BHARATH INSTITUTE OF HIGHER EDUCATION AND RESEARCH

Program
MD RESPIRATORY MEDICINE

(Revised with effect from 2019-2020 onwards)

INTRODUCTION

The Department of Respiratory Medicine in AIMS started functioning in the year 1998. The department has many unique features. For the first time in Kerala, a full-fledged Respiratory Medicine unit started functioning with all modern facilities. Since then it functions as an apex referral center, not only for Kerala, but also for South India.

It is equipped with specialized services like video bronchoscopy, non-invasive ventilator, computerized spirometry, Lung diffusion study, polysomnography, ventilation perfusion scanning, bronchial artery embolisation, immunotherapy, video-thoracoscopy and critical care facilities. Since 2004, it trains students for national Board examination (Dip.NB). The Department has the track records of conducting CME programs, workshops and national conferences targeting the pulmonary physicians and Post Graduate students. The Department also undertakes funded research projects.

Need and Scope of MD Course in TB & Respiratory Diseases

Lung disease is a major cause of morbidity and mortality all over the world. Tuberculosis, which primarily involves the lungs, is reported in 1.3 to 2.5 percent of general population. The recent threat of Acquired Immuno Deficiency Syndrome (AIDS) has further aggravated the tuberculosis problem, globally and is a major problem in our country.

Besides tuberculosis, there is a heavy burden of non-tuberculous lung diseases and respiratory emergencies. Diseases such as bronchial asthma, chronic bronchitis, respiratory infections, lung cancer and others, account for about 70 percent for the lung diseases seen in any large hospital in India. Asthma alone may affect 5-7 percent of adults & about 10 percent of children. Occurrence of occupational and environmental hazards has alone increased. The Bhopal gas tragedy is only one example of such disasters. Respiratory failure secondary to infections, road accidents and other trauma, poisoning and intoxication, medical disorders, and several other conditions, may account for a heavy mortality. Tobacco-smoking, a widely prevalent habit, is the major cause of many lung diseases in India, responsible for 7 to 13 million patients of chronic obstructive pulmonary disease (COPD) and 0.11 to 0.21 million COPD deaths.

There is a great need of comprehensive training of physicians in this specialty, empowering them with the skill and knowledge of specialized diagnostic and therapeutic services in respiratory medicine to be catered at all levels of health care delivery.

The training of a physician at the postdoctoral level is to prepare him/her for being a consultant and a teacher or a research worker. The curriculum for TB & Respiratory Diseases is, designed to impart an intensive clinical training to students (MBBS) who qualify the screening examinations for admission to this course. He/ She is also given a good insight in the applied basic medical sciences such as physiology pathology, microbiology, biochemistry, immunology, pharmacology, biophysics, epidemiology and biostatistics.

Goals

The essential goal of the Programme is to produce post graduate fellows who should

i. Recognize the importance of pulmonary and critical care in the context of the health needs of the community and the national priorities in the health sector.

ii. Practice pulmonary and critical care ethically and in accordance with the principles of primary health care.

iii. Demonstrate sufficient understanding of basic sciences in pulmonary and Critical Care Medicine appropriate to the level of postgraduate training.

iv. Identify social, economical, environmental, biological and emotional determinants of health in a given case, and take them into account while planning therapeutic, rehabilitative, preventive and promotive measures/ strategies.

v. Diagnose and manage pulmonary and critical care disease on the basis of clinical assessment, and appropriately selected and conducted investigations.

vi. Plan and advice measures for the prevention and rehabilitation of patients suffering from respiratory diseases and disability.

vii. Demonstrate empathy and humane approach towards patients and their families and exhibit interpersonal behavior in accordance with the societal norms and expectations.

viii. Play the assigned role in the implementation of National Tuberculosis and other health programmes effectively and responsibility.

ix. Organize and supervise the chosen/ assigned health care services demonstrating adequate managerial skills in the field situation.

x. Develop skills as a self-directed learner, recognize continuing educational needs: select and use appropriate learning resources.

xi. Demonstrate competence in basic concepts of research methodology and epidemiology, and be able to critically analyse relevant published research literature.

Objectives:

The following objectives are laid out to achieve the goals of the course. These objectives are to be achieved by the time the candidate completes the three-year course. The Objectives may be considered under the subheadings.

1. Knowledge (Cognitive domain)
2. Skills (Psycho motor domain)
3. Human Values, Ethical practice and Communication skills.

Program Outcomes

PO1 Recognize the importance of pulmonary and critical care in the context of the health needs of the community and the national priorities in the health sector.

PO2 Practice pulmonary and critical care ethically and in accordance with the principles of primary health care.

PO3 Demonstrate sufficient understanding of basic sciences in pulmonary and Critical Care Medicine appropriate to the level of postgraduate training.

PO4 Identify social, economical, environmental, biological and emotional determinants of health in a given case, and take them into account while planning therapeutic, rehabilitative, preventive and promotive measures/ strategies.

PO5 Diagnose and manage pulmonary and critical care disease on the basis of clinical assessment, and appropriately selected and conducted investigations.

PO6 Plan and advice measures for the prevention and rehabilitation of patients suffering from respiratory diseases and disability.

PO7 Demonstrate empathy and humane approach towards patients and their families and exhibit interpersonal behavior in accordance with the societal norms and expectations.

PO8 Play the assigned role in the implementation of National Tuberculosis and other health programmes effectively and responsibility.

PO9 Organize and supervise the chosen/ assigned health care services demonstrating adequate managerial skills in the field situation.

PO10 effectively communicate with patients or relatives so as to educate them sufficiently and give them the full benefit of informed consent to treatment and ensure compliance.

PO11 effectively communicate with colleagues.

