

# **NATIONAL TUBERCULOSIS INSTITUTE BENGALURU**



**Government of India  
NATIONAL TUBERCULOSIS INSTITUTE  
Ministry of Health and Family Welfare  
'Avalon', No.8, Ballari Road, Bengaluru-560 003  
INDIA**

**ANNUAL REPORT  
2021-22**

**WHO Collaborating Centre  
For  
Tuberculosis Research and Training**

**ANNUAL REPORT  
2021-2022**



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INDIA**

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## **LIST OF ABBREVIATIONS**

ACSM	Advocacy Communication & Social Mobilization
AI	Artificial intelligence
BSc(N)	BSc in Nursing
CBNAAT	Cartridge Based Nucleic Acid Amplification Test
CDSCO	The Central Drug Standards Control Organization
CPWD	Central Public Works Department
CTD	Central Tuberculosis Division
DCGI	Drug Controller General of India
DRTB	Drug Resistance Tuberculosis
DST	Drug Susceptibility Testing
DTC	District Tuberculosis Centre
DTO	District Tuberculosis Officer
ECHO	Extension for Community Healthcare Outcomes
ERD	Epidemiology and Research Division
EQA	External Quality Assurance
FIND	Foundation for Innovative New Diagnostics
FMR	Foundation for Medical Research
GCP	Good Clinical Practices
GeM	Government e-Market
GNM	General Nursing and Midwifery
HRD	Human Resource Development
IEC	Institutional Ethics Committee
ICELT	International Centre of Excellence for Laboratory Training
ICMR	Indian Council of Medical Research
ICT	Immuno chromatographic Test

IRL	Intermediate Reference Laboratory
JSS	Joint Supportive Supervision
LC	Liquid Culture
LIMS	Laboratory Information Management System
LPA	Line Probe Assay
LT	Laboratory Technician
MGIT	Mycobacterial Growth Indicator Tube
MO	Medical Officer
MOTC	Medical Officer TB Control
MOHFW	Ministry of Health and Family Welfare
NABL	National Accreditation Board of Laboratories
NAAT	Nucleic Acid Amplification Test
NIRT	National Institute for Research in Tuberculosis
NORC	National Operation Research Committee
NRL	National Reference Laboratory
NTEP	National Tuberculosis Elimination Programme
NTEG	National Technical Expert group
NTI	National Tuberculosis Institute
NTM	Non Tuberculosis Mycobacterium
OR	Operational Research
OSE	On-Site Evaluation
PMDT	Programmatic Management of Drug Resistant Tuberculosis
POD	Prevention of Disease
RDC	Research Documentation Cell
STDC	State Tuberculosis Training and Demonstration Center
STLS	Senior Tuberculosis Laboratory Supervisor
STO	State Tuberculosis Officer
TB	Tuberculosis
ToT	Training of Trainer
TU	Tuberculosis Unit
WGS	Whole genome sequencing
WHO	World Health Organization

## **FOREWORD**

It gives me immense pleasure to present the Annual report for the year 2021- 2022. This report highlights the major activities undertaken by the Institute during the year and has a blend of both administrative and technical activities.

The Institute has been functioning as the technical arm of the Central TB Division and also designated as WHO collaborating center. NTI is in the forefront of training large number of health personnel involved in TB Control Programme. The Technical Activities carried out at NTI include building the capacity of human resources for effective implementation of NTEP, and to undertake Operational Research to strengthen the roll out services under NTEP. The laboratory has been designated as one of the National Reference Laboratories in the country and is also NABL accredited. The NRL assess the quality of the sputum smear microscopy, molecular diagnostics (NAAT both Public & Private labs) and drug susceptibility/resistance testing services in the laboratory network under NTEP. A National database on tuberculosis research, an open access repository for abstracts of published scientific papers from all major national institutes is functional under the TB Net project. Director NTI is the member of most National Advisory Committees, NORC and NTEG on various thematic areas of NTEP.

The core activity of the Institute is to support human resource development and strengthen the capacity of programme managers through skill development activities relevant to NTEP. The Institute shoulders the responsibility of training medical and paramedical personnel from various states in several facets of Tuberculosis control. Due to the ongoing covid 19 pandemic at the initial part of the year, the number of trainings were reduced but were subsequently resumed observing the covid19 protocols. NTEP Modular Training for Programme Managers, NTEP modular training for medical officers, NTEP training for medical Postgraduate students, Comprehensive Training for Laboratory

Personnel, Whole Genome Sequencing (WGS) Training for Laboratory Personnel, Training courses for Laboratory Personnel in Line Probe Assay , Training in Liquid Culture and Drugs Sensitivity and Virtual trainings like NTEP sensitization cum training on “TB Operational Research” and Management of Anti-TB drugs and Lab Consumables under NTEP were the trainings conducted by NTI during the year. The Institute also provided sensitization training on TB and NTEP, through virtual and physical mode for the para-medical students and students pursuing life sciences. The ICELT at NTI imparts trainings on WHO endorsed Newer Diagnostic Techniques for TB.

Operational research is one of the prime functions of the institute. The status of ongoing and forthcoming research studies are briefly described in this report. The ongoing study during the period under report was “A phase III randomized, double blind, placebo controlled trial to evaluate the efficacy and safety of VPM1002 and Immuvac (Mw) vaccines in preventing tuberculosis in healthy household contacts of newly diagnosed sputum positive pulmonary TB patients”. Protocol on “Factors associated with unsuccessful treatment outcomes of Hr-TB (isoniazid-resistant, Rifampicin-sensitive TB) patients treated with 6 to 9 months of 4 drug all oral H mono/poly regimen under NTEP in southern Karnataka: A 2-year post-treatment follow-up study” was prepared and submitted to CTD and National Operation Research Committee

NTI officers actively participated in the Joint supportive supervision of National TB Elimination Program performance of the States conducted by Central TB Division in collaboration with partner organization. During the period of reporting, Joint supportive supervision was done for Mizoram, Arunachal Pradesh, Telangana, Andhra Pradesh, Bihar, Tripura, Gujarat & Chhattisgarh

The NRL of NTI provides diagnostic support to 3 districts of Bangalore and supervises and monitors the quality of sputum smear microscopy network across three States-Karnataka, Maharashtra and Rajasthan. NTI is also assessing the quality of all NTEP certified/approved NAAT sites all over the



country. The NRL is responsible for imparting training to laboratory personnel and capacity building of IRLs for the management of Drug Resistant TB. The NRL plays an important role in accreditation of the state level Intermediate Reference Laboratories (IRLs), Medical colleges and other private laboratories for the culture and Drug Sensitivity testing to detect Drug Resistant Tuberculosis (DR-TB). The NRL is also mentoring the NRL at Bhopal Memorial hospital & Research Centre, Bhopal.

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.

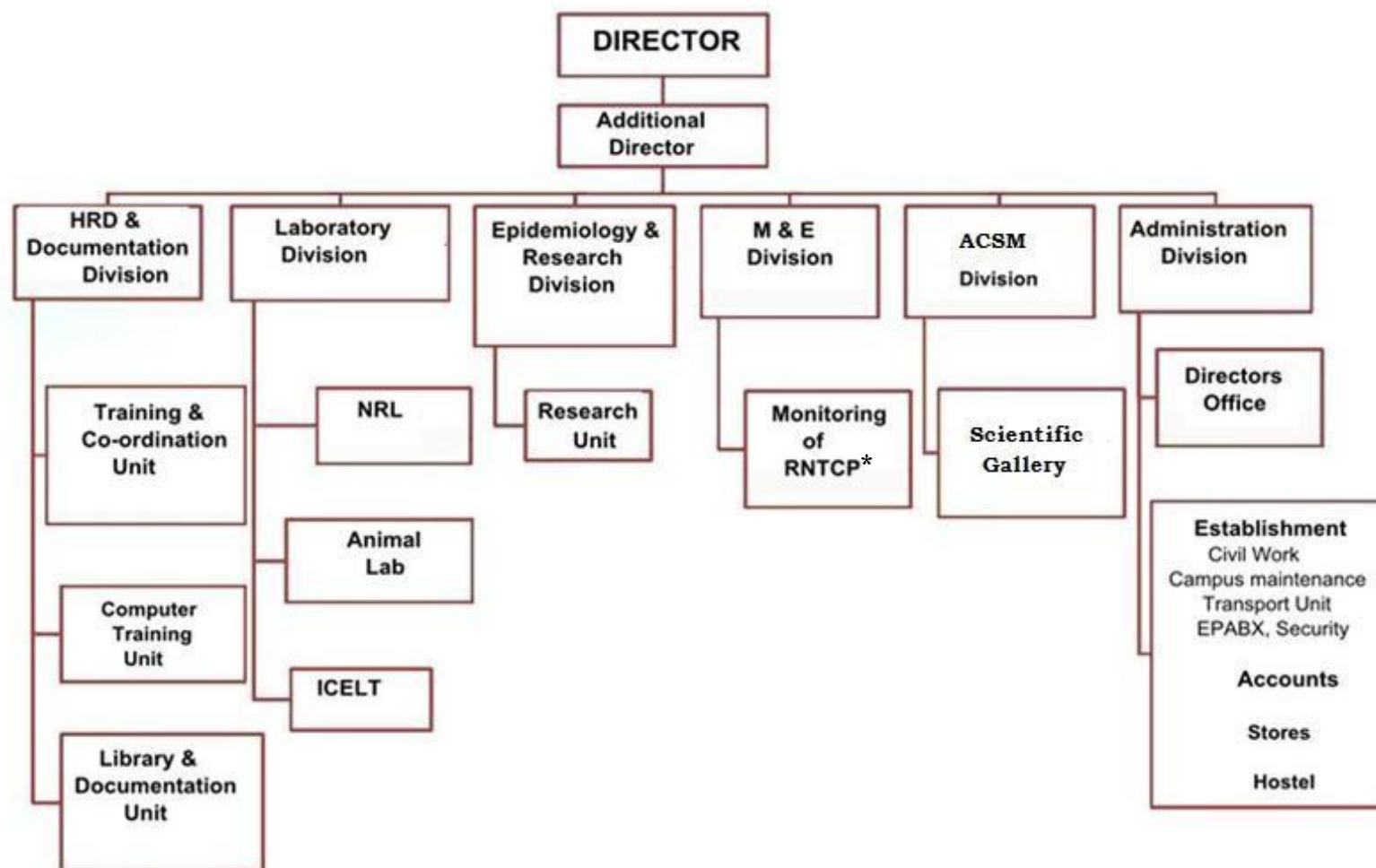
I acknowledge the co-operation, hard work and diligence of all the members of the NTI family and I solicit the same degree of motivation and dedication from all in times to come.

