia Regional Office, Union, at New Delhi to discuss collaboration between Union and NTI in the field of Operations Research, Human Resource Development and research dissemination. | 2 <sup>nd</sup> May 2012                          | Dr Prahlad Kumar, Director   |
| 6.     | Pre-accreditation visit to IRL Jammu, along with team consisting of experts from WHO, NTI and State Government of J&K.  | 8 <sup>th</sup> & 9 <sup>th</sup> May 2012        | Dr Prahlad Kumar, Director   |
| 7.     | NRL and IRL Microbiologist meeting on "Laboratory Issues" at New Delhi  | 11 & 12 <sup>th</sup> May 2012                    | Dr. S. Anand<br>Consultant<br>Microbiologist                               |
| 8.     | Regional laboratory and PMDT review meeting of North Zone at Chandigarh.  | 17 <sup>th</sup> & 18 <sup>th</sup> May 2012      | Dr Prahlad Kumar, Director<br>Dr. S. Anand<br>Consultant<br>Microbiologist |
| 9.     | National consultation workshop for revision of existing NGO-PPM scheme under RNTCP at LRS Institute, New Delhi.   | 30 <sup>th</sup> May to 1 <sup>st</sup> June 2012 | Dr Prahlad Kumar, Director   |

| <b>Sl. No</b> | <b>Meetings</b>  | <b>Date</b>                                       | <b>Resource person</b>   |
|---------------|--|---|--|
| 10.           | PMDT review meeting of North East Zone at Shillong, Meghalaya.   | 4 <sup>th</sup> & 5 <sup>th</sup> June 2012       | Dr Prahlad Kumar, Director<br>Dr. S. Anand Consultant Microbiologist |
| 11.           | PMDT review meeting of Karnataka   | 2 <sup>nd</sup> July 2012                         | Dr Prahlad Kumar, Director   |
| 12.           | Meeting of 'Technical working group for laboratory scale up plan for RNTCP'.   | 24 <sup>th</sup> July 2012                        | Dr Prahlad Kumar, Director<br>Dr. S. Anand Consultant Microbiologist |
| 13.           | Meeting with state officials of Gujarat to discuss the functioning of STDC, Ahmedabad and on strengthening of rolling out of PMDT in all the districts of Gujarat. | 25 - 27 <sup>th</sup> July 2012                   | Dr Prahlad Kumar, Director   |
| 14.           | Meeting at BMHRC, Bhopal for Evaluation to select potential National Reference Laboratory under RNTCP  | 06 <sup>th</sup> August 2012                      | Dr. S. Anand Consultant Microbiologist                               |
| 15.           | GOI-WHO Joint Monitoring Meeting (JMM) for RNTCP at New Delhi  | 21 <sup>st</sup> - 31 <sup>st</sup> August 2012   | Dr Prahlad Kumar, Director   |
| 16.           | GOI-WHO Joint Monitoring Meeting (JMM) for RNTCP at New Delhi  | 27 <sup>th</sup> - 31 <sup>st</sup> August 2012   | Dr V K Chadha Public Health Consultant                               |
| 17.           | Meeting on Consultation on new diagnostics and algorithms for RNTCP  | 1 <sup>st</sup> Sept 2012                         | Dr Prahlad Kumar, Director   |
| 18.           | National OR committee meeting at LRS Institute, New Delhi and presented DRS protocol.  | 07 <sup>th</sup> Sept 2012                        | Dr Prahlad Kumar, Director   |
| 19.           | ZTF workshop at Nagpur.  | 4 <sup>th</sup> & 5 <sup>th</sup> Oct. 2012       | Dr Prahlad Kumar, Director   |
| 20.           | ZTF workshop at Kochi, Kerala.   | 11 <sup>th</sup> & 12 <sup>th</sup> October 2012  | Dr Prahlad Kumar, Director   |
| 21.           | Annual Review meeting of Laboratories under RNTCP at Kolkata, West Bengal  | 15 <sup>th</sup> to 17 <sup>th</sup> October 2012 | Dr. S. Anand Consultant Microbiologist                               |
| 22.           | ZTF workshop, West zone at Rohtak, Karyana.  | 18 <sup>th</sup> & 19 <sup>th</sup> Oct. 2012     | Dr Prahlad Kumar, Director   |
| 23.           | ZTF workshop of North East zone at Shilong, Meghalaya.   | 1 <sup>st</sup> & 2 <sup>nd</sup> Nov. 2012       | Dr Prahlad Kumar, Director   |

