DIPLOMA IN TUBERCULOSIS AND CHEST DISEASES (D.T.C.D)

Training Programme (DTCD)

First 6 months (Orientation Programme)

1. Attending PG orientation programme (covering the main teaching methods issues relating to establishing support with the patients. Ethical issues involved in rendering the patient care services)
2. Care of indoor patients under guidance of seniors.
3. Taking case-history, working up indoor cases, writing admission and discharge summaries.
4. Performing Minor –OT procedures in OPD.
5. Attending emergency ad referral calls under the supervision of Senior Resident/Assistant Professor/ Associate Professor/Professor.
6. Attending ward rounds and assisting in carrying out the instructions by senior staff,
7. Attending Our Patient Department patients under the supervision of seniors.
8. Keeping records and maintenance of ward, OPD and emergency statistics.

After 6 months to the end of the course:

1. Presenting indoor patients in ward rounds.
2. Attending OPD patients.
3. Doing emergency duties of 24hr duration by rotation among all residents.
4. Presenting seminars, journal articles cases on rotation basis.
5. Attending Inter-departmental meetings and planning the management.
6. Ensuring proper management of indoor patients and proper record keeping by juniors.
7. Attending medical care review meetings. Central Academic Programmes and other guest-lectures organized by Institute.
8. Taking clinical classes for undergraduate students posted in TB & CD.
9. Maintaining a Log Book.

TEACHING SCHEDULE

CLINICAL POSTINGS:

❖ General Medicine	1 month
❖ Cardiology	7 days
❖ Cardiovascular and thoracic Surgery	7 days
❖ Radiodiagnosis	7 days
❖ Anesthesiology	7 days
❖ Paediatrics	7 days
❖ Pulmonary Rehabilitation	7 days
❖ Social & Preventive Medicine	7 days
❖ Radiotherapy	7 days
❖ Tuberculosis Research Center (TRC) Chennai	7 days
❖ National Tuberculosis Institute (NTI) Bangalore	7 days

Afternoon Lectures/ Demonstration Classes in Pre and Para Clinical Sciences during the First year study.

SKILLS

The following skill should be possessed by candidate appearing for Diploma In Tuberculosis and Chest Diseases (DTCD).

Communication skills:

1. Communication skills:

   a) Communication with peer Group by way of:
      - Case presentation
      - Clinico-pathological exercise.
      - Seminars & small conferences

   b) Communication with students and colleagues:
      - Undergraduate teaching
      - Demonstrations

   c) Research Communication:
      - Gathering and compiling data, analysis and presentation, designing a research protocol.
      - Writing a structured abstract.

2. Administrative skills:

   a) Stores and equipment
      - Knowledge about requirements, estimation of cost and expenditure of equipment and store.
      - Procurement and maintenance.

   b) Knowledge about essential National Health Programmes.

3. Practical and procedural skills

   a) General skills
   b) Specific skills in Respiratory Medicine

GENERAL SKILLS

- General Medicine: History taking Methodological clinical examination, fundus examination, liver biopsy, L. P. sternapuncture for bone-morrow examination, catheterization and bedside investigations.
- Cardiology: Interpretation of ECG in relation to respiratory diseases, ECHO, usage of Defibrillator.
- Radiology: X-ray reading, positioning, fluoroscopy, bariumswallow, bronchography, CT scan and Ultra Sonography.
- Optional: MRI Lung Scan and Pulmonary-angiography.
  - ENT, Anaesthesiology: Intubation, Tracheostomy, Transtracheal aspiration, Sinus examination.
  - Paediatric Pulmonary diseases: Fluid and electrolyte balance in children.
  - Cardiovascular and Thoracic Surgery: Bronchoscopy, Pulmonary resection, post-operative care and pre-operative evaluation.
- These skills are acquired by the candidates by working in parent and allied departments.

SPECIFIC SKILLS IN RESPIRATORY MEDICINE

1. Skill to perform diagnostic tests:
    - Sputum examination with ZN stain, examination of the body fluids for AFB and malignant cells.
    - FNAC
    - Evaluation of diagnostic tests
    - Sleep lab and sleep clinic
    - Exercise testing
    - Respiratory muscle function tests
    - Pulmonary function test
    - BCG Vaccination
    - Mantoux testing

2. Therapeutic Procedures:
    - Thoracocentesis
    - Tube Thoracostomy
    - Rehabilitation exercise
    - Bronchoscopy aspiration and lavage
    - Pleural biopsy
    - Critical care
    - Management issues and basic nursing and asepsis, cross infection and iatrogenic problems.
    - Life support system management.
    - Principles of total parenteral (TPN) nutrition.

Apart from these skills, the candidate should possess skill for rapid diagnosis and decision making which is useful in outpatient department and as a part of inpatient management he/she should have the following skills.