I also express my gratitude to the Ministry of Health and Family Welfare, Government of India and the Central TB Division for their continuous guidance, support and encouragement.

**Dr. Somashekar N.**

Director

# ORGANOGRAM



**RNTCP\*- now NTEP**

## **1. Human Resource Development & Documentation**

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One of the salient functions of the Institute is to support human resource development by strengthening and sustaining the capabilities of programme managers through skill development activities relevant to the National TB Elimination Programme.

The three units of the Human Resource Development and Documentation Division are:

- A. Training and Coordination Unit**
- B. Computer Training Unit**
- C. Library & Documentation Unit**

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

The objective of the NTEP training programmes is to ensure that programme managers, teachers of medical colleges, medical officers and paramedical staff are equipped with adequate knowledge and skill set required to implement NTEP activities which includes quality assured diagnosis of TB, management of drug sensitive and drug resistant TB, TB comorbidities, supervision and monitoring of the program, data management and forging partnerships with all sectors involved in TB elimination activities.

Training activities at NTI pertaining to NTEP are coordinated by the HRD unit at Central Tuberculosis Division (CTD). The tentative plan for training activities to be held at NTI is prepared for the ensuing year and sent to CTD, which in turn communicates the same to all State TB Officers. This ensures a staggered nomination of eligible candidates in appropriate batch sizes and allows for suitable time to ensure relieving of the participants from their offices for attending the training programmes.

The Training Unit works synchronously with the Computer Training Unit, Hostel, Stores and Transport Units of the institute to ensure smooth organization of training activities. Training courses and workshops with respect to many aspects of TB elimination are conducted to accommodate the ever-increasing requirement of trained personnel.

The details of the various training programmes conducted in the Institute are as follows

**1. NTEP Modular Training for Programme Managers and Medical Officers:**

<b>S1. No.</b>	<b>Category of personnel</b>	<b>Period</b>	<b>No. of Participants</b>
1.	DTO's of Karnataka	13.09.2021 - 25.09.2021	09
2.	DTO's & MOTC's of Chhattisgarh and Kerala	06.12.2021 - 18.12.2021	09

**2. NTEP Modular Training for Medical Officers**

<b>S1. No.</b>	<b>Category of personnel</b>	<b>Period</b>	<b>No. of Participants</b>
1.	MO's from PHC's of Bengaluru Urban Dist.	09.08.2021 - 13.08.2021	19

**3. NTEP Modular Training for Post Graduate Medical Students**

<b>S1. No.</b>	<b>Category of personnel</b>	<b>Period</b>	<b>No. of Participants</b>
1.	Post Graduate Students from Medical Colleges of Karnataka	26.07.2021 - 30.07.2021	13
2.		21.02.2022 - 25.02.2022	14

**4. Sensitization cum training on X-Reading & Interpretation with Case Scenario**

<b>S1. No.</b>	<b>Category of personnel</b>	<b>Period</b>	<b>No. of Participants</b>
1.	Post Graduate Students of Medical Colleges of Karnataka	01.09. 2021	07

**5. NTEP sensitization cum training on "TB Operational Research" (Virtual)**

<b>S1. No.</b>	<b>Category of personnel</b>	<b>Period</b>	<b>No. of Participants</b>
1.	Scientific Committee Members and NTEP Nodal Officers	21.01.2022 - 22.01.2022	68
2.	nominated by Medical Colleges of Karnataka	24.01.2022 - 25.01.2022	47

**6. Training courses for Laboratory Personnel in Line Probe Assay (first and second line)**

<b>Sl. No.</b>	<b>Category of personnel</b>	<b>Period</b>	<b>No. of Participants</b>
1.	Laboratory Personnel from different states	23.08.2021 – 27.08.2021	08
2.		25.10.2021 – 29.10.2021	08
3.		22.11.2021 – 26.11.2021	08

**7. Training in Liquid Culture and Drugs Sensitivity (first and second line)**

<b>Sl. No.</b>	<b>Category of personnel</b>	<b>Period</b>	<b>No. of Participants</b>
1.	Laboratory Personnel from different states	30.08.2021 – 03.09.2021	10
2.		06.12.2021 – 10.12.2021	13

**8. Comprehensive Training Course for Laboratory Personnel**

<b>Sl. No.</b>	<b>Category of personnel</b>	<b>Period</b>	<b>No. of Participants</b>
1.	Laboratory Personnel from different states and Newly recruited (contractual) Sr. Lab. Technicians. from NTI	08.11.2021- 20.11.2021	16

**9. Whole Genome Sequencing (WGS) Training for Laboratory Personnel**

<b>Sl. No.</b>	<b>Category of personnel</b>	<b>Period</b>	<b>No. of Participants</b>
1.	Laboratory Personnel from FMR (Trainers), The Union, NTI (Facilitators & Trainees), IRL (Ahmedabad), CMC-Vellore	29.11.2021- 03.12.2021	08

**10. Other trainings:**

- Sensitization on NTEP for STLSS of Karnataka was conducted in 4 Batches
- Truenat Training for LTs and STLSS of Truenat sites under Karnataka Division were conducted in 5 Batches.



**NTEP Modular Training**





### **NTEP Training –Postgraduates**



### **Training on EQA of sputum smear microscopy**





## **Training on LC & DST Testing for 1st & 2nd line anti TB drugs (MGIT 960)**



## **International Center of Excellence for Laboratory Training (ICELT)**

The activities of ICELT (in collaboration with FIND) are as follows)

1. Truenat EQA pilot - Panel preparation & verification
2. Truenat EQA pilot - Virtual sensitization
3. Truenat EQA Pilot round
4. Truenat training material & SOP's preparation
5. Truenat refresher training (Virtual)
6. Phase I – Truenat EQA panel preparation and verification
7. Phase I – Truenat EQA virtual sensitization
8. Phase I – Truenat EQA round (Year 2021-22)
9. Year 2021-22 - CBNAAT EQA virtual sensitization (Supported)
10. Year 2021-22 – CBNAAT EQA round (Supported)

ICELT conducted 67 trainings (19 physical and 48 virtual) on the above-mentioned activities. Total 4537 participants across the country attended these trainings.



## **B. Computer Training Unit**

The Computer Training Unit of the HRD Division supported the following major activities

- Facilitated in organizing need based training with relevance to programme and customized application related trainings
- Information and Communication Technology (ICT) Initiatives in the context of the Programme.
- Data Management and Statistical Analysis of research studies and other MIS.
- Catered to the maintenance of website / upkeep / up-gradation of IT infrastructure of the Institute.
- The unit provided assistance for 73 Video Conferencing related activities (both hosting & joining the VC).

### **NTI website support services:**

- Application server configuration and maintenance for the following websites: [www.ntiindia.org.in](http://www.ntiindia.org.in), [www.tbresearch.ntiindia.org.in](http://www.tbresearch.ntiindia.org.in).
- Domain renewal of NTI Websites.
- Maintaining E-mail services at NTI.
- Periodic uploading of content to NTI Website as per requirement.
- Maintaining and updating Department-wise Telephone directory on the NTI Website.
- Uploading Notifications for recruitments happening at NTI on the NTI Website.

### **Other IT Support Services:**

- Configuration of Broadband internet with the help of Internet service providers.
- Periodic licensing server configuration.
- Maintenance of access to subscribed Journals.
- Periodic maintenance of IT Equipment of the institute.
- Renewal of Rainmail Server services.

- The Rainmail server is maintained periodically. The service reports and log details are collected every day and modifications are done to the network as and when required.
- Periodic maintenance of Aadhaar Enabled Biometric Attendance System (AEBAS) undertaken.
- Periodic licensing server configuration such as Email Server, Proxy Server, Firewall, Anti-Virus protection etc.
- Coordinated with MTNL Cloud Attack intelligence network to blacklist and block suspicious IP addresses.
- Handling matters pertaining to AMC of computers / UPS and issues pertaining to server configuration / Internet services / mailing services.