| <b>Sl. No</b> | <b>Meetings</b>   | <b>Date</b>                                   | <b>Resource person</b>  |
|---------------|---|---|---|
| 24.           | Meeting at LRS Institute, New Delhi of Expert group for assessment of TB burden.  | 20 <sup>th</sup> Nov 2012                     | Dr Prahlad Kumar, Director<br>Dr V K Chadha<br>Public Health Consultant |
| 25.           | Meeting with Dr Srinivas, National Programme Officer, WHO at WHO Office, New Delhi about WHO support to Drug Resistant Survey and Operational Research capacity building. | 21 <sup>st</sup> Nov 2012                     | Dr Prahlad Kumar, Director  |
| 26.           | Meeting held at PATH, India office, New Delhi regarding Revision of Compendium of training needs  | 22 <sup>nd</sup> Nov 2012                     | Dr. Preetish S. Vaidyanathan, CMO-NFSG                                  |
| 27.           | Second meeting held at PATH, India office, New Delhi regarding Revision of Compendium of training needs   | 10 <sup>th</sup> Dec 2012                     | Dr. Preetish S. Vaidyanathan, CMO-NFSG                                  |
| 28.           | Supervisory visit to various diagnosis and treatment centers in Rajasthan involved in rolling out PMDT services   | 15 <sup>th</sup> – 24 <sup>th</sup> Dec. 2012 | Dr Prahlad Kumar, Director  |
| 29.           | Meeting of National expert committee on diagnosis and management of TB under RNTCP at Nirman Bhavan, New Delhi.   | 3 <sup>rd</sup> & 4 <sup>th</sup> Jan. 2013   | Dr Prahlad Kumar, Director  |
| 30.           | RNTCP biannual national review meeting of STOs and RNTCP consultants at New Delhi.  | 9 <sup>th</sup> to 11 <sup>th</sup> Jan. 2013 | Dr Prahlad Kumar, Director  |
| 31.           | Visited STDC and IRL Kolkata, West Bengal (WB) to discuss plan of action by the state for detection and follow up of MDR cases  | 23 <sup>rd</sup> January 2013                 | Dr Prahlad Kumar, Director  |
| 32.           | PMDT review meeting of East & North-East states at Kolkota.   | 24 <sup>th</sup> & 25 <sup>th</sup> Jan. 2013 | Dr Prahlad Kumar, Director<br>Dr. S. Anand<br>Consultant Microbiologist |
| 33.           | Meeting with Principal Secretary, WB, regarding strengthening of diagnostic facilities at WB with the support of NRL, NTI to detect and follow up of MDR cases in WB.     | 25 <sup>th</sup> Jan 2013                     | Dr Prahlad Kumar, Director  |
| 34.           | Meeting of National Operational Research committee under RNTCP at LRS Institute, New Delhi.   | 28 <sup>th</sup> Jan 2013                     | Dr Prahlad Kumar, Director  |
| 35.           | Meeting of Directors of National Institutes at DDG's Chamber, CTD, Delhi.   | 29 <sup>th</sup> Jan 2013                     | Dr Prahlad Kumar, Director  |