- Case sheet writing, clinical examination, diagnosis, investigation and management.
- Presenting cases.
- Problem based approach towards day- to day management
- Bedside diagnostic and therapeutic procedures
- Minor surgical procedures
- Rehabilitation

EVALUATION

CONTINUOUS OR PERIODIC EVALUATION DURING THE COURSE

This evaluation of the candidate should be earned out every month and the knowledge assessed by:

- Short question and answer supplemented by viva-voce.
- Ward round question answers practical skills
- Direct supervision and observation of procedures like bronchoscopy, pleural biopsy. Endotracheal intubation.
- Checking the log book.
- Regularity in attendance.

COMMUNICATION SKILLS

- Objective assessment of clinical presentation, seminars and case discussions'
- Dealing with patients, relatives and paramedicals
- Feedback from patients

CERTIFYING THE PROFICIENCY IN THE SKILLS

For Diploma in Tuberculosis and Chest Diseases (DTCD)

This is done by theory examination consisting of 3 papers of 100 marks each. Theory question papers consist of short answer and long answer questions. This weight age is 50%. The other 50% will have 200 marks for clinical and 100 marks for viva/ practical. The candidate should pass independently all categories under the same set of examiners.

Papers – I

Basic Sciences as applied to Pulmonary Medicine

Format for paper – I

- 10 Short Questions each 10 marks

Applied Basic Sciences approximately 60% weight age on Anatomy and Physiology and 40% on other applied basic sciences related to Tuberculosis and Respiratory Diseases.

Format for Paper II & III

- 2 Long questions of 25 marks each
- 5 short answer questions of 10 marks each

Paper II **Tuberculosis (Pulmonary and extra pulmonary including recent advances)**

Paper III **Non-Tuberculosis chest Diseases including recent advances and air pollution.**

CLINICAL EXAMINATIONS

1. Long case — 80 marks

   Distribution of marks

History taking	20%
Clinical Exam	20%
Diagnosis & Differential diagnosis	20%
Choice of investigations	20%
Discussion	20%

2. Short cases — 25 marks

   Practical examination

   1. Spot slides and spotters
   2. X-ray films
   3. Specimen
   4. ECG/ABG/Polysomnography
   5. Instruments
   6. PFT Interpretation
   7. Bronchoscophy findings & Interpretation

   Viva examination should include — 25 marks

   1. Recent advances
   2. Research work done
   3. Image techniques
   4. Acute emergencies

Eligibility for Pass

- The candidate should obtain a minimum of 50% marks in theory, Clinical, Practical and Viva voce separately. (In addition, in each Theory paper a candidate has to secure minimum of 40% . If any candidate fails even under one head, he/she has to reappear for both Theory and Practical / clinical / Viva examinations.

Examiners

1. There shall be four examiners (PG teachers) – Two internals and two externals. Two internal examiners shall be from the same University/Institution. One of the internal examiners will act as Chairman/convener as per instructions from University. Two external examiners shall be from different Universities.

2. All the examiners must be full-time PG teachers with requisite experience as per MCI guidelines.

Annexure II – Model question papers for Diploma in Tuberculosis and Chest Diseases(DTCD)

Annexure II – List of Recommended Books and Journals for both MD and DTCD

PAPER – I

1. An Architecture for Physiological Function

    - Development, ultra structure and Anatomy of Respiratory tract and Lungs.
    - Embryology of lungs, heart, mediastinum and diaphragm.
    - Development anomalies
    - Surgical and endoscopic and applied Anatomy of chest and neck including Lymphatic drainage.
    - Radiographic Anatomy (plain skiagram, CT, MRI, Ultrasound etc.)

2. Physiological Principles

    - Control of Ventilation and role of peripheral and central Chemoreceptors & pulmonary mechanics.
    - Ventilation, pulmonary Blood Flow, Gas Exchange, Blood Gas Transport and assessment of pulmonary functions.
    - Non-respiratory immunological and endocrine functions of lung.
    - Inhalation kinetics and its implication in aerosol therapy, sputum induction etc.
    - Acid-base and electrolye balance.

3. Approach to the Patient with Respiratory signs and symptoms

    - Basic signs and symptoms of lung diseases
    - Pathogenesis, evaluation of dysnoea and abnormal breathing patterns.
    - Pulmonary manifestations of systemic diseases.