#### **Other Support Services:**

- Internal shifting, configuration and stock updating of computers.
- Facilitated classes on NI-KSHAY.
- Coordinated with FIND and KPMG to facilitate maintenance of LIMS.
- Interaction with developer team to update the features of LIMS.
- Upkeep and configuration of Video Conference Unit to support all VC interactions like ECHO clinic.

### **C. Library and Documentation Unit**

#### **Activities undertaken by the library are:**

- As a resource center for information on tuberculosis.
- Collection and Maintenance of Core periodicals on TB & respiratory diseases, documents on TB research, reports, proceedings and souvenirs.
- Coordinating with CTU in digitization of important published research studies and hosting the same on the internet/intranet.
- Co-ordinated in periodical updating of the NTI website, both internet and intranet.

**Library Unit was Involved in following additional activities:**

- a) Renewal of subscription of journals and periodicals and inventory management.
- b) Subscribed and displayed the following journals and books received from various publishers and book suppliers during the year 2021-2022
  - 1. International Journal of TB & Lung Diseases
  - 2. Indian Journal of Tuberculosis
  - 3. Clinics in Chest Medicine
  - 4. Swamy's News & Swamy's Handbook
  - 5. Clinical Tuberculosis (Sixth Edition) By Lloyd N. Friedmam
  - 6. Text Book of Respiratory Medicine By Murray and Nadel's
  - 7. Tuberculosis & Non Tuberculosis Mycobacterial Disease By Surendra K. Sharma
  - 8. Pulmonary and Critical Care Medicine By S. K. Jindal
  - 9. Clinical Tuberculosis (Indian) By Rajendra Prasad
  - 10. MDR & XDR Tuberculosis By Rajendra Prasad
- c) Binding of previously, pending journal volumes were initiated.
- d) Co-coordinated with director's office to facilitate participation of NTI officials in conferences and workshops like 23rd NAPCON held on 31st March 2022 at Varanasi, UP.

## **2. LABORATORY DIVISION**

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The laboratory has been designated as one of the National Reference Laboratories in the country and also is NABL accredited. The National Reference Laboratory is quality tested by WHO Supra National Reference Laboratory (SNRL) Prince Leopold Institute of Tropical Medicine Antwerp, Belgium.

The NTI laboratory provides diagnostic support to 3 districts of Bangalore. NRL supervises and monitors the quality of the sputum smear microscopy, culture and drug susceptibility testing services in the network of laboratories in the three states allocated viz, Karnataka, Maharashtra and Rajasthan. NTI is responsible for assessing the quality of all NTEP certified/approved NAAT sites all over the country.

NRL is also 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) and also supporting State Level Drug Resistance Surveillance (DRS) and PMDT activities. NTI is currently mentoring the NRL at Bhopal Memorial hospital & Research Centre, Bhopal.

Besides these activities, laboratory division coordinates with training unit in conducting laboratory related trainings for laboratory personnel Comprehensive Training for Laboratory Personnel, Whole Genome Sequencing (WGS) Training for Laboratory Personnel, Training courses for Laboratory Personnel in Line Probe Assay, Training in Liquid Culture and Drugs Sensitivity were the trainings conducted during the year of reporting. The details of the laboratory trainings are already mentioned in training activities.

## Specimens processed at NRL NTI during the period April 2021 to March 2022

<b>Registration</b>		
Specimens registered ( <i>Sputum + XDR Culture +Universal DST+NTM and OP</i> )		8429
Number of Universal DST Samples <i>registered</i> for LPA (Culture isolate 08)		5673
Number of Rejected samples		70
<b>Tests Carried out</b>		
Number of Microscopy done		8103
Number of specimens subjected for decontamination		8429
Number of specimens subjected to NAAT	CBNAAT	514
	Truenat	1583
Number of Line Probe Assay performed for First Line DST		4949
Number of Line Probe Assay performed for second Line DST		724
Number of specimens put up for primary inoculation in MGIT		2034
Number of specimens subjected for ICT ( identification test)		1115
Number of drug susceptibility test performed by MGIT		519

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

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#### **Major functions of Epidemiology & Research Division are as under:**

- To conduct community as well as facility based epidemiological, operational and implementation research in TB including preparing generic protocols, planning, organizing, implementing, monitoring & supervising, data collection, data management, analysis and report writing.
- Provide Technical and Operational support to other Organizations /Institutions in the country in conducting TB Epidemiology and operational research studies.
- Provide mentorship and training in operational research, epidemiology and different aspects of TB control/elimination. This is either CTD sponsored, Union sponsored or the State sponsored activity.
- Mathematical modeling for assessing the burden of TB over the years based on implementation of the existing activities under the prevailing TB control programme and to provide inputs for course correction and implementation of newer activities targeted to end TB by 2025 as per the goal set for India.
- Engaged in other NTEP related activities including development of training modules & guidelines; provided technical inputs towards policy development, actively participate in monitoring & supervision and providing support for the modular trainings.
- Since 2019, the ERD has shouldered the responsibility of being a part of a pioneering multi-centric national level vaccine trial for prevention TB disease conducted by ICMR headquarters, New Delhi for the first time. For enabling the conduct of such high quality regulatory clinical trial, NTI collaborated with two prominent state-run hospitals for establishing two clinical sub-sites to fulfill the regulatory requirements laid down by Drug Controller General of India (DCGI).
- Research dissemination workshops are conducted periodically to improve programme performance based on the findings and to facilitate and advocate policy modifications whenever required.

## **A. Research Studies - Ongoing**

### **1. Factors associated with unsuccessful treatment outcomes of Hr-TB (isoniazid-resistant, Rifampicin-sensitive TB) patients treated with 6 to 9 months of 4 drug all oral H mono/poly regimen under NTEP in southern Karnataka: A 2-year post-treatment follow-up study.**

#### **Objectives:**

To determine the patient and health system factors associated with unsuccessful treatment outcome (treatment failure, loss to follow-up, regimen change after one month of treatment initiation, not evaluated, death during treatment) among adult Hr-TB patients initiated on all oral H mono/poly treatment regimen under NTEP.

#### **Methodology:**

A case-control study design will be adopted considering the operational feasibility in the COVID 19 pandemic and the time required for enrollment. In the study, a Case is referred to as patient declared to have unsuccessful treatment outcome (failure, lost to follow up or death during ATT, not evaluated, regimen change after one month of treatment initiation) at the end of treatment. Control is defined as patients with successful treatment outcome (cured and treatment completed). Cases and controls will be matched by district and declaration of treatment outcome within the same quarter of the year.

The data on selected variables will be obtained primarily from NI-KSHAY database. For missing data and perceived possible errors in NI-KSHAY data, data will be taken from PMDT register and Intermediate Reference Laboratory registers.

#### **Expected outcome:**

This will be probably the first study in our country to explore the factors associated with unsuccessful treatment outcomes of patients initiated on H-mono/poly regimen. Results of this study will be useful to understand the health system-related and patient-related factors associated with unsuccessful treatment outcomes, thereby providing insights for better patient management.

#### **Current status:**

The final protocol version and the Revised Budget Proposal along with filled in templates received from National Operation Research Committee (NORC) incorporating responses for the queries raised, submitted to Central TB Division (CTD) and NORC.

## **B. Study undertaken by NTI under India TB Research Consortium:**

- 1. A Phase III randomized, double blind, three arm placebo-controlled trial to evaluate the efficacy and safety of two vaccines VPM1002 and Immuvac (Mw) in preventing Tuberculosis (TB) in healthy household contacts of newly diagnosed sputum positive pulmonary TB patients.**

### **Study objectives:**

1. Primary Objective:

To evaluate the efficacy of VPM1002 and Immuvac by comparing the reduction in incidence of TB over 3-year period among Indian healthy household contacts of newly diagnosed sputum positive Pulmonary TB patients vaccinated with VPM1002 and Immuvac in comparison to placebo.

2. Secondary Objective:

- i. To evaluate the efficacy of VPM1002 and Immuvac in prevention of LTBI in healthy household contacts of newly diagnosed sputum positive PTB patients in comparison to placebo.
- ii. To evaluate the safety of VPM1002 and Immuvac in Indian healthy household contacts.
- iii. To evaluate the Immunogenicity of VPM1002 and Immuvac in healthy household contacts as compared to placebo against tuberculosis. (in a subset of population at Sites – Delhi (NCR), Pune and Chennai).

### **Methodology:**

The study was approved by DCGI vide their letter File No: BIO/Form44/FF/2018/9536 dated 20-Dec-2018. The trial was cleared by the NTI-Institutional Ethics Committee for the respective trial sub-sites, namely General Hospital, Jayanagar (JGH) and K. C. General Hospital (KCGH), Malleswaram.

The details of the sputum positive PTB cases presenting to the DOTS centre / clinic/OPD of the implementing institute in the last 4 weeks was obtained. The index case was contacted and visited to explain about the study and sensitized to provide details of Household contacts (HHC). All relevant details of the index case such as name, age, gender, address (corresponding and permanent), contact number, date of diagnosis and initiation of anti-tuberculosis treatment



(ATT), sputum smear grade and drug sensitivity pattern was recorded in site records. A list of HHCs was obtained from the index case by the health staff. Household contacts eligible and willing to be screened were registered for the study. The study procedures were conducted in three phases: screening phase, enrollment phase and follow-up phase. Only those found to be eligible on screening were vaccinated twice, one month apart with the Investigational Product (VPM1002, Immuvac or Placebo).

