

THORACIC SURGERY IN TB: RESIDENTIAL  
SKILL TRAINING PROGRAMME

NATIONAL INSTITUTE FOR TUBERCULOSIS  
AND RESPIRATORY DISEASES

2022

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## INTRODUCTION

The struggle against TB remains, especially in developing countries and emerging economies. Although chemotherapy has provided a potential for cure and eradication, several pitfalls have been encountered. The resurgence of strains of drug-resistant TB has posed new challenges. With improvements in surgical and anaesthetic techniques, and dramatic reductions in morbidity after thoracic surgery, there is potential for surgery to play a critical role in the management of Tuberculosis.

It is perceived that more than 5% of TB cases require surgery primarily or as an adjunct to medical therapy. In the majority of cases, active TB affects the thoracic cavity, mainly the pulmonary structures. A recent systematic review reported that pulmonary resection combined with anti-TB drugs chemotherapy for MDR TB has achieved treatment success rate in some settings of upto 88- 92 % of cases. Surgery was associated with a nearly 5-fold increase in the odds of initial favourable outcomes and higher long-term survival rates.

However, patients have limited access to quality thoracic surgical care due to a number of obstacles. The biggest obstacle includes shortage of trained thoracic surgeons and lack of awareness amongst the public. It is important that surgeons involved in the care of TB patients know the indications and contraindications for surgery, the timing of surgery, and the new as well as the older operative techniques available. Subsequent postoperative management that includes complications, follow-ups, and surveillance is crucial to successful early and long-term results.

**National Institute for Tuberculosis and Respiratory Diseases** have a long-standing tradition in excellence. The institute continually strive to create an educational environment that maximizes the surgical trainee's academic potential. The faculty is dedicated in development and growth of our residents and fellows in the field of thoracic surgery. NITRD with the support of USAID funded iDEFEAT TB Project is bringing out a program to build the capacity of the surgeons for performing thoracic surgery for TB.

## OBJECTIVES OF THE PROGRAMME

To build and increase the capacity of surgeons to perform thoracic surgery in patients affected with TB.

## ELIGIBILITY, METHOD OF SELECTION & DETAILS OF THE COURSE

The training programme would focus on knowledge, skills and attitudes in overall components of the course. It will be divided into theoretical, clinical and practical management of all patients.

### (A) Eligibility:

#### 1. Essential criteria:

Faculty of general surgery posted as Assistant/ Associate Professor in any government institute under central/state/PSU/Autonomous body may be eligible to apply

Any medical graduate with MS/ DNB in general surgery qualification, who wishes to gain knowledge and skill in TB thoracic surgery.

#### 2. Desirable criteria:

Medical graduate with MS/DNB general surgery with training experience in diagnosis and treatment of TB/ DR-TB as per NTEP guidelines.

### (B) Method of selection

The admission to this course will be through an application and interview. (See application form available in Annexure).

The screening of applications and interview and will be conducted by panel of experts from NITRD.

### (C) Duration of the course:

3 months

Maximum 2 students per session

### (D) Modality of instruction

Every candidate admitted to the training programme shall pursue a regular course of study (on full time residential basis) in the assigned institution under the guidance of a mentor for assigned period of the course.

### (E) Commencement of course

The applications will be invited during August 22 and the course will be started from October 2022.

### (F) Scholarship

Selected candidates will be supported through a scholarship by the IDEFEAT TB Project (TBD)

### (G) Accommodation and Food

The accommodation will be provided by the NITRD in their guest house at a very nominal fees along with the food.

### (I)Certificate of completion

On successful completion of the course, the candidate will get a certificate with details of the course signed by NITRD, Central TB Division and The Union.

## TEACHING AND TRAINING ACTIVITIES

The fundamental components of the teaching programme should include:

1. Case presentations and discussions- bi weekly
2. Grand round presentation (by rotation departments)- once weekly
3. Faculty lecture teaching
4. Pre/ peri/ post- operative management of patients
  - Early post- operative complications
  - Delayed post- operative complications
5. Clinical knowledge and skills
  - System specific and general history and examination, including drug history, identification of comorbidity and functional status
  - Open versus minimally invasive approaches to thorax and abdomen
6. Patient management
  - Risk assessment and stratification
  - Post-operative management of pain control
  - Physiotherapy and rehabilitation
  - Understanding thoracic specific ventilator techniques
7. Technical skills
  - Endoscopy
  - Bronchoscopy
  - Tracheostomy
  - Correct positioning of patient in thoracic surgery
  - Select, perform and close thoracic incisions, including lateral, anterior, muscle sparing, median sternotomy, and VATS incision.

The rounds should include bed side sessions, file rounds, and documentation of case history and examination, progress notes, round discussions, investigations, and management plan. Discussions of interesting and difficult to treat cases in unit discussions.