Program Specific Outcomes

PSO1 Take a proper clinical history, examine the patient, perform essential diagnostic procedures , order relevant tests and interpret the results to come to a reasonable diagnosis about the surgical condition

PSO2 Perform procedures like Lymph node FNAC, Biopsy, Pleurocenthesis, ICD, Pleural Biopsy, Medical Pleurodesis, Lung Biopsy, Pig tail catheterization, ICD insertion, Intubations etc.

PSO3 Provide basic and advanced life saving support services (BLS & ALS) in emergency situations

PSO4 Perform daily Out patient services including patient screening and disease determination.

PSO5 Monitoring patients in ward and in ICUs

PSO6 Preoperative evaluation for fitness for surgical procedures

PSO7 Describe aetiology, pathophysiology, principles of diagnosis and management of common respiratory problems including emergencies, in adults.

PSO8 Participate in community out reach activities like camps, school screening and public education.

PSO9 Participate in department research activities.

PSO10 Prescribe medications for various ailments and follow up patients to understand outcomes.

PSO11 Present original research article in state conference/National/international conference.

PSO12 To do thesis work in the field of respiratory medicine under guidance of senior faculty.

PSO13 Teach junior post graduates, undergraduates and respiratory therapy students about respiratory medicne

COMPONENTS OF THE POSTGRADUATE CURRICULUM:

The major components of the Postgraduate curriculum shall be:

- Theoretical knowledge
- Practical and clinical skills
- Thesis skills.

- Attitudes including communication skills.
- Training in research methodology

Knowledge:
Objectives related to knowledge and higher cognitive abilities expected to be achieved during the course are given below. At the end of training, the candidate must be able to:

- Describe aetiology, pathophysiology, principles of diagnosis and management of common respiratory problems including emergencies, in adults.
- Describe Lung malignancies and their management including prevention.
- Demonstrate understanding of basic sciences relevant to Respiratory Medicine.
- Recognize conditions that may be outside the area of his specialty/competence and to refer them to proper specialist.
- Update himself by self study and by attending courses, conferences and seminars relevant to Respiratory Medicine
- Teach and guide his team, colleagues and other students.
- Undertake audit and carry out research with the aim of publishing his work and presenting his work at various scientific fora.

Skills

- Take a proper clinical history, examine the patient, perform essential diagnostic procedures , order relevant tests and interpret the results to come to a reasonable diagnosis about the surgical condition.
- Perform procedures like Lymph node FNAC, Biopsy, Pleurocenthesis, ICD, Pleural Biopsy, Medical Pleurodesis, Lung Biopsy, Pig tail catheterization, ICD insertion, Intubations etc.
- Provide basic and advanced life saving support services (BLS & ALS) in emergency situations.
- Monitoring patients in ward and in ICUs
- Preoperative evaluation for fitness for surgical procedures

Human values, Ethical practice and communication skills

- Adopt ethical principles in all aspects of his medical practice. Professional honesty and integrity are to be fostered. Medical care is to be delivered irrespective of the social status, caste, reed or religion of the patient.
- Develop communication skills and to obtain an informed consent from the patient.
- Provide leadership and get the best out of his team.
- Apply high moral and ethical standards while carrying out human or animal research.
- Accept the limitations of his knowledge and skill and to ask for help from colleagues when needed.
- Respect patients' rights and privileges

Essential Knowledge

Respiratory Medicine covers common Respiratory disorders like pleural diseases, airway diseases, pulmonary vascular diseases, infectious disorders, Tuberculosis, interstitial lung diseases, occupational lung disease, sleep apnea, Lung malignancies and so on. A Respiratory Physician should also have knowledge of some common problems in allied specialties. Furthermore, he should be familiar with complications, current controversies and recent advances in these topics.

The topics are considered under:

- Basic sciences
- General Topic
- Respiratory Medicine topics

Basic sciences include anatomy, physiology, biochemistry, microbiology and pathology as found in current textbooks. The stress is on applied anatomy, pathophysiology and respiratory pathology and respiratory physiology.

General topics including the following

Clinical history and examination - detailed systematic history taking, clinical examination of various systems, coming to a provisional working diagnosis.
Rationale of diagnostic tests- Ordering diagnostic test with prioritizing the needs, based on the clinical, hospital and the patient's socioeconomic conditions.
Informed consent / Medico legal cases- Understanding the implications of acts of omission and commission in practice. Issues regarding Consumer protection Act.- Implications in a medico- legal case like accidents assaults etc.
Communication skills with the patient- Understanding clarity in communication, compassionate explanations and giving emotional support to at the time of suffering and bereavement.
Principles of medical audit- Understanding the audit process and outcome. Methods adopted for the same. Basic statistics to understand and critically evaluate published research paper
Principles of evidence based medicine - Understanding journal based literature study; the value of textbook, reference book articles; value of review articles; original articles and their critical assessment. Understanding the value of retrospective, prospective, randomized controlled and blinded studies.- Understanding the principles and meanings of various biostatistical tests applied research studies

Medical ethics / Social responsibilities as a physcian
Use of computers in medicine
Health insurance, Health Care financing **Few lectures or a seminar on basic understanding of pharmacoeconomics.**
Undertaking clinical audit
Prospective data collection/ writing case reports and clinical papers
Giving presentation / Computer presentation
Principles in Prevention of Nosocomical infections
Fluid electrolyte balance/Acid–Base metabolism- The body fluid compartments; metabolism of water and electrolytes; factors maintaining homeostasis; acidosis and alkalosis
Blood transfusion- Blood grouping; cross matching; blood component therapy; complications of blood transfusion; blood substitutes; auto transfusions; cell savers.
Principles of Oncology- cell kinetics; causation of tumours; principles of oncologic surgery, radiotherapy and chemotherapy, paraneoplastic syndromes; cancer pain management; palliative care.
Shock:- types of shock; diagnosis; resuscitation; pharmacological & ventilatory management.