### **Expected outcome:**

- ✓ To compare the percentage of confirmed TB cases (PTB and EPTB) as per NTEP guidelines in the vaccinated and placebo groups from two months after first dose of vaccine up to endpoint till 38 months follow-up period (VPM1002, Immuvac and Placebo).
- ✓ Number of participants developing LTBI.
- ✓ Incidence of adverse events and serious adverse events in study participants till the end of study period.
- ✓ Efficacy of vaccine in prevention of PTB/EPTB, in the different age groups of (6 to 18 years, 19-35 years, 36 to 60 years and above 60 years).
- ✓ To determine the protective effect for both forms of TB (PTB and EPTB).
- ✓ Immunogenicity of VPM1002 and Immuvac will be compared with placebo to be measured by (Will be done at AIIMS, Delhi; NARI, Pune; and NIRT, Chennai):
  - FACS (Fluorescence activated cell sorting): CD3, CD4/CD8, TNF $\alpha$  IFN  $\gamma$ , IL2 [Time Frame: screening, month 2, month 6, and those who have developed PTB will be followed up during the course of study].
  - LUMINEX:IL2, IFN  $\gamma$ , TNF $\alpha$  IL 10, IL12, IL 17 [Time Frame: screening, month 2, month 6, and those who have developed PTB/EPTB will be followed up during the course of study].
- ✓ Efficacy against other infectious diseases.
- ✓ Efficacy against all-cause mortality.
- ✓ Efficacy against all-cause hospitalizations.
- ✓ Efficacy in TST positive versus TST negative prior to immunization.
- ✓ Gender specific efficacy.
- ✓ Immunological correlates of protection.

### **Total target:**

Initial target for NTI and its sub-sites was fixed as 2000 participants. NTI was supposed to have 4 sub-sites as per the Protocol Number - ICMR/ITRC/VAC/001/2018, Version 1.5 to achieve the target of 2000 enrolments, however following the inspection by CDSA (Sponsor authorized

monitors) it was communicated that only 2 out of the 4 state government run hospitals were eligible to undertake clinical trials as per the CDSCO/DCGI norms and hence the target was reduced to 1000.

#### **Current Status:**

- Vaccination/ enrollment under the vaccine trial was done at two sub-sites of NTI, Bengaluru namely, Jayanagar General Hospital and KC General hospital. The activity was initiated on 29th November, 2019.
- The enrolment of new participants for vaccination was stopped on 31st Dec 2020 as per the directions given by the sponsors, ICMR. We enrolled a total of 803 participants under the sub-sites of NTI. The follow-up of the participants enrolled at both JGH and KCGH was done at KCGH initially and subsequently at NTI
- A Participant Retention Plan specifically for NTI was prepared for the purpose of timely follow-up and all efforts were made to complete all the follow-ups within the scheduled period. Accordingly, the job allocation has been made to all the vaccine trial project staff and the NTI staff involved in the trial.

#### **Progress of the Trial at Jayanagar General Hospital (JGH) and KC General Hospital (KCGH) carried out in NTI campus from 1<sup>st</sup> April, 2021 to 31<sup>st</sup> March 2022:**

Ten TB cases and ten Serious Adverse Event (SAE) were reported during the 2297 follow up visits and 141 unscheduled visits undertaken during the period of report.

#### **C. Research dissemination:**

INDEX guidelines for extra pulmonary tuberculosis: Knowledge and practice among physicians' – Final manuscript reviewed by Authors is submitted for publication in Indian Journal of Tuberculosis

#### **D. Other activities:**

- Corrective action and preventive action (CAPA) report from NTI submitted to ICMR (Sponsors) in compliance with the technical audit observations reported during the Sponsor's Audit team in the month of May 2021.
- Revision and Amendment of the Standard Operation Procedures for the review and monitoring of Regulatory Clinical Trials to facilitate timely renewal of the registration of National Tuberculosis Institute-Institutional Ethics Committee with Drug Controller General of India (DCGI). These documents were uploaded on SUGAM web portal of DCGI.

- Fourth round of sero-surveillance carried out by ICMR in Karnataka to know the prevalence of covid-19 pandemic was completed

#### **E. List of publications (NTI faculty as author/co-author):**

1. V.K. Chadha, P. Praseeja, R. Srivastava, B.A. Shivashankar, N.K. Hemanth Kumar, R. Padmesha, P. et. al. Pre-treatment delay and out of pocket expenses by notified new tuberculosis patients in an Indian mega city. *Ind J Tub* 2021, doi.org/10.1016/j.ijtb.2021.07.001.
2. Thomas BE, Thiruvengadam K, Vedhachalam C, A S, Rao VG, Vijayachari P, et al. (2021) Prevalence of pulmonary tuberculosis among the tribal populations in India. *PLoS ONE* 16(6): e0251519. <https://doi.org/10.1371/journal.pone.0251519>
3. S. Singh, R. Jitendra, V.K. Chadha, G Vimalpuri R. Implications of Patient's Satisfaction Perspectives in End TB Strategy. *Int J Recent Sci Res.* 2021.12(11), pp. 43491-43497. doi:10.24327
4. Rathi P, Kalpita S, Bhaskaran U, Chadha V K, et al. Pretreatment Out-of-Pocket Expenses for Presumptive Multidrug-Resistant Tuberculosis Patients, India, 2016–2017, DOI: <https://doi.org/10.3201/eid2605.181992>
5. C.K. Vidya Raj, J Venugopal, M Muthaiah, V K Chadha, U Brammacharry, M. Swapna. In-vitro anti-Myco bacterium tuberculosis effect of Eugenol, *Indian Journal of Tuberculosis*, 2021, doi.org/10.1016/j.ijtb.2021.09.016.
6. Murhekar MV, Bhatnagar T, Selvaraju S, ... Narasimhaiah S et al. Prevalence of SARS-CoV-2 infection in India: Findings from the national serosurvey, May-June 2020. *Indian J Med Res.* 2020 Jul & Aug;152(1 & 2):48-60. doi: 10.4103/ijmr.IJMR\_3290\_20. PMID: 32952144; PMCID: PMC7853249.
7. Murhekar MV, Bhatnagar T, Thangaraj JWV, .... Rangaraju C et al. Seroprevalence of IgG antibodies against SARS-CoV-2 among the general population and healthcare workers in India, June-July 2021: A population-based cross-sectional study. *PLoS Med.* 2021 Dec 10;18(12):e1003877.
8. Murhekar MV, Bhatnagar T, Selvaraju S, ..Rangaraju C et al. SARS-CoV-2 antibody seroprevalence in India, August-September, 2020: findings from the second nationwide household serosurvey. *Lancet Glob Health.* 2021 Mar;9(3):e257-e266.
9. Murhekar MV, Bhatnagar T, Thangaraj JWV.... Narasimhaiah S et al. SARS-CoV-2 seroprevalence among the general population and healthcare workers in India, December 2020-January 2021. *Int J Infect Dis.* 2021 Jul;108:145-155.

#### **F. Scientific Papers Submitted for publication**

1. Tuberculosis and COVID-19 pandemic: Facing the giant and dual challenge of laboratory biosafety

2. Implementation status of contact screening and isoniazid preventive therapy among household child contacts of sputum smear positive Tuberculosis patients in a South Indian District
3. Predictors of mortality among hospitalized COVID-19 patients and Risk score formulation for prioritizing tertiary care: an experience from South India
4. A century old BCG vaccine and Journey in India
5. Prevalence and drug resistance of *M. leprae* complex in India
6. Epidemiology of drug resistant *Mycobacterium tuberculosis* in Bengaluru city, Karnataka- a cross sectional study
7. Treatment outcomes and its trends amongst drug resistant *Mycobacterium tuberculosis* patients treated under programmatic conditions in Bengaluru city (2017-2020).
8. Nutritional status of adults with self-reported TB in NFHS-4.
9. Childhood TB: Epidemiology, Pathology, Clinical features and prevention. In *Mycobacterial infections*, 3<sup>rd</sup> edition of PG text book of pediatrics
10. Timing, predictors and effect of nutritional support on TB deaths: results from RATIONS Trial

#### **G. ADVISOR NTI was involved in the following Protocol development**

- The factors associated with unsuccessful outcomes of patients treated under NTEP with all oral H mono/poly regimen between October 2019 and March 2020 in selected districts of South Karnataka: with HoD, Epi & Res Division, NTI: revision
- Performance of GeneXpert MTB Rif Assay a National Reference Laboratory in specimen collected under routine programmatic conditions from Presumptive Extra-pulmonary TB patients, NTI study.
- Assessment in Quality of Life in patients with hand deformities due to leprosy undergoing reconstructive surgery: a before and after analytical study
- Telemedicine approach in comparison to incentivized engagement of private practitioners for reduction in smoking among newly diagnosed tuberculosis patients – a non-inferiority cluster randomized trial with additional before/after change potential: Technical inputs to Center for Public Health Kinetics, New Delhi. revision
- Implementation of INDEX-TB guidelines for improving the detection, care and treatment outcomes among EPTB patients-Pilot study in settings of private tertiary care, Medical College Hospital and District hospital: Technical inputs to Center for Public Health Kinetics, New Delhi. Revision

#### 4. MONITORING AND EVALUATION DIVISION

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During the period of reporting, NTI actively participated in the Central Internal Evaluation/Joint supportive supervision of National TB Elimination Program performance of the States being conducted by Central TB Division in collaboration with partner organization. Experienced field officials of the division also worked proactively towards completion of 4th round of sero-surveillance being carried out by ICMR in Karnataka to know the prevalence of covid-19 pandemic so that appropriate control activity can be taken.