4. Diagnostic Procedures

    - Trache Bronchial Secretion/Transbronchial Aspirations
    - Bronchoscophy and related Procedures
    - Radiographic Evaluation of the Chest and Computer Tomography and MRI
    - Gram's stain, Zeihl-Neelsen stain for AFB, Fluorescent Microscopy, fungus Stain, Gomori stain for p. carini.
    - Immunological Tests including Mantoux.
    - Polymerase chain reaction, D. N. A. probe, Bactec tests.
    - Thoracocentesis, Biopsy FNAC/FNAB
    - Spirometry, ABG, Diffusion studies

PAPER – II

1. Mycobacterial diseases of the Lungs

    - Epidemiology, Microbiology and Prevention of Tuberculosis
    - Pathogenesis of Pulmonary Tuberculosis and clinical Manifestations and diagnosis of Mycobacterial Disease
    - Diseases caused by Mycobacteria other than Mycobacterium Tuberculosis
    - Treatment of Mycobacterial Diseases of the Lungs caused by Mycobacterium Tuberculosis
    - RNTCP
    - Treatmetn of pulmonary tuberculosis in hepatic renal and endocrine disorders and in pregnancy.
    - Multidrug resistant tuberculosis
    - AIDS & tuberculosis
    - Chemoprephylaxes

PAPER – III

1. Immunological Disorders

    - Immune defenses of the lung and Cellular Communication in Respiration Immunity.
    - Sarcoidosis
    - Hypersensitivity Pneumonitis and Pulmonary Manifestations of Collagen Vascular Diseases.
    - Eosinophilie Pneumonias and Tropical eosinophilia
    - Granuloma like Wegener's, Churg Strauss etc.

2. Interstitial Diseases

    - Reactions of the Interstitial Space to injury
    - Pulmonary Fibrosis
    - Occupatioonal and Environmental Pulmonary Diseases.

3. Non-infection disorders of the pulmonary Parenchyma

    - Aspiration and inhalational (non-Occupational) Disease of the Lung
    - Pulmonary Edema
    - Drug induced pulmonary diseases

4. Pulmonary circulatory disorders

    - Pulmonary Hypertension and Cor Pulmonale
    - Pulmonary thromboembolic Disease.

5. Obstructive diseases of the lungs

    - Asthma Epidemology, General Features, Pathogenesis, Pathophysiology and therapeutic modalities Chronic Obstructive Pulmonary Diseases.
    - Immunotherapy
    - Long term Oxygen therapy
    - Inhalation therapy
    - Cystic Fibrosis
    - Pulmonary Rehabilitation
    - Acute Brochrolitis and Bronchiolitis Obliteran
    - Upper airway obstraction

- Broncholitis Obliterans organizing Pneumonia (BOOP)

6. Hypoventilation Syndromes and sleep disorders

    - Disorders of Alveolar Ventalation
    - Sleep Apnea Syndrome
    - Obesity

7. Non - Tuberculosis Infections of the Lungs General aspects

    - Approach to patient with Pulmonary Infections
    - Nosocomal Pneumonia
    - Systemic Infection and the Lungs

8. Non – Tuberculosis infections of the lungs specific disorders

    - Pneumonias caused by Gram-Positive Bacteria, Gram Negative Aerobic-Organisms and Anaerobic Organisms and Anaerobic infections of the Pleura
    - Unusual Bacterial Pneumonia including viral or rickettsial
    - Community Acquired Pneumonia
    - Bronchectasis

9. Cancer of the lungs

    - Biology of the lung cancer, small cell and non small cell
    - Epidemiology, Pathology, Natural History and Clinical Picture of the Carcinoma of the Lung.
    - Diagnostic Approach of Pulmonary Nodules
    - Small Cell Lung Cancer
    - Medical Management and Surgical Treatment of Non-small Cell Lung Cancer and Parancoplastic syndrome
    - Radiation Therapy in the Management of the Carcinoma of the Lung
    - Benign and malignant Neoplasms of the Lung other than Bronchogenic Carcinoma and thymic and neuro fibromatous tumors, Neoplasms of the Pleura, Chest Wall and diaphragm
    - Prevention of Neoplasia

10. Diseases of the Mediastinum

- Non-neoplastic disorders of the Mediastinum
- Primary Neoplasms and cysts of the Mediastinum

11. Disorders of the Pleura

- Pleural Dynamics and Effusions
- Non neoplastic and Neoplastic Pleural Effusions
- Pneumothorax
- Pyothorax and Broncho-pleural; fistula
- Pleural thickening, fibrosis and calcification

12. Acute Respiratory Failure

- Acute Respiratory failure: Introduction and Overview
- Adult Respiratory Distress Syndrome: Clinical Features, Pathogenesis, Sequential Morphological changes and Management
- Acute Respiratory failure in the patient with Obstructive Airways Disease
- Respiratory Muscles and clinical Implications of Respiratory Muscle Fatigue
- Oxygen Therapy
- Mechanical ventilation

13. Surgical Aspects of Chest Medicine

- Pre – and Post – operative evaluation AND Management of Thoracic Surgical patient.
- Chest Trauma /Trauma related lung dysfunction
- Lung Transplantation

14. Practical Assessment of Pulmonary performance

- Pulmonary function test and its Interpretations in Determining the Disability
- Spirometry, compliance , resistance, lung volume, diffusions
- Blood gas analysis
- Cardiopulmonary exercise testing
- Bronchoprovocation tests

15. Occupational Lung disorders

- Organic and inorganic dust exposure and their effects
- Environmental dust measurements, radiation and lung, occupational asthma and occupational cancer.