Topics on Respiratory diseases

I. Anatomy:

1. Embryology of heart and lungs
2. Anatomy of Thoracic cage and diaphragm
3. Anatomy of pleura
4. Segmental anatomy of lung
5. Pulmonary arterial and venous system
6. Lymphatics of lung
7. Nerve supply of lungs and pleura
8. Ultra structure of lung
9. Lung cell dynamics and culturing
10. Anatomy of heart and great vessels
11. Mediastinum divisions, contents
12. Anatomy of structures in the mediastinum Thymus, lymph nodes, oesophagus, lymphatics nerves
13. Osteology of ribs and vertebrae
14. Anatomy of thoracic inlet.

II. Physiology:

1. Physiology of respiration and its control
2. Lung function rests
3. Pathophysiology of corpulmonale
4. Pathophysiology of respiratory failure
5. Physiology of cardiac output and pulmonary circulation
6. Electrolytes and fluid balance
7. Pulmonary Physiology of high altitude

III. Pharmacology:

1. Pharmacology of anti-tubercular agents
2. Pharmacology of expectorants and anti-tussives
3. Pharmacology of bronchodilators
4. Pharmacological mechanisms in bronchial asthma
5. Anti-viral agents
6. Pharmacology of radio pharmaceuticals used in diagnosis of respiratory diseases
7. Pharmacology of cancer chemotherapy

IV. Pathology:

1. Pathogenesis and pathology of tuberculosis (Pulmonary and extra pulmonary)
2. Pathology of non-tubercular chest diseases
3. Fundamentals of genetics and inherited pulmonary diseases
4. Pathology of viral and mycotic lung diseases
5. Pathology of occupational lung diseases
6. Pathology of Neoplasms of lung, pleura and mediastinum
7. Pathology of Pulmonary Hypertension

8. Pathology of interstitial lung diseases
9. Pulmonary manifestations in systemic disease.

V. Microbiology:

1. Microbiology of Tubercle bacillus-Classification, cultural characteristics, identifications, laboratory diagnosis including opportunistic mycobacteria.
2. Microbiology of viruses, which involve respiratory tract – classifications, culture methods, Laboratory diagnosis.
3. Mycotic agents, which involve respiratory tract.
4. Allergy and immunology with reference to Bronchial Asthma
5. Microbiology of bacterial respiratory infections
6. Anaerobic lung infections

VI. Preventive Medicine:

1. Epidemiology of tuberculosis
2. National Tuberculosis control programme
3. Epidemiology of non-tubercular diseases of chest.
4. Air pollution and air quality standards, Methods of preventing of air pollution
5. Medical statistics – Methods of investigation planning, collection of data, analysis of data, statistical analysis.
6. Entomology of – filaria, House dust mite, and other vectors causing pulmonary diseases

Recommended Syllabus for Part II

1. History of tuberculosis and chest disease
2. Clinical aspects and treatment of pulmonary tuberculosis
3. Clinical aspects and treatment of extra pulmonary tuberculosis
4. Clinical aspects and treatment of non-tubercular chest disease including mycotic and viral diseases
5. Respiratory allergy and clinical immunology
6. Clinical aspects of occupational lungs disease
7. Physical therapy non-respiratory disease and rehabilitation of chronic respiratory patients.
8. Systemic manifestations of pulmonary disease and pulmonary manifestations of systemic disease.
9. Invasive and non-invasive investigative procedure in respiratory disease.
10. Radio pharmaceuticals in respiratory disease
11. Pulmonary radiology
12. Radiotherapy in lung cancer
13. Inherited pulmonary disorders
14. Recent trends in respiratory diseases.

Regulations for MD in TB & Respiratory Diseases

Name of course: MD in TB & Respiratory Diseases

1. Qualification for Admission: (Same as for other MD Degree Kerala University)
    (a) Only graduate of modern Medicine (M.B.B.S) are eligible.
    (b) One year of compulsory rotary internship should be completed.
2. Duration of course: (Same as for others MD Courses of Kerala University)
    (a) Three years for fresh graduates
    (b) Two years for those who have diploma qualification
3. Teaching and Training:
    (a) Students will be posted as full time students in the departments of TB & Respiratory Disease. They will work in the concerned wards, attend to bedside clinics, participate in clinical club, group discussions, seminars attend the chest-thoracic and allergy clinic conducted by the department.
    (b) Candidates will have to participate in the Under Graduation teaching to get experience in the methods of teaching medical students.
    (c) Posting for 15 days in the National Tuberculosis Institute Bangalore to study the various aspects of the National Tuberculosis Control Programme
    (d) Posting for 7 days at the Tuberculosis Chemotherapy Research Center, Madras to study the methodology in Tuberculosis Research.
    (e) Posting for 7 days for at the out-patient of the Tuberculosis Training and Demonstration Center Trivandrum to the working of the District T.B Control Programme.
    (f) Posting for 30 days in the Cardio-Vascular and Thoracic surgery Department of Medical College.
    (g) Afternoon lecture demonstration classes in Anatomy Physiology, Pharmacology, Microbiology Biophysics preventive and social medicine and medical status during the first year of study.
    (h) Attend case demonstration and classes in Orthopedic, Dermatology, Ophthalmology, Medical Neurology, Gastro enterology, Physical Medicine and Rehabilitation, Radiology and Nuclear Medicine as and when they are arranged.