| <b>Sl. No</b> | <b>Meetings</b>  | <b>Date</b>  | <b>Resource person</b>                      |
|---------------|--|--|---|
| 36.           | Meeting with Dr Tom Frieden, Director, Centre of Disease Control (CDC) at DDG's Chamber at CTD and appraised him about the support provided by CDC in the technical matters pertaining to RNTCP and NTI about the information sought for conducting DRS survey in India during 2013. | 29 <sup>th</sup> Jan 2013                          | Dr Prahlad Kumar, Director                  |
| 37.           | National Task Force meeting at Jaipur, Rajasthan.  | 31 <sup>st</sup> Jan & 1 <sup>st</sup> Feb 2013    | Dr Prahlad Kumar, Director                  |
| 38.           | Meeting of "Expert Committee on regulation of newer anti-TB drugs in India" at ICMR, New Delhi.  | 11 <sup>th</sup> Feb. 2013                         | Dr Prahlad Kumar, Director                  |
| 39.           | Regional PMDT Review meeting for Southern states at Trivandrum, Kerala   | 14 <sup>th</sup> - 15 <sup>th</sup> February 2013  | Mr. George Sebastian, Jr. Bacteriologist    |
| 40.           | Regional PMDT review meeting of western states in Aurangabad   | 21 <sup>st</sup> & 22 <sup>nd</sup> Feb. 2013      | Dr Prahlad Kumar, Director                  |
| 41.           | Regional PMDT Review meeting for Northern states at Lucknow, Uttar Pradesh   | 28 <sup>th</sup> Feb to 1 <sup>st</sup> March 2013 | Mrs. Hema Sundram Consultant Microbiologist |
| 42.           | RNTCP workshop for finalizing Mumbai specific action plan for TB control and also had a meeting with Mrs Manisha Mhaiskar, Additional Municipal Commissioner, Mumbai, regarding technical support by NTI, Bangalore, for capacity building for detection and management of MDR-TB.   | 24 <sup>th</sup> & 25 <sup>th</sup> Feb. 2013      | Dr Prahlad Kumar, Director                  |
| 43.           | Attended the World TB Day function organized by Government of Karnataka.   | 24 <sup>th</sup> March 2013                        | Dr Prahlad Kumar, Director                  |
| 44.           | Capacity Building of IRL, Pune and BJ Medical College, Pune  | 09 <sup>th</sup> to 13 <sup>th</sup> March 2013    | Mr. HD Surendra Lab Technician              |

### **g. Central Internal Evaluation**

The faculty of the Institute assisted the Central TB Division in Internal Evaluation with the objective of assessing the achievements and constraints encountered in implementation of RNTCP and to provide recommendations for necessary corrective actions. The details of such visits are as under:

| <b>Sl. No.</b> | <b>Name &amp; Designation of the officer participated</b> | <b>Period</b>                                       | <b>Place of conducting CIE</b> |
|----------------|---|---|--------------------------------|
| 1              | Dr. N.Somashekar,<br>TB Specialist                        | 09 <sup>th</sup> to 13 <sup>th</sup><br>April 2012  | Hyderabad,<br>Andhra Pradesh   |
| 2              | Dr. N.Somashekar,<br>TB Specialist                        | 09 <sup>th</sup> -13 <sup>th</sup><br>July 2012     | Bhopal,<br>Madhya Pradesh      |
| 3              | Dr SK Tripathi<br>TB Specialist                           | 16 <sup>th</sup> to 20 <sup>th</sup><br>April, 2012 | Uttar Pradesh                  |
| 4              | Dr SK Tripathi<br>TB Specialist                           | 18 <sup>th</sup> to 23 <sup>rd</sup><br>June 2012   | Rajasthan                      |
| 5              | Dr V K Chadha<br>Public Health Consultant                 | 8 <sup>th</sup> - 12 <sup>th</sup><br>Oct 2012      | Orissa                         |
| 6              | Dr SK Tripathi<br>TB Specialist                           | 20 <sup>th</sup> to 25 <sup>th</sup><br>Nov 2012    | Jharkhand                      |
| 7              | Dr SK Tripathi,<br>TB Specialist                          | 4 <sup>th</sup> to 8 <sup>th</sup><br>Mar 2013      | Haryana                        |

## h. INSTITUTIONAL ETHICS COMMITTEE MEETING

| Meeting  | Details   | Date & Place                       | Participants  |
|--|---|------------------------------------|---|
| 14 <sup>th</sup><br>Institution<br>al Ethics<br>Committee<br>Meeting | <p>1. For discussion on the following 4 protocols and ethical issues pertaining to each protocol:</p> <ul style="list-style-type: none"> <li>a. Role of chest X-ray in early detection of smear negative pulmonary tuberculosis by using Gene Expert.</li> <li>b. Evaluation of diagnostic algorithm among registered new smear negative pulmonary TB patients under RNTCP in Karnataka state.</li> <li>c. First Nation-wide anti-tuberculosis drug resistance survey, India (2013-2014).</li> <li>d. Effectiveness of community based observation of treatment for tuberculosis in Bangalore city in 2010-11.</li> </ul> <p>2. Additionally, nine OR proposals developed during the OR workshop organized by CTD-NTI-Union-WHO-CDC were also presented to the committee for ethical clearance.</p> | 27.10.2012<br>at NTI,<br>Bangalore | Chaired by<br>Hon'ble<br>Justice V.S.<br>Malimath<br>and attended<br>by<br>Institutional<br>Ethical<br>Committee<br>members |