The following officials of NTI took part in joint supportive supervision of various states:

Name	States visited
Dr. Somashekar .N, Director	Mizoram & Arunachal Pradesh
Dr. S.K. Tripathy, DH M&E	Telangana & Andhra Pradesh
Dr. Umashankar .S, DH ERD	Bihar & Tripura
Dr. Ravichandra. C, DH HRD	Gujarat & Chhattisgarh

#### **Statistics Unit**

The Statistics Unit of the Institute plays an essential role in supporting the research activities of NTI. It provides the statistical needs of all the research activities i.e. from the planning stage of studies or surveys, protocol development, designing study schedules/forms, sample size estimation, collection and validation of data, collation, analysis of data, generating tables and interpretation of the results of various research studies. The unit also provides support for NRL laboratory activities and TB Vaccine trial study which is conducted by ICMR.

The unit has Statistical Subordinate Service (SSS) Officers (Junior Statistical Officers or JSOs) who provide the statistical support for the various activities and in turn are supervised by officers belonging to Indian Statistical Service (ISS) Cadre.

1. The list of activities being performed by the JSOs in POD Vaccine Trial unit are as follows:

- Data entry in Electronic Data Capture (EDC) of the following :
  - Data from scheduled visits of participants
  - Entry and updation of Adverse Events (AEs) and Serious Adverse Events (SAEs) of participants.

- Entry of corrected EDC and source queries e-mailed by Clinical Research Associate(CRA), CDSA
  - Entry of X-ray reports as and when available.
  - Entry of Stop dates of AEs in EDC as and when completed by MOs.
- An automated tool was built to upload data from excel onto ICMR website.
  - Verification and completion of Work-in-progress (WIP) forms for various visits created for Field Investigators.
  - Updating of visits data entry tracker in google spreadsheet.
  - Entry of AEs in AE logbook.
  - Customized interim analysis reports to be submitted to ICMR have been generated as per requirements.
  - Data entry module was prepared to generate the tracker information for KC General Hospital and Jayanagar General Hospital.
  - Data analysis and visualization of Interim report was prepared for submission from NTI to ICMR.
- 2.** The list of activities being performed by the JSOs in the NTI NRL Laboratory were as follows:
- Entry of the laboratory reports in NI-KSHAY Portal and updating reported information in the master register
  - A program has been developed to automate analysis of consolidated as well as individualized feedback to the DMCs
  - Correspondence with DTOs.
  - Maintenance of the Sample Rejection and Revised Reports Registers
  - Preparation of Monthly Turnaround Time (TAT) reports
- 3.** Other activities:
- Analysis of Karnataka Ni-kshay data for 2019 and 2020 on Treatment outcomes of patients was undertaken to develop the required sampling frame from the data based on inclusion/exclusion criteria for H-Mono study.
  - The sample size estimation for validation of newer diagnostic tools by NTI lab was undertaken.
  - The NTI website was updated in compliance with the Guidelines for Indian Government Websites - GIGW.
  - The periodic updating of NTI website content was done as and when the respective divisions/units provided the same.

## **5. ADVOCACY, COMMUNICATION AND SOCIAL MOBILIZATION DIVISION**

The Advocacy, Communication and Social Mobilization Division, in short, the ACSM Division was set up to enable and enhance the TB Control Program at different fronts. The Division plays a key role in sensitizing the younger generations from nursing, paramedical, life sciences and medical students on TB and NTEP.

### **1. Scientific Gallery**

The Scientific Gallery has been established to disseminate the general information on TB, the evolution of the programme, research conducted by NTI and achievements of the Institute since its inception. Considering the needs of the diverse categories of visitors like, Health officials from state government departments, doctors and para-medical personnel from government and private sector and various categories of health-sector trainees, regular in-house sensitization programme/training have been conducted by the division.

### **2. Sensitization Programme**

NTI had initiated virtual orientation/sensitization training on TB & NTEP for paramedical and basic life science students from 2020 onwards for the students who could not visit NTI for in-house sensitization programme during the pandemic. As the COVID 19 guidelines relaxed physical sensitization program was also undertaken.

During the year of reporting, a total of 511 students (Paramedical and Life Science) were sensitized on TB and NTEP virtually in 3 batches and in-house sensitization was done for 1 batch.

The details of the sensitization programs conducted during the year are appended below:

<b>Sl. No</b>	<b>Date</b>	<b>Category of Students</b>	<b>Organization</b>	<b>No. of Students</b>
1.	02-12-2021	M.Sc. Microbiology	Maharanis Science College for Women, Palace Road, Bengaluru	33
2.	11-01-2022 (virtual)	B.Sc(N)	M J Adarsha Nursing School, Bengaluru	44
			Command Hospital, College of Nursing	10

			R V College of Nursing, Bengaluru	120
			Sri Satya Sai College of Nursing	37
3.	18.01-2022  (virtual)	B.Sc (N)	Krupanidhi College of Nursing, Bengaluru	58
			St Marthas Hospital, Bengaluru	60
			Sri Kalabyraveshwara Swamy College of Nursing Bengaluru,	43
			Sri Devaraj Urs College of Nursing, Kolar	22
4.	28-01-2022  (virtual)	BMLT students	Acharya Institute of Health Sciences, Bengaluru	40
		B.Sc (N)	St Johns College of Nursing, Bengaluru	44
Total				511

### **SENSITISATION OF PARAMEDICAL STUDENTS ON TB & NTEP**





## **VIRTUAL ORIENTATION/SENSITIZATION TRAINING ON TB & NTEP FOR PARAMEDICAL AND BASIC LIFE SCIENCE**



### **3. Sensitization On All India Radio**

- Dr Poornima A ,Divisional head of ACSM ,Participated as a resource person in the Regional News Unit Of All India Radio for a discussion programme in kannada on the topic **“Tuberculosis Among Women And Its Impact On Other Family Members And Society “** on 16th December 2021 at 2.30pm
- Dr Somashekar N, Director NTI, participated in sensitization program on radio for a topic **“Baduku akshaya vagali”** which was broadcasted on 19<sup>th</sup> ,20<sup>th</sup> and 21<sup>st</sup> January 2022, to create awareness of TB among patient and community. During this program he addressed regarding TB control activities by NTI and NTEP emphasizing the issues related to TB diagnosis, treatment and prevention of TB.

## Sensitization On All India Radio





### 4. World TB Day 2022 Commemoration

World TB day was commemorated in the institute with the activities as follows.

- On this day a few meritorious retired officials from NTI were invited as chief guests and honored. Technical presentations were made from ERD, Laboratory and Training divisions on Tuberculosis.
- The Director spoke on TB and sensitized general public in a telecast in DD Chandana TV Channel.
- On 21<sup>st</sup> March 2022, a webinar on 'Invest in End TB: Save Lives' was organized in association with Press Information Bureau, Goa .



**WEBINAR**  
Organized by Press Information Bureau


 @PIB\_Panaji


**Invest to End TB.  
Save Lives**  
On the occasion of World Tuberculosis Day

**21<sup>st</sup> March 2022 | 11.00 AM**

**Join us LIVE**

 /PIB INDIA  @PIBMUMBAI

**DR. SOMASHEKAR. N**  
DIRECTOR, NATIONAL TUBERCULOSIS  
INSTITUTE, BENGALURU

**DR. RAVICHANDRA. C**  
CHIEF MEDICAL OFFICER (SAG),  
NATIONAL TUBERCULOSIS INSTITUTE,  
BENGALURU

## 6. ADMINISTRATION DIVISION

The Administration Division of NTI caters to all the administrative requirements of the Institute. The major activities of the units are as follows.

### 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 VII 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 the staff position are as under:

The details of staff position are as under:

Sl.No.	Category	Sanctioned	In Position	Vacant
1.	Group 'A'	14	12	2
2.	Group 'B'-			
	– Gazetted	02	01	01
	– Non-Gazetted	38	28	10
3.	Group 'C'	71	59	12
<b>Total</b>		125	100	25

### Promotions

Sl. No.	Name	Designation	Date
	NIL	NIL	

### Retirements on attaining the age of superannuation

Sl. No.	Name	Designation	Date
1.	Sri. Lakshminarayana	FI	30.09.2021
2.	Smt. Hemalatha	MLT	31.10.2021

**Retirements other than superannuation/ Demise:**

Sl. No.	Name	Designation	Date
1.	Sri. Premnath	MTS	24.03.2022

**Transfers from NTI:** Nil**Transferred to NTI:** Nil**Recruitments conducted for EQA and research project:**

Sl. No	Name of the Project	Date of Interview	Total No of Posts
1	EQA/NRL	22 <sup>nd</sup> Sept 2021	07
2.	A Phase –III Randomized, Double-blind, Three-arm Placebo-controlled Trial to Evaluate the Efficacy and Safety of two vaccines VPM 1002 and Immuvac ( Mw) in Preventing Tuberculosis (TB )in Healthy Household Contacts of Newly Diagnosed sputum Positive Pulmonary TB patients		03

**Departmental Promotion Committee meetings conducted:** Nil**MACP**

Sl. No	Total no. of MACP Cases Processed
1.	8

**Court Cases**

Sl. No	Name of the Court	Total No. of Cases	Dispose
1.	Supreme Court	1	--
2.	High Court	-	--
3.	CAT	1	--

## **CGHS**

<b>Sl. No</b>	<b>Total No. of Permissions Granted</b>
1.	41

## **Pay Fixation**

<b>Sl. No</b>	<b>Total No. of Pay Fixations</b>
1.	45

## **CPWD, CIVIL, HORTICULTURAL & ELECTRICAL WORKS AND MAINTENANCE**

The Civil, Horticultural, 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.56,00,000/- Under the head of account PLAN CAPITAL – MAJOR WORKS was allocated to the Institute during the financial year 2021-22 for carrying out maintenance and new works. The following Civil, and Electrical works were executed during the period under report, in addition to other routine repair & maintenance work.