(i) Posting for 2 months under General Medicine Department (in-patient and out-patient work)

5. Thesis: (same as for other M.D courses in Kerala University) Every candidate will have to work on a project assigned to him and submit a " Thesis" on it after completion of the work. There will be a guide and co- guide for the work. This inparts training in the methodology of research, collection of data, statistical analysis, and its proper presentation. The Thesis should be approved 3 months before the candidate is allowed to take the final examination

Essential skills

The following list is drawn up with a view to specifying basic minimum skills to be acquired. While an attempt has been made to specify the year wise distribution of the learning of skills (in the latter part of curriculum), it is recognized that the process is a continuous one. The year wise distribution of the skills recommended are to be used as general guideline.

Provision of training in various specialty subjects has been made during the second year of the course. The list within the tables, indicates the procedures that the students should, by the end of the course, be able to perform independently (PI) by himself / herself , performed with assistance (PA) ,observed (O) or have assisted performing faculty member.

Skills may be considered under the following headings

a) Basic skills
b) Ward procedures
c) ICU procedures
d) Emergency room procedures

a) <u>Basic skills</u>

The student should have acquired certain skills during his under-graduation and internship. These skills have to be reinforced at the beginning of the training period.

Procedure	Category	Year	Number

Insertion of I.V.lines, nasogastric tubes, urinary catheters, etc	PI	1	75
History & Physical Examination	PI	1	250

b) Ward procedures

Ward work forms an important part of the training of the training of the surgeons. In addition to the touting examination of the patient with proper recording of findings, diligent practice of the following is recommended.

Procedure	Category	Year	Number
Ability to teach undergraduates and interns	PI	1	NA
Blood sampling – Venous and arterial	PI	1	NA
Communication skills with patients, relatives, colleagues and paramedical staff	PI	1	NA
Ordering laboratory and Radiological investigations and interpretation of report	PI	1	NA
Proficiency in common ward procedures	PI	1	NA
FNAC/Trucut biopsy	PI	1	10
Hand held Doppler for varicose veins/arterial disease	PI	1	10
Per-rectal examination and Proctoscopy	PI	1	NA
Thoracocentesis, Tube thoracostomy	PI	II	5
Universal precautions against communicable diseases	PI	1	NA

NA: Not applicable

C) ICU Procedures

Procedure	Category	Year	Number
Insertion of Arterial lines	PI	II	10
Insertion of central venous lines	PI	II	10
Insertion of Endotracheal tubes	PI	II	10
Intercostal drainage	PI	II	5
Tracheostomy	PI	1	2
Working knowledge of ventilators and various monitors	PI	1	NA
Interpretation of Arterial Blood gases	PI	1	NA
Correction of Electrolyte disturbances	PI	I	NA

d) Emergency Room Procedures

Procedure	Category	Year	Number
Arterial and venous lines	PI	1	5
Cardiopulmonary Resuscitation	PI	I	5
Management of Airway obstruction	PI	I	5

Management of Shock and Cardiac / Respiratory failure	PI	I	5
Emergency tube thoracostomy	PI	II	15

e) Preoperative work up

Procedure	Category	Year	Number
Basic evaluation for common surgical procedures	PI	II	10
Evaluation for major procedures, cardiac, thoracic surgery, lung resection	PI	II	10
Estimating post operative lung function thru preop screening	PI	II	10
Identification of high risk individuals, grading the risk	PI	II	10
Preoperative management of patients with respiratory diseases	PI	II	10

f) Post operative Care

Procedure	Category	Year	Number
Airway management	PI	II	10
Chest Physiotherapy	PI	1I	25
Management of epidural analgesia	PI	II	10
Management of postoperative hypotension and hypertension	PI	I	20
Post operative pain control	PI	II	25
Skills for proper Fluid and Antibiotic management	PI	II	50
Care of Thoracostomy tube	PI	II	50

g) Minor O.T. procedures

Procedure	Category	Year	Number
Bronchoscopy	PI	II	20
Drainage of cervical cold abscess	PI	1	10
FNAC lymph node and other soft tissue swellings	PI	I	10
Pleural biopsy (closed)	PI	II	5
Pleural biopsy using thoracoscope	PA	II	5
Lung biopsy, FNCA	PI	I	10
Insertion of intercostals tube for pneumothorax, pleural effusion, empyema etc.	PI	II	20
Insertion of pig tail for pleural diseases	PI	II	5
Drainage of loculated pleural effusion under radiological guidance	PI	III	10
Drainage of loculated pleural effusion under through thoracoscope	PA	II	5

h) Special procedures

Procedure	Category	Year	Number
Performance of spirometry	PI	I	10
Performance of diffusion studies of lung	PI	I	5
Performance of sleep study for subjects suspected to have obstructive sleep apnea	PI	I	5
Allergy skin testing	PI	I	25
Immunotherapy	PI	III	10
6 minute walk test	PI	I	10
Mantoux test	PI	I	10

Teaching and Learning Activities

A candidate pursuing the course should work in the institution as a full time student. Each year should be taken as a unit for the purpose of calculating attendance. Every student shall attend teaching and learning activities during each year as prescribed by the department and not absent himself / herself from work without valid reasons. A list of teaching and learning activities designed to facilitate students acquire essential knowledge and skills outlined is given below. The students shall enter in the Log Book relevant details of all teaching/learning activities.

1. Lectures:

Lectures are to be kept to a minimum. Lectures may be didactic or integrated.

a) **Didactic Lectures**: Recommended for selected common topics for postgraduate students of all specialties. Few topics are suggested as examples:
   1) Bio-statistics
   2) Research Methods
   3) Medical code of Conduct and Medical Ethics
   4) Communication Skills etc.

These topics may preferably taken up in the first few months of the Ist year. Few lectures or other type of exposure to human behavior studies shall be taken.

b) Integrated Lectures:

These are recommended to be taken by multidisciplinary teams for selected topics, eg. Jaundice, Diabetes mellitus, Thyroid etc.