Each candidate should maintain a Log Book of surgeries (assisted/ performed), and case presentations during the training period, certified by the concerned faculty/ Head of the Department/ Senior Consultant. The log book shall be made available to the board of examiners for their perusal at the time of final examination. The log book should show evidence that the before mentioned subjects were covered (with date and name of teacher). The candidate should maintain the record of all academic activities undertaken by him/her in the log book.

1. Personal profile of the candidate
2. Professional data

3. Record of case histories
4. Procedures learnt
5. Record of case demonstrations/ presentations
6. Every candidate at the time of practical examination, will be required to produce performance record (log book) containing details of the work done by the candidate during the entire period of the training as per the requirements of the log book. It should be duly certified by the supervisor as the work done by the candidate and the countersigned by the administrative Head of the Institution.
7. In absence of production of log book, the result will not be declared

## SYLLABUS

### Principles of surgical treatment in bacterial infection- Tuberculosis

1. Tuberculosis and Atypical Mycobacteria
  - Knowledge
    - ❖ Epidemiology and screening
    - ❖ Clinical presentation
    - ❖ Treatment regimens
    - ❖ Indication for surgery, including complications and outcomes
  - Patient management/ Clinical skills
    - ❖ Familiarity with medical therapies
    - ❖ Management of complications of surgery
    - ❖ Timing and preparation of patients eligible for surgery
    - ❖ Types of diagnostic procedures
  - Technical skills
    - ❖ Resection techniques
    - ❖ Diagnostic techniques
    - ❖ Bronchial stump coverage
2. Other Bacterial/ mycotic infections
  - Knowledge
    - ❖ Community acquired pneumonia
    - ❖ Nosocomial pneumonia
    - ❖ Aspiration pneumonia
  - Patient management/ clinical skills
    - ❖ Clinical assessment
    - ❖ Techniques for culture
    - ❖ Interpretation of imaging
    - ❖ Advancement of ventilator management
    - ❖ Familiarity with medical therapy
    - ❖ Role of surgery
3. Post- operative management including complications such as empyema, Broncho-pleural fistulae, space issues, prolonged air leak, pneumonia, haemorrhage etc
  - Technical skills
    - ❖ Lobectomy
    - ❖ Segmentectomy
    - ❖ Pneumonectomy

- ❖ Resection with chest wall, including reconstruction techniques
  - ❖ Soft tissue flaps for stomp coverage
4. Competencies- operative skills
- Principles of video assisted
    - ❖ Thoracic surgery
    - ❖ Traditional technical approach and instruments
    - ❖ Recent technical developments
  - Quality of care in thoracic surgery
    - ❖ Introduction
    - ❖ Data collection
    - ❖ Selection of quality indicators
  - Thoracic incisions
    - ❖ Posterolateral thoracotomy
    - ❖ Anterolateral thoracotomy
    - ❖ Muscle sparing thoracotomy in the auscultatory triangle
    - ❖ Median sternotomy
    - ❖ Clamshell incision
    - ❖ Hemiclampshell approach for thoracic surgery
    - ❖ Transmanubrial approach to the thoracic inlet
  - Lung- Operative techniques
    - ❖ Open wedge resection
    - ❖ Videothoroscopic wedge resection
    - ❖ Open segmentectomy
    - ❖ Open lobectomy
    - ❖ Bronchial sleeve resection
    - ❖ Videothoroscopic lobectomy and bilobectomy
    - ❖ Pneumonectomy
    - ❖ Open systematic Mediastinal Lymph Node resection
    - ❖ Videothoroscopic Systematic Mediastinal Lymph Node Resection
5. Other areas in which knowledge is to be acquired
- Biostatistics
  - Research methodology
  - Relevant Medico- legal aspects

## EXAMINATION/ ASSESSMENT

- An examination will be conducted with 2 case presentation
- Assessment of the log book

## SUGGESTED REFERENCE MATERIAL

### Recommended text book and journals

#### 1. Textbooks

- General thoracic surgery ESTS- European Society of Thoracic Surgeons
- Thoracic surgery ERS White book
- ESTS Text book of Thoracic surgery
- Thomas Pagella- Surgery for Thoracic Tuberculosis

#### 2. Journals

- Journal of Pulmonary and Respiratory Medicine
- The Annals of Thoracic surgery
- Open journal of Thoracic surgery

## ANNEXURE 1: APPLICATION FORM

1. Name
2. Age
3. Address
  
4. Current Designation & Affiliation
  
5. Academic qualification

Period (Month/ Year)	Type/Name of Course	Institution

Why have you applied for this Course?

How do you intend to use this experience for the benefit of people affected with TB? (You may provide any supporting letter from your affiliated institution on the same as attachments)