### **CPWD, CIVIL Works**

1. Maintenance works of Residential buildings at NTI campus.
2. Maintenance works of Non-Residential buildings at the NTI campus.

### **CPWD, Electrical Works**

1. Running and Maintenance 2nos of 125 KVA DG Set at NTI Campus.
2. Replacement of conventional fittings and minor electrical works at Cauvery and Krishna Nivas at NTI Campus.

### **Additional Works**

1. Converted Board room into Video Conference room in the Benjamin Block on the First floor.

## **TRANSPORT UNIT**

The Institute has fleet of 8 functional vehicles and the unit is responsible for the upkeep of the vehicles including in-house repair of vehicles, if feasible. The unit also maintains all documents pertaining to registration and condemnation of vehicles.

### **1. Procurement of New Vehicles**

- Two New Vehicles were procured for the Institute during the period 2021-2022.
- Similarly, following the procurement of the Vehicles, the fast tags have been procured

### **2. Condemnation of Three Vehicles:**

- The proposal for the condemnation of three vehicles has been submitted during 2021-22

### **3. Proposal has been submitted for the disposal of unused items in the transport unit.**

### **4. The various duties as assigned have been undertaken by the unit viz. The regular monthly vehicle touring for the POD-Vaccine Trial Study, the Institute related duties, Special duties such as the VVIP Duties and the pulse polio duties were undertaken.**

## **STORES**

Stores cater to the logistic needs of various Units/Divisions of the Institute. It is responsible for the procurement and supply of store items for the smooth functioning of the Institute. This involves extensive procedures viz., receipt of indents from individual Units 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 Unit include:

- All major procurements were made through GEM.
- Maintenance of stores /stock ledger.
- Arrangement for Annual Maintenance of equipment held by different units/Divisions.

Details of purchases and other activities performed during 2021-22 are as under:

1. Items purchased against Annual Indent 2021-22 as decided and approved by the director and issued to various Units.
2. Stationery Items, General Stores Items, and Sanitization items are purchased Through GeM & issued to various Units.
3. Laboratory chemicals, consumables, etc., purchased and issued to Laboratory Unit.
4. Hostel items like steel utensils, teakwood cots, etc., were purchased and issued to Hostel Unit.
5. Procurement of Stationery, General store items, and Training bags were done.
6. Vehicle spares purchased and issued to Transport Unit.
7. IT Peripherals are purchased and issued to Computer Training Unit.
8. Motor Vehicles (Tata Nexon and Maruti Ertiga) purchased and handed over to Transport Unit.
9. Procurement and fixing of vehicle accessories like seat covers, wheel cap, floor mats, etc., for new vehicles.
10. Procurement of Batteries for Online UPS held by CTU and Laboratory.
11. Video conference system purchased and issued to Computer Training Unit.
12. Water filters were purchased and the same are installed at the Hostel and Laboratory Unit.
13. Process for initiation of Calibration work for laboratory instruments to NABL activities.
14. Annual Maintenance Contract for computers, printers, online UPSs etc., were renewed.
15. Annual Maintenance Contract for laboratory Instruments/Equipment were renewed.
16. Contract for Disposal of Bio-medical waste was renewed.
17. Initiation of Termite Control work undertaken in the main building.
18. Repair and servicing of Laboratory Instruments held by the Laboratory Unit.

19. Servicing and refilling of Fire extinguishers held by this institute are initiated.
20. Stationery items and miscellaneous items purchased and issued for POD Vaccine Trial.

## **ACCOUNTS**

The unit caters to the financial matters of the Institute. Details of Budget received under Non Plan and Plan and Expenditure up to end of March 2022 is as follows:

	<b>Budget Estimate</b>	<b>Expenditure</b>
<b>Revenue</b>	Rs. 14,68,00,000/-	Rs. 14,29,07,000/-
<b>Capital</b>	Rs.1,07,00,000/-	Rs. 78,00,000/-
		<b>April 2021 to March 2022</b>



## **7. PARTICIPATION IN MEETINGS / PROGRAMMES / SEMINARS / CONFERENCES / WORKSHOPS / CME ETC.**

The Director, 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:

<b>Sl. No.</b>	<b>Particulars</b>	<b>Date</b>	<b>Resource person</b>
1.	Expert committee vaccine trial monitoring meeting held by ITRC/ICMR via video conference for review of vaccine trial follow-up progress	Once every week during the month totaling to 52 days in the year	Dr. S Uma Shankar
2.	FMR Echo session for WGS	09.04.2021	Dr. Reena K Mrs. Mamatha HG Dr. Kavitha AK
		21.05.2021	
		25.06.2021	
		23.07.2021	
3.	NTEG-Diagnosis	12.04.2021	Dr. Somashekar N Dr. Reena K
4.	Webinar on Sequencing by synthesis – Illumina	15.04.2021	Mrs. Mamatha H G
5.	Technical co-ordination committee meeting held to prepare a protocol for a study on H-mono/poly based on secondary data (NIKSHAY)	16.04.2021	Dr. S Uma Shankar
6.	BD-STRIDES Sensitization session 1: Phase II Hybrid Assessment of LC & DST laboratories under STRIDES	29.04.2021	Mrs. Mamatha H G Dr. Kavitha AK

7.	BD-STRIDES Sensitization session 2: Phase II Hybrid Assessment of LC & DST laboratories under STRIDES	30.04.2021	Dr. Reena K Mrs. Mamatha HG Dr. Kavitha A K
8.	Virtual G.C.P. training conducted by Shodh Clinicals Solutions LLP, Delhi	01.05.2021	Dr. Somashekar N Dr. Srigiri S Revadi Dr. Om Prakash Dr. V K Chadha Dr. Thelma Narayan Dr. Nevideta Dr. S Vijaya Mrs. Brindha Nandakumar Mrs. Smitha BR Dr. C Ravichandra Dr. S Uma Shankar Dr. SK Tripathy
9.	Virtual orientation on the survey form for digitizing LPA reading and interpretation by CTD	04.05.2021	Dr. Reena K Mrs. Mamatha H G Dr. Kavitha A K
10.	Lecture on public health actions during the webinar: so you are COVID 19 positive-what next?	06.05.2021	Dr. V K Chadha
11.	Meeting of BRICS TB research network	14.05.2021	Dr. V K Chadha
12.	Virtual meeting with Arogya AI for understanding research proposal of software package for NGS data analysis	19.05.2021	Dr. V K Chadha Dr. . Sarika Jain Agrawal Dr. Reena K Mrs. Mamatha H G Dr. Kavitha A K
13.	Meeting on COVID-19 vaccine safety: from bench to bed side	21.05.2021	Dr. V K Chadha
14.	1 <sup>st</sup> international conference on Ivermectin	23.05.2021	Dr. V K Chadha
15.	BD-STRIDES Virtual	27.05.2021	Dr. Reena K

	assessment of TB C & DST lab at GMC Aurangabad	04.06.2021	
16.	Modeling impact of Ujwala scheme, with ICMR faculty	29.05.2021	Dr. V K Chadha
17.	United Nations High Level Meeting (UNHLM): Ending TB deaths in PLHIV	07.06.2021	
18.	Health care resilience during and after the pandemic from the perspective of patient access to innovation and optimal care on	09.06.2021	
19.	National Training in guidelines for programmatic Management of Drug resistant TB India 2021	14.06.2021 - 18.6.2021	Dr. Reena K Mrs. Mamatha H G Dr. Kavitha A K
		26.07.2021 - 29.07.2021	Dr. V K Chadha
20.	Technical specification committee meeting for supply of lab consumables to NTEP with Karnataka state officials	15.06.2021	Dr. Reena K
21.	Meeting with CTD and FIND officials for CBNAAT EQA	24.06.2021	Dr. Somashekar N Dr. VK Chadha
		16.07.2021	Dr. Reena K Mrs. Mamatha HG
22.	Steering committee of National TB prevalence survey; also, one-to-one inputs to NIRT team regarding its analysis	25.06.21	Dr. Somashekar N Dr. V K Chadha
		23.09.2021	
		13.10.21	
23.	CBNAAT EQA DTS Preparation : Inactivation of cultures	01.06.2021 - 09.06.2021	Dr. Reena K Mrs. Mamatha HG Dr. Kavitha AK, Mr. Somashekharayya H
24.	Annual panel testing panel preparation	01.06.2021 - Ongoing	Mr. Jayaganesh Mr. Charan Raj Rao