2. **Journal Club**

Recommended to be held once a month. All the PG students are expected to attend and actively participate in discussion. Further, every candidate must make a presentation from the allotted journal (s), selected articles at least four times a year. The presentations would be evaluated using checklists and would carry weightage for internal assessment (see checklist in Chapter IV).

3. **Subject Seminar**:

Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion. Further, every candidate must present on selected topics at least four times a year and total of 12 seminar presentations in three years. The presentations would be evaluated using checklists and would carry weightage for internal assessment (see checklist in Chapter IV). A timetable for the subject with names of the student and the moderator should be scheduled at the beginning of every year.

4. **Student Symposium**:

Recommended as an optional multi disciplinary Programme. The evaluation may be similar to that described for subject seminar.

5. **Ward Rounds**: Ward rounds may be service or teaching rounds.

   a) Service Rounds: Postgraduate students and Interns should do every day for the care of the patients. Newly admitted patients should be worked up by the PGs and presented to the seniors the following day.
   b) Teaching Rounds: Every unit should have grand rounds for teaching purpose. A diary should be maintained for day-to-day activities by the students.

   Entries of (a) and (b) should be made in the Log book.

6. **Clinico – Pathological Conference**: Recommended once in three months for all post graduate students. Presentation to be done by rotation. If cases are not available due to lack of clinical postmortems, it could be supplemented by published CPCs.
7. Inter Departmental Meetings. Strongly recommended particularly with departments of Pathology and Radio-Diagnosis at least once a month. These meetings should be attended by post graduate students and relevant entries must be made in the Log Book.

a) Pathology: Interesting cases may be chosen and presented by the post graduate students and discussed by them as well as the senior staff of department and Pathology departments.

b) Radio-diagnosis: Interesting cases and the imaging modalities should be discussed.

8. Teaching Skills: Postgraduate students must teach under graduate students (Eg. Medical,Dental,Nursing) by taking demonstrations, bedside clinics, tutorials, lectures etc. Assessment is made using a checklist by the faculty as well students. (See model check in Chapter IV). Record of their participation to be kept in Log book. Training of postgraduate students in Educational Science and Technology is recommended. Continuing Medical Education Programmes (CME): Recommended that at least 2 National/State level CME programmes should be attended by each student in 3 years.

9. Conferences: Recommended that at least 2 National/State level conferences should be attended by each student in 3 years. The candidates are encouraged to present papers at these conferences/CME

Rotation and posting in other departments

The listed knowledge and skills are to be learnt over a period of 3 years. The process is a continuous one. However the recommended period and timing of training in basic subjects, allied department and specialty departments is given below.

In the first year, during the morning session, student should work in the parent department. It is recommended that 2 years and 3 months to be spent in parent department and 9 months in allied and specialty departments. Depending on the time and opportunities available, some of the procedures listed for second year activity can be shifted to the first or third year. Students must be on call on a regular basis.

Basic science

Basic science should be an essential part of training. It should be done as concurrent studies during the 1st year of training. It is recommended that the candidate spends at least one hour daily, in the afternoons, for the first six months in the respective departments learning basic science relevant to pulmonary diseases. Topics for study to include anatomy, Physiology, Pathology, Microbiology, Pharmacology, Critical care and Radiology

Radiology: adequate exposure to modern imaging modalities like USG, CT, MRI and angiography

Specialty postings

Postings to other specialty departments will be during the second year. The departments and duration of postings are as under:

Department	duration
Internal medicine	2 months
Cardiology	1 month
Critical care Unit and OT	2 months
Radiology	1 month
Oncology	15 days
CVTS	15 days
Nephrology	15 days
Microbiology	15 days
Pathology	15 days
Community Medicine	15 days

Dissertation

Every candidate pursuing MD Degree course is required to carry out work on a selected research project under the guidance of a recognized postgraduate teacher. The results of such a work shall be submitted in the form of a dissertation

The dissertation is aimed to train a post graduate student in research methods and techniques. It includes identification of a problem, formulation of a hypothesis, search and review of literature, getting acquainted with recent advances, designing of a research study, collection of data, critical analysis, comparison of results and drawing conclusions.

Every candidate shall submit to the University in the prescribed proforma, a synopsis containing particulars of proposed dissertation work within 6 months from the date of commencement of the course on or before the dates notified by the university. The synopsis shall be sent through proper channel.

Such synopsis will be reviewed and the dissertation topic will be registered by the university.

No change in the dissertation topic or Guide shall be made without prior approval of the university.

The dissertation should be written under the following headings

i) Introduction

ii) Aims or objectives of study

iii) Review of literature

iv) Materials and methods

v) Results

vi) Discussion

vii) Conclusion

viii) Summary

ix) References

x) Tables

xi) Annexures

The written text of dissertation shall not be less than 50 pages and shall not exceed 150 pages excluding references, tables, questionnaires and other annexures. It should be neatly typed in double line spacing on one side of paper (A4 size, 8.27" x 11.69") and bound properly. Spiral binding should be avoided. The dissertation shall be certified by the guide, head of the Department and head of the Institution.

Four copies of dissertation thus prepared along with the same matter on CD shall be submitted to the University, six months before final examination on or before the dates notified by the University.

The dissertation shall be valued by examiners appointed by the University. Approval of dissertation work is essential precondition for a candidate to appear in the University examination.

For some more details regarding Guide etc., please see Chapter 1 and for books on research methodology, ethics etc., see Chapter IV.

Monitoring learning process

It is essential to monitor the learning process of each candidate through continuous appraisal and regular assessment. It not only helps teachers to evaluate students, but also students to evaluate themselves. The monitoring to be done by the staff of the department based on participation of students in various teaching/learning activities. It may be structured and assessment be done using checklists that assess various aspects. Checklists are given in Chapter IV.

