

P.G. Curriculum MD Chest and Tuberculosis Index

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Curriculum

MD Chest Diseases & Tuberculosis

The infrastructure and faculty will be as per MCI guidelines.

1. Goals

The goal of Post graduation (MD) course in Medicine (Chest) is to produce a competent chest physician who:

- ❖ Recognizes the health needs of patients having chest complaints and carries out professional obligations in keeping with principles of National Health Policy and professional ethics.
- ❖ Has acquired the competencies pertaining to chest medicine that are required to be practiced in the community and at all levels of health care system.
- ❖ Has acquired skills in effectively communicating with the patient, family and the community.
- ❖ Is aware of the contemporary advances and developments in medical sciences as related to pulmonary medicine.
- ❖ Is oriented to principles of research methodology.
- ❖ Has acquired skills in educating medical and paramedical professionals.

2. Objectives

At the end of the MD course in Medicine (Chest), the student should be able to :

- ❖ Recognize the key importance of pulmonary medicine in the context of the health priority of the country.
- ❖ Practice the specialty of Pulmonary Medicine in keeping with the principles of professional ethics.
- ❖ Identify social, economic, environmental, biological and emotional determinants of patient and institute diagnostic, therapeutic, rehabilitative, preventive and promotive measures to provide holistic care to him.
- ❖ Take detailed history, perform full physical examination and make clinical diagnosis.
- ❖ Perform relevant investigative and therapeutic procedures for the patient.
- ❖ Interpret important imaging and laboratory results.
- ❖ Diagnose illness based on the analysis of history, physical examination and investigative work up.
- ❖ Plan and deliver comprehensive treatment for illness using principles of rational drug therapy.
- ❖ Plan rehabilitation of patients suffering from chronic illness.
- ❖ Manage respiratory emergencies efficiently.
- ❖ Demonstrate skills in documentation of case details, and of morbidity and mortality data relevant to the assigned situation.
- ❖ Demonstrate empathy and humane approach towards patients and their families and respect their sensibilities.
- ❖ Demonstrate communication skills of a high order in explaining management and prognosis, providing counseling and giving health education messages to patients, families and communities.
- ❖ Develop skills as a self-directed learner, recognize continuing educational needs; use appropriate learning resources, and critically analyze relevant published literature in order to practice evidence-based pediatrics.

3. Syllabus

General Guidelines. During the training period effort will always be made that adequate time is spent in discussing pulmonary problems of public health importance in the country.

3.1. Theory

- ❖ Approach to Important Clinical Problems
- ❖ *Respiratory*. Cough/chronic cough, noisy breathing, wheezy child, respiratory distress, hemoptysis.
- ❖ *Critical Care Medicine*. All patients on ventilator with special reference to acute severe COPD and bronchial asthma
- ❖ *Nutrition*. TB suspect / COPD / asthmatic
- ❖ *Infections*. Upper & lower respiratory infection, tuberculosis, pneumonia, fungal infections, bronchiectasis, recurrent infections, nosocomial infections.
- ❖ *Oncology*. Lung cancer, benign and malignant with pleural metastasis with primary pleural malignancy
- ❖ *Miscellaneous*. Connective tissue disorder, drug induced pulmonary diseases, HIV related pulmonary disease and tuberculosis.

3.2. Practical

- ❖ Skills
 - **History and examination.** History taking including psychosocial history, physical examination, general physical examination, health function-aries and social support groups;
 - **Bedside procedures**
 - ★ *Monitoring skills: Temperature recording, capillary blood sampling, arterial blood sampling.*
 - ★ *Therapeutic skills: Hydrotherapy, nasogastric feeding, endotracheal intubation, cardiopulmonary resuscitation, administration of oxygen, venepuncture and establishment of vascular access, administration of fluids, blood, blood components, parenteral nutrition, intraosseous fluid administration, intrathecal administration of drugs, common dressings, abscess drainage and basic principles of rehabilitation.*
 - Investigative skills: Lumbar puncture, pleural, peritoneal, pericardial and subdural tap, pleural biopsy, lung biopsy, fine needle aspiration cytology, tru cut biopsy from lung, bronchoscopic alveolar lavage, pulmonary function test, sleep study, collection of urine for culture, urethral catheterization.*
 - ★ *Bedside investigations. Hemoglobin, TLC, ESR, peripheral smear staining and examination, urine: routine and microscopic examination, PFT, bronchoscopy, sputum microscopy examination, gram stain, ZN stain, gastric aspirate.*
 - **Interpretation of X-rays of chest, CT chest, ECG, ABG findings.**
 - **Understanding of common EEG patterns, x-ray findings, CT scans, ultrasonographic abnormalities.**
- **Basic Sciences**