25.	Clofazamine panel preparation		Mrs. Geetha J
26.	CME on Extra Pulmonary TB, organized by state TB Cell, Kerala	04.07.2021	Dr. V K Chadha
27.	Radiology Workshop organized by the Health & Family Welfare Services, Government of Karnataka held at NTI Bengaluru.	07.07.2021	Dr. Somashekar N
28.	National Task Force on Medical College Core Committee Meeting held for discussing NTF related matters.		
29.	Meeting with WHO-SEARO to discuss the approved collaborative work plan of NTI	09.07.2021	Dr. Somashekar N Dr. VK Chadha Dr. C Ravichandra Dr. S Uma Shankar Dr. Sarika Jain Agrawal Dr. Poornima A Dr. Reena K Mrs. Mamatha HG
30.	PMDT 2021 training to IRL Karnataka staff	12.07.2021	Mamatha H G
31.	BCG Centenary Symposium conducted by NIRT	19.07.2021	Dr. V K Chadha
32.	National TOT in guidelines for Programmatic management of TB preventive treatment guidelines 2021 conducted by CTD	26.07.2021 - 29.07.2021	Dr. V K Chadha Dr. C Ravichandra Dr. Reena K
33.	Technical specification committee meeting for procurement of CBNAAT cartridges for Karnataka at Arogya Soudha	29.07.2021	Mrs. Mamatha H G
34.	Visit by Dr. S. Anand for coding Clofazimine PT panel to	29.07.2021 30.07.2021	NRL-EQA team

	be sent to all NRLs		
35.	WHO Training on DST and Whole Genome Sequencing	03.08.2021 - 05.08.2021	Dr. Reena K
36.	Virtual meeting to discuss the training strategy of NTEP under the chairmanship of DDG-TB	13.08.2021	Dr. Somashekar N
37.	Virtual Meeting with FIND and CTD officials to discuss CBNAAT EQA	16.08.2021 22.10.2021	Dr. Somashekar N Dr. V K Chadha Dr. Reena K Mrs. Mamatha H G
38.	Participated in Six month Online Executive Level Distance Learning Course for the District TB Officers by CETI under the iDEFEAT TB project	August 2021- Feb 2022	Dr. V K Chadha Dr. C Ravichandra
39.	Truenat EQA Sensitization Workshop to 50 pilot sites	17.08.2021	Dr. Somashekar N Dr. Reena K Mrs. Mamatha HG Dr. Kavitha A K
40.	Meeting with ICELT and FIND representatives to discuss the availability of CBNAAT cartridges	31.08.2021	Dr. Somashekar N
41.	Virtual PMDT Training of all DTOs on Zoom platform – participated and facilitated.	07.09.2021 – 08.09.2021	
42.	Virtual Meeting with all states including NTF, ZTF, STF, STOs and other stakeholders under the chairmanship of DDG to discuss the Management of stock of anti-TB drugs and other consumables under NTEP	07.09.2021	
43.	Virtual sensitization workshop to brief the overview of Joint Supportive Supervision team composition, TORs and SOPs	13.09.2021	

	to visit 36 states/Union Territories		
44.	Management of Anti-TB drugs and Lab Consumables under NTEP (Virtual) meeting	07.09.2021-08.09.2021	Dr. Reena K Mrs. Mamatha H G
45.	Meeting with IDDS India project team for institutional strengthening of public sector network of TB laboratories (NRLs and IRLs)	14.9.2021	Dr. Somashekar N Dr. . Sarika Jain Agrawal Dr. Reena K Mrs.Mamatha HG
		15.09.2021	
46.	Pre-Scientific advisory committee of NIRT Chennai, including one-to-one technical inputs to the principal investigators of different projects	21.09.2021	Dr. V K Chadha
		22.09.2021	
47.	NRL review meeting (online)	21.09.2021	Dr. Somashekar N Dr. . Sarika Jain Agrawal Mrs.Mamatha H G
		22.09.2021	
48.	TB day of MSF	25.09.2021	Dr. V K Chadha
49.	Meeting with Molbio and FIND regarding Truenat Pilot EQA (virtual)	08.10.2021	Dr. Reena K Mrs. Mamatha H G
50.	Annual EQA OSE Visit to STDC/IRL Pune	11.10.2021 - 14.10.2021	Dr. Reena K Mr. Manjunath R Mr. Jayaganesh Mr. Somashekharayya H
51.	Delivered the talk 'Evolution of the work of National TB Institutes and role of community engagement' during the workshop organized by FMES	21.10.2021	Dr. V K Chadha
52.	Meeting with FIND and CTD officials to discuss CBNAAT EQA (virtual)	22.10.2021	Dr. Somashekar N Dr. VK Chadha Dr. Reena K Mrs. Mamatha H G

53.	Virtual High Level Meeting of South East Asia Region to strengthen collective efforts towards ending TB, particularly in the context of COVID-19 pandemic and for positioning TB in broader development agenda in South East Asia Region.	26.10.2021	Dr. Somashekar N
54.	Initiation of ECHO program on WGS Capacity Building for DR TB Surveillance by FMR Mumbai	29.10.2021	Dr. Somashekar N Dr. Reena K Mrs. Mamatha H G
55.	Meeting with CTD and Wadhwani staff for orientation on AI based LPA Interpretations	02.11.2021	Dr. . Sarika Jain Agrawal Dr. Reena K Mrs. Mamatha H G
56.	Hands on for AI based LPA Interpretation Tool	03.11.2021	Dr. . Sarika Jain Agrawal Mrs. Mamatha H G
57.	Virtual Training Session for NRL Biomedical Engineers by CTD in Coordination with FIND	17.11.2021 18.11.2021 29.11.2021 30.11.2021	Mr. Mohammed Sadiq
58.	CBNAAT EQA 2021 Sensitization Program for STDC/IRLs under NRLs RMRC & BMHRC	15.11.2021	Dr. Reena K Mrs. Mamatha H G
59.	CBNAAT EQA 2021 Sensitization Program for STDC/IRLs under NRLs NIRTH & JALMA	16.11.2021	Dr. Reena K
60.	CBNAAT EQA 2021 Sensitization Program for STDC/IRLs under NRLs NTI & NIRT	17.11.2021	

61.	Sensitization meeting for Usability Assessment Study of Sample Management module in NIKSHAY with CTD under BD-STRIDES Partnership	24.11.2021	Dr. Somashekar N Mrs. Mamatha H G
62.	Review Meeting of IRLs-TB CDST laboratories linked with NRL BMHRC Bhopal	25.11.2021	Dr. Reena K
63.	Visit to Madhya Pradesh Laboratories with CTD Officials	26.11.2021	
64.	CME on PMDT guidelines to private sector doctors and PGs in Karnataka held in Rajiv Gandhi chest Institute Bengaluru	26.11.2022	Dr. V K Chadha
65.	National debriefing meeting for the Joint Supportive supervision mission held at CTD, New Delhi	30.11.2021	Dr. Somashekar N
66.	National OR Committee meeting to review (a) the shortlisted OR proposals (b) decide on the revised and re-submitted OR proposals presented in previous NORC meeting and (c) Review the progress done by the ongoing studies and approve their mid-term report and/or final findings.	07.12.2021 – 09.12.2021	
67.	National Operational Research committee meeting	07.12.2021- 09.12.2021	Dr. V K Chadha
68.	Lab renovation assessment visit to IRL Pune	08.12.2021 09.12.2021	Dr. Reena.K, Mr. Sadhiq



69.	49th Scientific Advisory committee Meeting of ICMR-NIRT held at NIRT Chennai presided by Dr. Balram Bhargav, Secretary DHR & DG, ICMR. (Virtual)	10.12.2021	Dr. Somashekar N Dr. V K Chadha
70.	Annual NRL EQA OSE visit to Rajasthan	13.12.2021 – 17.12.2021	Dr. Reena K Mr. Sadhiq Mr. Jaya Ganesh, Ms .Pushpa T J
71.	Lab renovation site assessment visit to IRL Ajmer	13.12.2021 14.12.2021	Dr. Reena K Mr. Sadhiq
72.	NGS workshop at NIRT Chennai	13.12.2021 – 17.12.2021	Dr. Somashekar N (online) Dr. Sarika Jain Agrawal Dr. Mamatha H G Mr. Somshekharayya H
73.	Capacity building workshop on use of next generation sequencing for improved surveillance and outbreak investigations of drug resistant tuberculosis held at ICMR, NIRT Chennai	14.12.2021 – 17.12.2021	Dr. Somashekar N
74.	Truenat post EQA visit to Kushalgarh Truenat site in Banswara district	15.12.2021	Dr. Reena K Mr. Sadhiq Mr. Jaya Ganesh, Ms. Pushpa TJ
75.	Participated as a resource person in the Regional News Unit Of All India Radio for a discussion programme in Kannada on the topic “Tuberculosis Among Women And Its Impact On Other Family Members And Society”	16.12.2021	Dr Poornima A
76.	Virtual meeting to discuss the way forward for NAAT EQA	20.12.2021	Dr. Somashekar N
77.	CBNAAT EQA virtual	21.12.2021	Dr. Reena K

	sensitization programs for the states of Jammu & Kashmir, Telangana, Andhra Pradesh, Goa and Puducherry	22.12.2021	Dr. Mamatha H G
		27.12.2021	
78.	Meeting to obtain valuable feedback on the proposed algorithm for the management of pediatric MDR-TB for upcoming Paediatrics TB Guidelines-2021	27.12.2021	Dr. Somashekar N
79.	Echo session of WGS Capacity Building for DRTB Surveillance programme organized by Foundation for Medical Research, in collaboration with ECHO and the UNION under the iDEFEAT TB Project	29.12.2021	
80.	Onsite training of Truenat LT and STLS of Madhya Pradesh	03.01.2022 -07.01.2022	Mr. Somshekharayya H Mrs. Vinutha Umashanker Ms. Benazir
81.	Webinar on Collaboration to Eliminate TB among Indians (CETI) organized by the UNION.	05.01.2022	Dr. Somashekar N
82.	Virtual zonal Task Force meeting (East Zone)	13.01.2022	
83.	Validation for the mapping of NAAT facilities in public & private sector at Block level	17.01.2022	Dr. Reena K Mrs. Mamatha H G
		27.01.2022	
84.	IRL Pune: Truenat training and review meeting for LT and STLS	19.01.2022	Dr. Reena K