The learning outcomes to be assessed should include (i) Personal attitude (ii) acquisition of knowledge (iii) Clinical and operative skills (iv) Teaching skills and (v) Dissertation.

i) Personal attitudes. The essential items are

- Caring attitude
- Initiative
- Organizational ability
- Potential to cope with stressful situations and undertake responsibility
- Trustworthiness and reliability
- To understand and communicate intelligibly with patients and others
- To behave in a manner which establishes professional relationships with patients and colleagues
- Ability to work in team
- A critical enquiring approach to acquisition of knowledge

The methods used mainly consist of observation. It is appreciated that these items require a degree of subjective assessment by the guide, supervisors and peers.

ii) Acquisition of Knowledge: The methods used comprise of Log Book which records participation in various teaching / learning activities by the students. The number of activities attended and the number in which presentations are made are to be recorded. The logbook should periodically be validated by the supervisors. Some of the activities are listed. The list is not complete. Institutions may include additional activities if so, desired.

Journal Review Meeting (Journal Club): The ability to do literature search, in depth study. Presentation skills, and use of audio visual aids are to be assessed. The assessment is made by Faculty members and peers attending the meeting using a checklist (see Model Checklist – I, Chapter IV)

Seminars / Symposia: The topics should be assigned to the student well in advance to facilitate in depth study. The ability to do literature search, in depth study, presentation skills and use of audio visual aids are to be assessed using a checklist (see Model Checklist II, Chapter IV)

Clinico - pathological conferences: This should be a multidisciplinary case study of an interesting case to train the candidate to solve diagnostic and therapeutic problems by using an analytical approach. The presenter (s) are to be assessed using a check list similar to that used for seminar.

Medical Audit: Periodic morbidity and mortality meeting be held. Attendance and participation in these must be insisted upon. This may not be included in assessment.

iii) Clinical skills

Day-to-Day work: Skills in outpatient and ward work should be assessed periodically. The assessment should include the candidates sincerity and punctuality, analytical ability and communication skills (see Model Checklist III, Chapter IV).

Clinical meetings: Candidates should periodically present cases to his peers and faculty members. This should be assessed using a check list (see Model checklist IV, Chapter IV).

Clinical and procedure skills: The candidate should be given graded responsibility to enable learning by apprenticeship. The performance is assessed by the guide by direct observation. Particulars are recorded by the student in the logbook. (Table No.3, Chapter IV)

iv) Teaching skills: Candidates should be encouraged to teach undergraduate medical students and paramedical students, if any. This performance should be based on assessment by the faculty members of the department and from feedback from the undergraduate students (See Model checklist V, Chapter IV)

v) Dissertation in the department: Periodic presentation are to be made in the department. Initially the topic is to be presented before submission to the University for registration, again before finalisation for critical evaluation and another before final submission of the completed work (See Model Checklist VI & VII, Chapter IV)

vi) Periodic tests: The departments may conduct three tests, two of them be annual tests, one at the end of first year and the other in the second year. The third test may be held three months before the final examination. The tests may include written papers, practicals / clinicals and viva voce.

vii) Work diary / Log Book – Every candidate shall maintain a work diary and record his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any conducted by the candidate.

viii) Records: Records, log books and marks obtained in tests will be maintaine4d by the Head of the Department and will be made available to the University or MCI.

Log book

The log book is a record of the important activities of the candidates during his training, Internal assessment should be based on the evaluation of the log book. Collectively, log books are a tool for the evaluation of the training programme of the institution by external agencies. The record includes academic activities as well as the presentation and procedures carried out by the candidate.

Format for the log book for the different activities is given in Tables 1,2 and 3 of Chapter IV. Copies may be made and used by the institutions.

Procedure for defaulters: Every department should have a committee to review such situations. The defaulting candidate is counseled by the guide and Head of the Department. In extreme cases of default, the departmental committee may recommend that defaulting candidate be withheld from appearing for the examination, if she / he fails to fulfill the requirements in spite of being given adequate chances to set himself or herself right.

COURCES:

Paper - I Basic Science (Course Code – U15MDRM01)

CO1: To Understand Pulmonary circulation
CO2: Development of Lung
CO3: Pathophysiology of Pleural Fluid Formation
CO4: Diagnostic and Therapeutic utilistaion of Bronchoscopy
CO5: Diagnosis and management of Pulmonary embolism
CO6: Idenification of congenital malformation in Lung

Anatomy:

Embryology of heart and lungs
Anatomy of Thoracic cage and diaphragm
Anatomy of pleura
Segmental anatomy of lung
Pulmonary arterial and venous system
Lymphatics of lung
Nerve supply of lungs and pleura
Ultra structure of lung
Lung cell dynamics and culturing
Anatomy of heart and great vessels
Mediastinum divisions, contents
Anatomy of structures in the mediastinum Thymus, lymph nodes, oesophagus, lymphatics nerves
Osteology of ribs and vertebrae
Anatomy of thoracic inlet.

Physiology:

Physiology of respiration and its control

Lung function rests
Pathophysiology of corpulmonale
Pathophysiology of respiratory failure
Physiology of cardiac output and pulmonary circulation
Electrolytes and fluid balance
Pulmonary Physiology of high altitude

Pharmacology:

Pharmacology of anti-tubercular agents

Pharmacology of expectorants and anti-tussives
Pharmacology of bronchodilators
Pharmacological mechanisms in bronchial asthma
Anti-viral agents
Pharmacology of radio pharmaceuticals used in diagnosis of respiratory diseases
Pharmacology of cancer chemotherapy

Pathology:

Pathogenesis and pathology of tuberculosis (Pulmonary and extra pulmonary)
Pathology of non-tubercular chest diseases
Fundamentals of genetics and inherited pulmonary diseases
Pathology of viral and mycotic lung diseases
Pathology of occupational lung diseases
Pathology of Neoplasms of lung, pleura and mediastinum
Pathology of Pulmonary Hypertension
Pathology of interstitial lung diseases
Pulmonary manifestations in systemic disease.