Embryogenesis of different organ systems especially heart, genitourinary system, gastro-intestinal tract, applied anatomy of different organs, functions of kidney, liver, lungs, heart and endocrinal glands. Physiology of micturition and defecation, placental physiology, fetal and neonatal circulation, regulation of temperature

(especially newborn), blood pressure, acid base balance, fluid electrolyte balance, calcium metabolism, vitamins and their functions, hematopoiesis, hemostasis, bilirubin meta-bolism. Growth and development at different ages, puberty and its regulation, nutrition, normal requirements of various nutrients. Basic immunology, bio-statistics, clinical epidemio-logy, ethical and medicolegal issues, teaching methodology and managerial skills, pharmaco-kinetics of commonly used drugs, microbial agents and their epidemiology.

➤ **Community and Social Pulmonary Medicine**

Prevention and cure of tuberculosis under RNTCP, impementation of DOTS. Prevention of HIV (VCTC) as it increases prevalence of tuberculosis, investigation of adverse events following anti tubercular therpay, general principles of prevention and control of tuberculosis and nosocominal infection (pneumonia), prevention of drop let infection.

4. Teaching Program

4.1. General Principles

Acquisition of practical competencies being the keystone of postgraduate medical education, postgraduate training is skills oriented.

Learning in postgraduate program is essentially self-directed and primarily emanating from clinical and academic work. The formal sessions are merely meant to supplement this core effort.

4.2. Teaching Sessions

- ❖ Clinical case discussions :
 - *PG bed side*
 - *Teaching rounds*
 - *Mock Examination*
- ❖ Seminars/Journal club
- ❖ Statistical meetings
- ❖ Mortality meetings
- ❖ Perinatal meetings
- ❖ Interdepartmental Meetings
- ❖ Others – Guest lectures/vertical seminars/Central Stat meets.

4.3. Teaching Schedule

In addition to bedside teaching rounds in the department, there will be daily hourly sessions of formal teaching. The suggested teaching schedule is as follows:

- | | |
|--|-------------|
| 1. Bed side case discussion | Once a week |
| 2. Journal club/Seminar alternate week | Once a week |
| 3. Grand round | Once a week |
| 4. Emergency case discussion | Once a week |
| 5. Weekly stat and mortality meet (detailed discussion of all the deaths occurring in previous week) | Once a week |

6. Central session (held in hospital auditorium regarding various topics like CPC, guest lectures, student seminars, grand round, sessions on basic sciences, biostatistics, research methodology, teaching methodology, health economics, medical ethics and legal issues) or teaching rounds at bed side. Once a week

Note:

- ❖ All sessions are attended by the faculty members. All PGs are supposed to attend the sessions except the ones posted in PCCU and emergency.
- ❖ All the teaching sessions are assessed by the consultants at the end of session and marks are considered for internal assessment.
- ❖ Attendance of the Residents at various sessions has to be at least 75%.

5. Postings

The postgraduate student will rotate through all the clinical units in the department. In addition, following special rotations are also undertaken:

Chest Ward (including outpatient dept):	2-3 months
Intensive Care:	3-4 months
Emergency:	2-3 months
NIV unit :	2-3 months

No posting at one area will be for more than 2 months at a stretch.

During first year the resident will work under direct supervision of the 2/3 year resident/senior resident and consultant on call. S/he will be responsible for taking detailed history, examination of patients as per the file record and send appropriate investigations as advised by seniors. Initially all procedures are to be observed and then done under supervision of seniors and during 2/3 year can do procedures independently. In 2nd year, resident is posted in special clinics also and making of discharge cards including referrals. In 3rd year, resident is also encouraged to make independent decisions in management of cases. S/he is also involved in teaching of undergraduate students.

6. Thesis

Every candidate shall carry out work on an assigned research project under the guidance of a recognized Postgraduate Teacher, the project shall be written and submitted in the form of a Thesis.

- ❖ Every candidate shall submit thesis plan to the University within nine months from the date of admission.

Thesis shall be submitted to the University six months before the commencement of theory examination i.e. for examination May/June session, 30th November of the preceding year of examination and for November/December session 31st May of the year of examination.

- ❖ The student will identify a relevant research question; (ii) conduct a critical review of literature; (iii) formulate a hypothesis; (iv) determine the most suitable study design; (v) state the objectives of the study; (vi) prepare a study protocol; (vii) undertake a study according to the protocol; (viii) analyze and interpret research data, and draw conclusions; (ix) write a research paper.