85.	EQA OSE visit to IRL Karnataka	10.01.2022 – 13.01.2022	Dr. Reena K Mrs. Mamath H G Mr. Sadhiq Ms. Geetha, Ms. Pushpa Mrs. Vinutha
86.	Meeting with STO Karnataka for debriefing about NRL EQA OSE visit findings	20.01.2022	Dr. Reena K Mrs. Mamath H G Mr. Sadhiq
87.	Participated as a resource person in the Regional News Unit Of All India Radio for a discussion programme in Kannada on the topic “Baduku akshaya vagali”	19.01.2022	Dr Somashekar N
88.	Update on Zoonotic tuberculosis study: CTD & CMC Vellore	27.01.2022	Dr. . Sarika Jain Agrawal Dr. Reena K
89.	Virtual meeting with CTD and FIND to discuss the progress made so far with GeneXpert EQA and way forward to TRUENAAT	01.02.2022	Dr. Somashekar N
90.	CBNAAT EQA sensitization: Karnal	03.02.2022	Mrs. Mamatha H G
91.	Echo session of WGS capacity building for DR TB surveillance	04.02.2022	Dr. Somashekar N
92.	Treunat EQA sensitization program: <ul style="list-style-type: none"> <li>Andhra Pradesh, Goa, Maharashtra (Nagpur, Pune and Mumbai division).</li> <li>Rajasthan</li> <li>Telangana</li> <li>West Bengal</li> <li>Karnataka</li> <li>Kerala</li> </ul>	09.02.2022  10.02.2022 15.02.2022 16.02.2022 18.02.2022 21.02.2022	Dr. Reena K Mrs. Mamatha H G

93.	CBNAAT EQA sensitization : Arunachal Pradesh	16.02.2022	Mrs. Mamatha H G
94.	Session of WGS capacity building for DR TB surveillance	18.02.2022	Dr. Somashekar N
95.	CBNAAT EQA sensitization :Pune	24.02.2022	Dr. Reena K
96.	CBNAAT EQA virtual sensitization of LTs & STLS of Chhattisgarh and Madhya Pradesh	01.03.2022	Dr. Reena K Dr. Mamatha H G
97.	CBNAAT EQA virtual sensitization of LTs & STLS of Rajasthan	07.03.2022	Dr. Reena K
98.	Discussion with CTD regarding updated LPA & LC indicators : virtual meeting	07.03.2022	Dr. Reena K Dr. Mamatha H G
99.	LCDST Training for PZA & Linezolid - IRL Goa: virtual training along with BMHRC	14.03.2022	
100.	Task Force for sub-national level certification of awards for progress towards TB-free status	10.03.2022	Dr. V K Chadha
		19.03.2022	
101.	Delivered a talk on Updates in Tuberculosis during the CME held at Sapthagiri Institute of Medical Sciences & Research Bengaluru	15.03.2022	Dr. Somashekar N
102.	Updated monthly indicators- Smear Microscopy, CBNAAT, Truenat, LPA and LCDST: virtual meeting with CTD	17.03.2022	Dr. Reena K Dr. Mamatha H G

103.	'Expert Review & Monitoring Committee' Meeting regarding the progress of the vaccine trial at ICMR Headquarters, New Delhi	14.03.2022 - 15.03.2022	Dr. Uma Shankar S Dr. C Ravichandra
104.	Next-Generation Sequencing (NGS) in infectious diseases: Tuberculosis and COVID-19: Virtual training	23.03.2022 - 25.03.2022	Dr. Reena K Dr. Mamatha HG
105.	Participated in the webinar on the topic 'Invest in End TB: Save Lives' for Public in association with Press Information Bureau, Goa	24.03.2022	Dr. Somashekar N Dr. C Ravichandra
106.	Talk on "Invest in TB – Save Lives" during the Health programme in DD Chandana telecast		
107.	Participated in the "STEP UP to End TB" Summit at Vigyan Bhavan, New Delhi in commemoration of World TB Day 2022.	24.03.2022	Dr. Somashekar N
108.	Virtual CME for commemorating the World TB Day 2022 organized by the State TB Cell, DHS, Kerala and delivered a talk on "Latest Updates in NTEP"	27.03.2022	Dr. Somashekar N
109.	Delivered a talk on 'Recent Updates in TB' during the CME at Sri Siddhartha Medical college, Tumkuru in commemoration of World TB Day.	28.03.2022	
110.	Updated CBNAAT indicators: orientation for the LT and STLS of Karnataka & Pune division (Virtual session)	28.03.2022	Dr. Reena K Dr. Mamatha H G
		29.03.2022	

## **INSTITUTIONAL ETHICS COMMITTEE MEETINGS**

The following NTI - IEC meetings were held:

1. The 27<sup>th</sup> Institutional Ethics Committee Meeting was held in the Institute on 31<sup>st</sup> July 2021 and under the Chairmanship of Dr. Srigiri S Revadi.
  - Brief presentation on the five protocols submitted for ethical clearance was made by the Principal Investigators/Presenters and ethical issues pertaining to each protocol was discussed.
  - Two of the five research protocols were approved by the Chairman and committee members and suggestions were given to the Principal Investigators/Presenters to revise and resubmit the remaining three research protocols

## **RESEARCH DOCUMENTATION CELL (RDC)**

The Research Documentation cell is carrying out the responsibility to digitize and upload the published TB research in Indian context as a nodal centre of NTI. The uploaded research articles are available in the research documentation portal

**[www.tbresearch.ntiindia.org.in](http://www.tbresearch.ntiindia.org.in)**.

The portal includes the published TB research from the following institutions/organization:

- Indian Institute of Science (IISC), Bangalore
- Institute of Bioinformatics, Bangalore
- Mahatma Gandhi Institute of Medical Sciences (MGIMS), Wardha
- National Institute for Research in Tribal Health (ICMR), Jabalpur
- National Institute for Research in Tuberculosis (NIRT), Chennai
- National Institute of Tuberculosis and Respiratory Diseases (LRS), New Delhi
- National JALMA Institute of Leprosy and other Mycobacterial Diseases, Agra
- National Operations Research Committee, Central TB Division, Govt. of India
- National Task Force, Zonal Task Force & State Task Force of Medical Colleges
- National Tuberculosis Institute (NTI), Bangalore
- New Delhi TB Centre (NDTBC), New Delhi
- State Tuberculosis Centres.
- Tuberculosis Association of India (TAI)

The following activities were undertaken by Research Documentation Cell during Apr 2021 to Mar 2022

***(A) Research Documentation Cell:***

- Web Administration of TB research portal [www.tbresearch.ntiindia.org.in](http://www.tbresearch.ntiindia.org.in)
- Correspondence with all the participating nodal centers.
- Processed access request to the documentation portal as & when requested.
- Digitization, metadata formation and uploading of Indian TB research articles received from collaborating centres and published in various publications viz. Int J Tuberc & LD, IJMM, IJMR, IJTB, PHA etc.

***(B) Institutional Ethics Committee (NTI - IEC)***

- Assisted Member Secretary in organization of 27<sup>th</sup> NTI IEC meetings held during the year 2021-2022.
- Maintaining the records and correspondence between NTI IEC and researchers
- Correspondence with CDCSO about reregistration process of NTI-IEC with the licensing agency CDSCO.
- Drafted the requisite Standard Operating Procedure documents for NTI IEC as per the re-registration checklist.

***(C) Technical Assistance to Director's Office***

- Assisted Director's office in official and technical correspondence.
- Assisted publication section in compilation of annual reports (2020-2021) of the Institute.
- Compilation of annual report of MoH&FW 2021-22.
- Compilation of material for TB India Report 2022.
- Completed the DST Survey for R&D Resources (2021) in coordination with respective Division Heads/unit Heads
- Guided MPH interns from KSRDPR University on literature review.

***(D) WHO CC Activities***

- Submitted Annual Report of NTI as WHO CC pertaining to approved work plan.
- Correspondence with WHO SEARO
- Completed the process of re-designation as WHO CC (2021-2025) and assisted Directors office in drafting the proposed work plan in concurrence with the respective Division Heads.