Microbiology:

-**Microbiology of Tubercle bacillus-Classification, cultural characteristics, identifications, laboratory diagnosis including opportunistic mycobacteria**.
-Microbiology of viruses, which involve respiratory tract – classifications, culture methods, Laboratory diagnosis.
-Mycotic agents, which involve respiratory tract.
Allergy and immunology with reference to Bronchial Asthma
Microbiology of bacterial respiratory infections

Anaerobic lung infections

Paper - II TB (Course Code U15MDRM02)

CO1: Clinical Features of Pulmonary Tuberculosis
CO2: To identify MDR supsects
CO3: To understand infection control mesauyres
CO4: Diagnostic modalities of TB
CO5: Early idenification and management of PTB

CO6: To prevent the MDR TB ,and early idenification and management
CO7: Rapid diagnostic modality of TB Detection

History of tuberculosis and chest disease
Clinical aspects and treatment of pulmonary tuberculosis
Clinical aspects and treatment of extra pulmonary tuberculosis
Statistics of Tuberculosis in India
Clinical aspects and treatment of non-tubercular chest disease including mycotic and viral diseases
Atypical presentations of tuberculosis
Respiratory allergy and clinical immunology
Clinical aspects of occupational lungs disease
Physical therapy non-respiratory disease and rehabilitation of chronic respiratory patients.
Systemic manifestations of pulmonary disease and pulmonary manifestations of systemic disease.
Invasive and non-invasive investigative procedure in respiratory disease.
Radio pharmaceuticals in respiratory disease
Feasibility of Bronchoalveolar lavage in patients
Pulmonary radiology
Radiotherapy in lung cancer
Inherited pulmonary disorders

Paper - III Non Tubercular Chest Diseases (Course Code: U15MDRM03)

CO1: Types of Respiratory failure
CO2: Clinical manifestations of Pulmonary disease in immunocompromised patients
CO3: Mechanism and Clinical Features of Bronchiectasis
CO4: Management of Respiratory failures
CO5:Early diagnosis and management of Pneumonia in Immunocompromised
CO6: Prevention of Recurrent infection and Exacerbation of Bronchiecatsis

Non- Tuberculous infections of the lungs

Upper respiratory tract infections

Approach to a patient with pulmonary infection.

Community acquired pneumonias

Approach to atypical pnumonia

Nosocomial pneumonias

Unusual and atypical pneumonias including bacterial, viral, fungal and parasitic

Bronchiectasis and lung abscess

Acquired immunodeficiency syndrome and opportunistic infections in an immuno-compromised host.

Bronchitis and bronchiolitis

Non- infectious Lung Diseases

Interstitial Lung Disorders

Connective tissue disorders and lung diseases

Immune defense mechanisms of the lung

Sarcoidosis

Hypersensitivity pneumonias

Lung involvement in connective tissue disorders

Eosinophilic pneumonias and tropical eosinophilia

Pulmonary vasculitides

Reactions of the interstitial space to injury

Pulmonary fibrosis

Long term management of cystic fibrosis

Occupational pulmonary diseases

Interstitial diseases of other aetiologies

Drug induced pulmonary diseases

Aspiration and inhalational (non-occupational diseases of the lung

Pulmonary Circulatory disorders

Pulmonary edema

Pulmonary hypertension and cor pulmonale

Pulmonary thromboembolic diseases

Cardiac problems in a pulmonary patient and pulmonary diseases produced by cardiac diseases

Obstructive diseases of the lungs

Asthma

Chronic obstructive lung disease

Pulmonary rehabilitation

Cancer of the lungs

Epidemiology, pathology, natural history, clinical picture and staging of the carcinoma of lungs and other tumors

Approach to the diagnosis of a pulmonary nodule.

Medical management and surgical treatment of lung cancer.

Radiation therapy in the management of carcinoma ling

Paraneoplastic syndromes

Diseases of the mediastinum

Benign and malignant tumors

Non-neoplastic disorders

Disorders of the pleura

Pleural dynamics and effusions

Non-neoplastic and neoplastic pleural diseases

Pneumothorax

Pyothorax and broncho-pleural fistula and its complications.

Paper - IV Recent Advances (Course Code: U15MDRM04)

CO1: Difficult to Treat Asthma
CO2: Newer Inhalers in COPD
CO3: Pulmonary Function Test
CO4: Diagnostic modalities of TB
CO5: Evaluation and Treatment of Difficult Asthma and Use of Bronchial Thermoplasty
CO6: Management of Advanced COPD
CO7: Preoperative evaluation by Lung function testung with CPET

Knowledge about latest treatment modalities , Upcoming EBUS treatment , and knowledge about latest clinical research journals

Soft Skills (Course Code: U15MDRM05) Elective Course

CO1: Acquision of ability to conduct a scientific study.
CO2: Acquisition of skills in administration of a department.
CO3: Skills in biomedical ethics and proper ettiquette.
CO4: Ability to function as the member of a team.
CO5:Ability to organise public health programs.