## 8. 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.      | Prof. Vijaya, Indian Institute of Science, Bangalore,                                  | 20 <sup>th</sup> Apr 2012 | To finalise the protocol on vaccine development to be submitted to DBT. Additional Director, I/c Animal Lab and Jr. Bacteriologist took part in the discussion.   |
| 2       | State TB Officer and Director, STDC, Karnataka   | 7 <sup>th</sup> May 2012  | Discussion about memorandum of Understanding (MOU) between STO, Karnataka and Director, NTI, to provide technical support to RNTCP, Karnataka by NTI.   |
| 3       | STO, Rajasthan   | 11 <sup>th</sup> May 2012 | About rolling out of PMDT in the state of Rajasthan and providing support from NTI for strengthening of lab component in the state of Rajasthan.  |
| 4       | Dr Devesh Gupta, Additional DDG, CTD,  |                           | To discuss the technical support from NTI for organization of logistic management training to be organized by CTD at NTI  |
| 5       | Dr K.K. Jha, Director, SAARC TB HIV & AIDS Centre, Kathmandu, Nepal                    | 22 <sup>nd</sup> May 2012 | To finalise the arrangements for inaugural session of the "SAARC Regional TOT for Microbiologists on culture and DST of M.tuberculosis" to be held at NTI from 23-29 <sup>th</sup> May 2012. I/c Lab & Addl. Director and I/c NRL took part in the discussion.  |
| 6       | The Union Secretary for Health & Family Welfare, Government of India, Dr P.K. Pradhan. | 27 <sup>th</sup> Jun 2012 | To see functioning of the Institute. A meeting was held with the Divisional and Unit Heads. Director made a presentation of the activities being held at the Institute and sought guidance from the Secretary for further strengthening the activities at the Institute. He visited various sections of the Institute and provided suggestions for further strengthening the activities |

| <b>Sl. No.</b> | <b>Name of visitor</b>   | <b>Date</b>                                    | <b>Details of visit</b>   |
|----------------|--|--|---|
| 7.             | DDG (TB), Dr Ashok Kumar & Dr Kiran Rade and A.V. Bansal, CTD Consultants                  | 8 <sup>th</sup> June 2012                      | To review various activities being held in NTI and to review arrangements being made for STO & Consultants meeting to be held at NTI from 9-10 <sup>th</sup> June 2012. I/c Admn., I/c Training and I/c Lab also participated in the discussion.  |
| 8              | Shri Sudip Bandyopadhyay, Hon'ble Union Minister of State for H & FW, Government of India, | 4 <sup>th</sup> Jul 2012                       | To see functioning of the Institute. A presentation on various activities carried out at NTI was made by the Director. Director accompanied him to HRD and NRL Divisions & briefed about the activities of the Divisions and facilitated interaction with the staff working in these two Divisions. |
| 9              | Dr Ravindra Reddy and Dr Adhikari from PATH India  | 20 <sup>th</sup> July 2012                     | Regarding development of LPA and liquid lab supported by PATH India.  |
| 10             | Dr Ranjani Ramachandran, WHO focal point   | 9 <sup>th</sup> & 10 <sup>th</sup> August 2012 | To discuss<br>1. the draft SOP on EQA. Dr Anand participated in the discussion; and<br>2. preparation being made in NRL NTI for the visit of team from WHO Headquarters, Geneva, to accord the status of Supra National Reference Laboratory to NTI NRL.  |
| 11             | Dr Moonan Patric, CDC Atlanta and Dr Ranjani Ramachandran, WHO Focal Point, WHO, New Delhi | 3 <sup>rd</sup> Sept 2012                      | To prepare protocol "Drug Resistant Survey" India.  |
| 12             | The State TB Officer and Director, STDC, Karnataka.  | 4 <sup>th</sup> Sept. 2012                     | Discussion about technical support to Karnataka state for PMDT to be provided by NTI  |
| 13             | Dr Ranjani Ramachandran  | 5 <sup>th</sup> Sept 2012                      | Discussion regarding preparation of NRL-NTI document  |
| 14             | Dr Rohini from AIIMS, New Delhi.   | 5 <sup>th</sup> Sept 2012                      | To discuss collaboration between the laboratories of NTI and AIIMS  |
| 15             | Dr Ramesh from NIRT, Chennai.  | 10 <sup>th</sup> Sept 2012                     | To discuss operationalization of sequencing lab at NRL, NTI   |
| 16             | Dr Anil, Director, STDC, Karnataka   | 14 <sup>th</sup> Sept 2012                     | Regarding NTI support to PMDT to 8 districts of Karnataka.  |
| 17             | Dr PR Narayanan, Former Director, NIRT, Chennai,.  | 19 <sup>th</sup> Sept 2012                     | About development of new diagnostic tool for detection of MDR-TB  |