7. Assessment

All the PG residents will be assessed daily for their academic activities and also periodically.

7.1. General Principles

- ❖ The assessment is valid, objective, and reliable.
- ❖ It covers cognitive, psychomotor and affective domains.
- ❖ Formative, continuing and summative (final) assessment is also conducted in theory as well as practicals/clinicals. In addition, thesis is also assessed separately.

7.2. Formative Assessment

The formative assessment is continuous as well as end-of-term. The former is based on the feedback from the senior residents and the consultants concerned. End-of-term assessment is held at the end of each semester (upto the 5th semester). Formative assessment will not count towards pass/fail at the end of the program, but will provide feedback to the candidate.

7.3. Internal Assessment

The performance of the Postgraduate student during the training period should be monitored throughout the course and duly recorded in the log books as evidence of the ability and daily work of the student. Marks should be allotted out of 100 as followed.

Sr. No.	Items	Marks
1.	Personal Attributes	20
2.	Clinical Work	20
3.	Academic activities	20
4.	End of term theory examination	20
5.	End of term practical examination	20

1. Personal attributes:

- ❖ **Behavior and Emotional Stability:** Dependable, disciplined, dedicated, stable in emergency situations, shows positive approach.
- ❖ **Motivation and Initiative:** Takes on responsibility, innovative, enterprising, does not shirk duties or leave any work pending.
- ❖ **Honesty and Integrity:** Truthful, admits mistakes, does not cook up information, has ethical conduct, exhibits good moral values, loyal to the institution.

- ❖ **Interpersonal Skills and Leadership Quality:** Has compassionate attitude towards patients and attendants, gets on well with colleagues and paramedical staff, is respectful to seniors, has good communication skills.

2. Clinical Work:

- ❖ **Availability:** Punctual, available continuously on duty, responds promptly on calls and takes proper permission for leave.
- ❖ **Diligence:** Dedicated, hardworking, does not shirk duties, leaves no work pending, does not sit idle, competent in clinical case work up and management.
- ❖ **Academic ability:** Intelligent, shows sound knowledge and skills, participates adequately in academic activities, and performs well in oral presentation and departmental tests.
- ❖ **Clinical Performance:** Proficient in clinical presentations and case discussion during rounds and OPD work up. Preparing Documents of the case history/examination and progress notes in the file (daily notes, round discussion, investigations and management) Skill of performing bed side procedures and handling emergencies.

3. **Academic Activity:** Performance during presentation at Journal club/ Seminar/ Case discussion/Stat meeting and other academic sessions. Proficiency in skills as mentioned in job responsibilities.

4. **End of term theory examination** conducted at end of 1st, 2nd year and after 2 years 9 months

5. **End of term practical/oral examinations** after 2 years 9 months.

Marks for **personal attributes** and **clinical work** should be given annually by all the consultants under whom the resident was posted during the year. Average of the three years should be put as the final marks out of 20.

Marks for **academic activity** should be given by the all consultants who have attended the session presented by the resident.

The Internal assessment should be presented to the Board of examiners for due consideration at the time of Final Examinations.

7.4. Summative Assessment

- ❖ Ratio of marks in theory and practicals will be equal.
- ❖ The pass percentage will be 50%.
- ❖ Candidate will have to pass theory and practical examinations separately.

A. Theory Examination (Total = 400)

Paper	Title	Marks
Paper 1	Basic sciences as related to pulmonary medicine	100
Paper 2	Principles and Practice of Pulmonary Medicine	100
Paper 3	Preventive & Social aspects of Pulmonary Medicine and tuberculosis	100
Paper 4	Recent Advances in Pulmonary Medicine	100

B. Practical & Viva voce Examination(Total =400)

Long Case (s) }
Short Case (s) } 300

Viva Voce - 100

8. Job Responsibilities

- ❖ **OPD** : History and work up of all cases and presentation to the consultants
 - *This includes all the special clinics also*
 - *Documentation. OPD card and register completion and maintenance*
- ❖ **Indoors** :
 - *PCCU/NIV unit Emergency : Sending investigations and filling investigation forms*
 - *Ward : History and work up of all cases*
 - *Starting initial management – Oxygen, IV antibiotics, fluids*
 - *Transport of sick patients*
 - *Preparation of weekly, monthly & annual stat*
 - *Sending AFP reports.*
 - *Performing procedures :*
 - *Maintaining I/V line*
 - *Plural tap, peritoneal tap, pericardial tap, central line insertion, pleural biopsy, BAL, bronchoscopy, PFT, sleep study*
 - *Examination of all patients and documentaion the the files.*
 - *Completion of files*
 - *Preparation of typed discharge summary*