16. Miscellaneous

- Effects and Hazards of smoking and passive smoking and its prevention in individual and community
- Demonstration and use of equipments (Ventilator, Bronchoscope, Capnography, Pulse-oxymeter etc.)

DIPLOMA IN TUBERCULOSIS AND CHEST DISEASSES (DTCD) EXAMINATION

Paper – 1 : BASIC SCIENCES AS APPLIED TO PULMONARY MEDICINE

Time : Three Hours Maximum: 100 Marks

ANSWER ALL QUESTIONS: DRAW SUITABLE DIAGRAMS WHEREVER NECESSASRY

: Write Short notes on:

a. Anterior Mediastinum
b. High Altitude Pulmonary edema
c. Deep Sulcus sign
d. Clarithromycin
e. Respiratory acidosis
f. Preoperative Pulmonary evaluation.
g. Dynamic hyperinflation.
h. Surfactant
i. Closing Volume
j. Kveim Test.

DIPLOMA IN TUBERCULOSIS AND CHEST DISEASSES (DTCD) EXAMINATION

Paper II: PULMONARY AND EXTRAPULMONARY including RECENT ADFVANCES)

Time 3 hours Maximum: 100 marks

ANSWER ALL QUESTIONS: DRAW SUITABLE DIAGRAMS WHEREVER NECESSASRY

Q!: Describe the clinical features and managaement of Tuberculosis meningitis.

(25 marks)

Q2: How will you diagnose MDR-TB ? Write recent Concepts in the treatment of MDR-TB.

(25 marks)

A) Runyan's Classification.
B) Wallgren's Time Table
C) Brocks' syndrome
D) Erythema Npdpsi,
E) BCG Vaccination.

DIPLOMA IN TUBERCULOSIS AND CHEST DISEASSES 9DTCD) EXAMINATION

Paper – III NONTUBERCULOUS CHEST DISEASES including RECENT ADFVANCES AND AIR POLLUTION.

Time 3 hours Maximum: 100 marks

ANSWER ALL QUESTIONS: DRAW SUITABLE DIAGRAMS WHEREVER NECESSASRY

Q1 Describe non-cardiogenic pulmonary oedema and its management.

(25 marks)

Q2: Classify pneumonia, Describe the clinical features and management of community acquired pneumonia ?

(25 marks)

Q3. Write Short Notes on:

1. PIOPED
2. Modified Light's criteria
3. Loffler's syndrome
4. Eaton – Lambert syndrome
5. N-Acetyl Cysteine.

(10 marks each)

Recommended Books

S.No.	Name of the Books	Name of the Author & Publication
1.	Respiratory Diseases	Crofton & Douglas
2.	Tuberculosis	S. Sharma, Latest
3.	Principles of Chess X-ray Diagnosis	Simon Latest
4.	Diagnosis of Diseases of Chest	Fraser - Latest
5.	Murray a Nadal Text Book of Respiratory Diseases	Magon - Latest
6.	Tuberculosis Management	Toman - Latest
7.	Respiratory Care Anatomy and Physiology	Bachet
8.	Felsons Chest Roentgenoclogy	
9.	Management of Mechanically Ventilllated patients	Pierce
10.	Imaging of Chest – 2 Volumes	Silvan Mullar
11.	TB Handbook	WHO
12.	Physical Diagnosis	Wakil Golwalla
13.	Macleoss Clinical Examination	
14.	Asthma and COPD	Peter Barnes
15.	Tuberculosis	ROM and Garay
16.	Textbook of Pleural Diseases	Light
17.	Diffuse Lung Disorders	Sperber
18.	Fundamental of Respiratory Care	Egan
19.	Atlas of procedures in Respiratory Medicine	Murray & Nadal
20.	Computerised Tomography and Magnetic Resonance of Thorax	Nadich
21.	Principles and Practicals od Medicine	Davidson
22.	Harrisons Principles of Internal Medicine	
23.	Practical Approach to Critical Respiratory Medicine	Arora (Sleep disorders and Fibre Optic Bronutoscopy
24.	Pulmonary Rehabilitation	Fishman

Print Journals

S.No.	Name of the Books
1.	Chest
2.	Indian Journal of Lung Disease and Tuberculosis
3.	International Journal of Lung Disease and Tuberculosis
4.	Indian Journal of Tuberculosis
5.	British Medical Journal
6.	Lancet

On Line Journals

S.No.	Name of the Books
1.	Sleep Medicine Reviews
2.	Thorax
3.	Journal of Bronutology
4.	Clinics in Chest Medicine
5.	Journal of Allergy and Clinical Immunology