| <b>Sl. No.</b> | <b>Name of visitor</b>  | <b>Date</b>                | <b>Details of visit</b>   |
|----------------|---|----------------------------|---|
| 18             | Dr Peter Small from Bill Gates Foundation along with Dr PR Narayanan, Former Director, NIRT, Chennai.   | 20 <sup>th</sup> Sept 2012 | To discuss case based electronic monitoring system in RNTCP and to develop a model RNTCP district as per new strategic plan 2012-17   |
| 19             | Sr. Regional Director, Bangalore; STO, Karnataka; Director, STDC, Karnataka and Dr Shashidar Buggi, Director, RGICD, Bangalore  | 21 <sup>st</sup> Sept 2012 | To review the arrangements for the visit of Joint Secretary (PH), Min of H & FW, GOI, to Bangalore.   |
| 20             | Dr R S Shukla, Joint Secretary (PH), Min of H & FW, GOI   | 24 <sup>th</sup> Sept 2012 | To see functioning of the Institute. Director made a presentation on the activities of NTI and had interaction with him along with faculty members of NTI and inaugurated LPA training at ICELT, NTI.<br>Director held meeting with JS (PH) on 23 <sup>rd</sup> to facilitate his inspection to various sections of NTI |
| 21             | Dr Ashok Kumar, DDG (TB), CTD, New Delhi  | 26 <sup>th</sup> Sept 2012 | For SDTC workshop at NTI. Director held discussion on various issues of NTI.  |
| 22             | Dr Neeraj Kulshrestha, Addl. DDG, Dte.GHS, New Delhi  | 28 <sup>th</sup> Sept 2012 | Discussion to finalize presentation to be made in the ZTF workshop.   |
| 23             | Dr Ranjani Ramachandran, WHO Focal Point for a.   | 28 <sup>th</sup> Sept 2012 | Discussion regarding sample size estimation for DRS protocol  |
| 24             | The STO & STDC Director, Karnataka  | 1 <sup>st</sup> Oct 2012   | Preparation of an action plan for providing NTI support to PMDT in 8 districts of Karnataka.  |
| 25             | Dr Ranjani Ramachandran, WHO Focal Point  | 7 <sup>th</sup> Oct 2012   | To finalise the Agenda for the visit of WHO team to NTI lab.  |
| 26             | Dr Chris Gilpin & Dr Mirzayev Faud from WHO Geneva; Dr Robert Matiru from UNITAID; Dr Paramasivan, from FIND; Ranjani Ramachandran from WHO, New Delhi; and Dr Mayank Ghedia from CTD | 8 <sup>th</sup> Oct 2012   | To discuss about according the status of supra regional lab to NTI lab.   |
| 27             | Dr Peter Small and his team   | 9 <sup>th</sup> Oct 2012   | For a discussion on development of Model DOTS District and also cost based electronic monitoring system. Dr Preetish and Sri Jithendra participated in the discussion.  |