9. Suggested Reading

- ❖ Fishmen's Pulmonary Diseases and Disorders
- ❖ Croftan's Pulmonary Diseases

9.1 Journals

- ❖ *Indian J Tuberculosis*
- ❖ *Chest*
- ❖ *Chest Clinics*

- ❖ *Critical Care Clinics*
- ❖ *JAPI*
- ❖ *Lung India*

10. Model Test Papers

MODEL QUESTION PAPER

MD (Chest and Tuberculosis)
Paper-I

Basic Sciences as related to Pulmonary Medicine

Max. Marks:100

Time: 3 hrs

- ***Attempt ALL questions***
 - ***Answer each question & its parts in SEQUENTIAL ORDER***
 - ***ALL questions carry equal marks***
 - ***Illustrate your answer with SUITABLE DIAGRAMS***
-

- I Etiopathogenesis, diagnosis and management of sarcoidosis.
- II Etiology, diagnosis and staging of pleural mesothelioma.
- III Risk factors and management of obstructive sleep apnea
- IV Write a note on allergic bronchopulmonary aspergillosis
- V Pathophysiology and management of acute exacerbation of COPD.
- VI Describe the differential diagnosis along with anatomical planes the differential diagnosis of mediastinal masses
- VII Etiopathogenesis, diagnosis and management of bronchogenic carcinoma.
- VIII Describe the various congenital anomalies of the lung and mediastinum which have a clinical implication
- IX Etiopathogenesis, diagnosis and management of interstitial lung diseases.
- X Describe HIV and tuberculosis co-infection

MODEL QUESTION PAPER

MD (Chest and Tuberculosis)

Paper-II

Principles and practice of Pulmonary Medicine

*Max. Marks:100**Time: 3 hrs*

-
- ***Attempt ALL questions***
 - ***Answer each question & its parts in SEQUENTIAL ORDER***
 - ***ALL questions carry equal marks***
 - ***Illustrate your answer with SUITABLE DIAGRAMS***
-

- I Describe the diagnosis & management of community acquired pneumonia.
- II Describe etiology, staging, diagnosis and management of non small cell lung cancer.
- III Give the Diagnosis and management of stable COPD.
- IV Immunopathogenesis of tubercular granuloma.
- V Secondary infections in AIDS. Write a note on penumocystis jirovecii pneumonia.
- VI Describe the pathogenesis and management of pulmonary edema
- VII Describe silicotuberculosis
- VIII Give the indications and evaluation of a patient undergoing lung transplantation, enumerate the various complications associated with it.
- IX Describe acute hypoxemic respiratory failure
- X Give the management of patient with nosocomial pneumonias

MODEL QUESTION PAPER

MD (Chest and Tuberculosis)
Paper-III

Preventive & social aspects of Pulmonary Medicine and tuberculosis

*Max. Marks:100**Time: 3 hrs*

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- **Attempt ALL questions**
 - **Answer each question & its parts in SEQUENTIAL ORDER**
 - **ALL questions carry equal marks**
 - **Illustrate your answer with SUITABLE DIAGRAMS**
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- I Write a note on anaerobic lung infections.
- II Screening and tumour markers in bronchogenic carcinoma
- III Describe the management of MDR tuberculosis
- IV Write a note on revised national tuberculosis control programme
- V Management of acute severe asthma.
- VI Describe the rehabilitation plan for a patient of COPD
- VII Give the treatment strategies for patient of pneumothorax
- VIII Give the treatment plan for a patient with asthma who is pregnant
- IX Describe the various pulmonary function test and its clinical co-relation
- X Describe the clinical features and management of hypersensitivity pneumonia

MODEL QUESTION PAPER

MD (Chest and Tuberculosis)
Paper-III

Recent advances in Pulmonary Medicine

Max. Marks:100

Time: 3 hrs

- **Attempt ALL questions**
 - **Answer each question & its parts in SEQUENTIAL ORDER**
 - **ALL questions carry equal marks**
 - **Illustrate your answer with SUITABLE DIAGRAMS**
-

- I Diagnosis & management of idiopathic pulmonary fibrosis.
- II Diagnosis & management of bronchiectasis.
- III Role of immunotherapy in bronchial asthma.
- IV Describe the clinical features and management of pulmonary embolism
- V Describe the etiology and management of haemoptysis
- VI Describe the recent advances in the management of COPD
- VII Describe the current treatment strategies for a patient of empyema
- VIII Discuss the newer strategies for management of ARDS
- IX Describe the newer techniques used in bronchoscopy
- X Describe pathophysiology, clinical features of pulmonary vasculitis