| <b>Sl. No.</b> | <b>Name of visitor</b>  | <b>Date</b>               | <b>Details of visit</b>   |
|----------------|---|---------------------------|---|
| 28             | Dr Jagdish Prasad, DG, New Delhi.   | 22 <sup>nd</sup> Oct 2012 | Visited various sections of the Institute. Director accompanied him and made presentation on the activities of the Institute and also had interaction with him to seek his guidance on strengthening various Divisions of the Institute |
| 29             | STO & STDC Director, Karnataka  | 6 <sup>th</sup> Nov 2012  | To discuss about providing NTI lab support for rolling out PMDT in 12 districts of Karnataka  |
| 30             | Dr Devesh Gupta, Addl. DG (CTD), New Delhi  |                           | To plan organization of various training programmes in the field of TB-HIV at NTI, Bangalore  |
| 31             | Dr Moonan Patric and Ms Lusia from CDC Atlanta,   | 13 <sup>th</sup> Nov 2012 | To discuss various components of DRS protocol to be carried out at NTI with the support of CDC Atlanta.   |
| 32             | Dr Moonan Patric and Dr Ranjani Ramachandran, WHO Focal Point   | 14 <sup>th</sup> Nov 2012 | To finalize sample size of the DRS protocol. Dr Chadha, I/c HRD and Dr Anand, I/c NRL took part in the discussion.  |
| 33             | Dr Moonan Patric, Dr Ranjani Ramachandran   | 15 <sup>th</sup> Nov 2012 | To finalise the DRS protocol. Discussions were also held for capacity building in the field of Operations Research in India with the support of WHO and CDC Atlanta. Dr Anand took part in the discussion.                              |
| 34             | Dr Ranjani Ramachandran, WHO focal point; Dr. Mayank Ghedia, CTD, New Delhi; Dr. Shikha Dhawan, CTD, New Delhi; Dr. N S Gomathi, NIRT, Chennai; Dr. V P Myneedu, LRS Institute, New Delhi; and Dr. D Chauhan, JALMA, Agra | 18 <sup>th</sup> Jan 2013 | For discussing strengthening of state labs for performing EQA and culture & DST for primary and secondary anti-TB drugs.  |
| 35             | Dr Neeraj Kulshrestha, Addl. DDG, CTD, New Delhi  | 22 <sup>nd</sup> Jan 2013 | For a review meeting along with Director and Heads of various Divisions and Units of NTI.   |
| 36             | A team from Bill & Melinda Gates Foundation   | 5 <sup>th</sup> Feb 2013  | For a discussion on ICT initiatives (case based electronic recording and reporting) at NTI, Bangalore.  |
| 37             | Dr Ajitkumar, Associate Prof., Dept. of Microbiology & Cell Biology, Indian Institute of Science (IISc), Bangalore,   | 7 <sup>th</sup> Feb 2013  | For a discussion on joint collaborative activities between IISc., and NTI, using animal lab facility for his studies.   |

| <b>Sl. No.</b> | <b>Name of visitor</b>  | <b>Date</b>               | <b>Details of visit</b>  |
|----------------|---|---------------------------|--|
| 38             | Dr Srinath from Union, New Delhi  | 12 <sup>th</sup> Feb 2013 | To discuss arrangement being made for capacity building workshop on Operational Research to be held at NTI in the month of March 2013.   |
| 39             | Sri Chatter Pal, Deputy Director (Admn.), CTD, DteGHS, New Delhi.   | 07 – 08 March 2013        | To discuss various administrative issues of NTI pending in CTD and modalities to fill up the vacant posts at NTI and support to be provided by Administrative Wing of DteGHS, in this regard   |
| 40             | State TB Officer, Director, STDC, RNTCP Consultants of Karnataka and DTO, Kolar,  | 8 <sup>th</sup> Mar 2013  | To discuss details of development of Model DOTS districts as per new strategic plan of RNTCP in the district of Kolar, Karnataka. I/c HRD Division, I/c Training Unit and I/c CTU also participated in the discussion.   |
| 41             | Dr Moonan Patric from CDC Atlanta   | 11 <sup>th</sup> Mar 2013 | To discuss the support to be provided to CDC Atlanta on DRS India 2013-14, Model DOTS District and hosting estimation of service delivery in TB programme to be developed in the district of Kolar, Karnataka, capacity building of human resource of TB control in India, DRS in private sector and ICT in the monitoring of TB control programme in India. |
| 41             | Dr Moonan Patric from CDC Atlanta; Dr Sreenivas, National Programme Officer, WHO RNTCP India; and Dr Ranjani Ramachandran, Lab focal point, WHO RNTCP India | 15 <sup>th</sup> Mar 2013 | To prepare action plan of DRS survey of India, model DOTS to be developed in the district of Kolar, Karnataka and support to be provided by CDC Atlanta to HRD, India's TB control programme. I/c HRD, I/c NRL and I/c CTU participated in the discussion.   |

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