Scheme of Examination

i) Theory

There shall be four question papers, each of three hours duration. Total marks for each paper will be 100. Questions on recent advances may be asked in any or all the papers. Model question papers are given below

Journals for reference

1	American Journal of Respiratory and Critical care Medicne
2	Chest (Foreign)
3	Clinics in Chest Medicine (Foreign)
4	Critical Care Medicine (Foreign)
5	Current Opinion in Critical Care (Foreign)
6	Indian Journal of Chest Diseases and Allied Sciences (Indian)
7	Indian Journal of Tuberculosis (Indian)
8	Indian Journal of Critical Care (Indian)
9	Respiratory Medicine (Foreign)
10	International journal of tuberculosis and lung diseases
11	Journal of Bronchology
12	European Journal of respiratory Diseases

Recommended books

1	A Clinician's Guide to Tuberculosis	Michael D Iseman
2	100 Chest X-Ray problems	Corne, Jonathan
3	Addressing poverty in TB control	W H O
4	Advanced Study in Respiratory Therapy	Grenard, Steve
5	Asthma Vol.1 & 2	Peter J Barnes
6	Atlas of Infectious Diseases Vol.6 : Pleuropulmonary and Bronchial Infections	Simberkoff, Mihcael S
7	Atlas of Procedures in Respiratory Medicine	Gold, Warren M
8	Bone's Atlas of Pulmonary and Critical Care Medicine	Campbell, G Douglas
9	Bronchial Asthama	D.Behera
10	Bronchoscopy	Udaya B S Prakash
11	Chest Medicine : Essentials of Pulmonary and Critical Care Medicine	Ronald B George
12	Chest Medicine : Essentials of Pulmonary and Critical Care Medicine	Ronald B George
13	Chest Medicine : Essentials of Pulmonary and Critical Care Medicine	Ronald B George
14	CIBA Collection of Medical Illustrations : Respiratory System	Netter, Frank H
15	Clinical Cardiovascular and Pulmonary Physiology	Rosendorff, Clive

16	Clinical Respiratory Medicine	Albert, Richard K
17	Color Atlas of Respiratory Diseases	D Geraint James
18	Crofton and Douglas's Respiratory Diseases Vol.1 &2	Seaton, Anthony
19	Diagnosis of Diseases of the Chest Vol.1 & 2	Robert G Fraser
20	Diseases of the Lung : Radiologic and Pathologic Correlations	Nestor L Muller
21	Felson's Principles of Chest Roentgenology	Lawrence R Goodman
22	Fishman's Pulmonary Diseases and Disorders Vol 1&2	Fishman, Alfred
23	Fraser and Pare's Diagnosis of Diseases of the Chest Vol.1 to 4	Fraser, R S
24	High-Resolution CT of the Lung	W.Richard Webb
25	Intensive Respiratory Care	John M Luce
26	Interpretation of Pulmonary Function Tests	Robert E Hyatt
27	Interstitial Lung Disease	Schwarz, Marvin I
28	Interventional Bronchoscopy	Bolliger, C T
29	Lung Function Tests	Hughes, J M B
30	Lung Sounds	Paul Forgacs
31	Management of Respiratory Tract Infections	John G Bartlett
32	Manual of Pulmonary Function Testing	Ruppel,Gregg L
33	Mechanical Ventilation : Clinical Applications and Pathophysiology	Papadakos, Peter J
34	Murray and Nadel's Textbook of Respiratory Medicine Vol 1&2	Mason, Robert J
35	Non-invasive Respiratory Support	Anita K Simonds
36	Nunn's Applied Respiratory Physiology	Lumb, Andrew B
37	Occupational Lung Diseases	W.Keith C Morgan
38	Pathology of Occupational Lung Disease	Andrew Churg
39	Patient Care in Respiratory Problems	Jane Secor
40	Physiotherapy in Respiratory Care :An evidence-based approach to respiratory and cardiac management	Hough, Alexandra
42	Pleural Diseases	Richard W Light
43	Preoperative Pulmonary Preparation	Peter M S Margand
44	Principles and Management of Tuberculosis	P.S.Shankar
45	Principles and Practice of Pulmonary Rehabilitation	Richard Casaburi
46	Principles and Practice of Sleep Medicine	Kryger, Meir H
47	Principles of Pulmonary Medicine	Steven E Weinberger
48	Progress in Pulmonary Medicine Vol.1 to 4	P.S.Shankar
49	Pulmonary Differential Diagnosis	Harold Zackon
50	Pulmonary Disease Diagnosis and Therapy	M Gabriel Khan
51	Pulmonary Diseases and Disorders	Alfred P Fishman
52	Pulmonary Medicine and Critical Care	Epsteim, Paul E
53	Pulmonary Pathophysiology	John B West
54	Pulmonary Pathophysiology	Michael A Grippi
55	Pulmonary Rehabilitation : Guidelines to Success	John E Hodgkin
56	Radiology of the Chest and Related Conditions	Wright, Fred W
57	Recent Advances in Respiratory Medicine Vol :2	Sharma, S K

58	Respiratory Medicine in the Tropics	J.N.Pande
59	Respiratory Patient Care	Kanute P Rarey
60	Respiratory Physiology	West, John B
61	Respiratory Physiology	Cloutier, Mitchelle M
62	Synopsis of Diseases of the Chest	Richard S Fraser
63	Textbook of Pleural Diseases	Richard W Light
64	Textbook of Respiratory Medicine Vol.1 & 2	John F Murray
65	Textbook of Respiratory Medicine Vol.1 & 2	John F Murray
66	Timebomb : The Global Epidemic of Multi-Drug-Resistant Tuberculosis	Lee B Reichman
67	Tuberculosis	Rom, William N
68	Tuberculosis	Sharma SK
69	Tuberculosis and air travel: Guidelines for Prevention and Control	WHO
70	Tuberculosis and Nontunerculous Mycobacterial Infections	David Schlossberg
71	Tuberculosis Bacteriology : Organization and Practice	Collins C H
72	Tuberculosis Handbook	WHO
73	Tuberculosis of the Airways	W H O
74	Tumors of the Lung Vol.24	Mackay, Bruce
75	Yearbook of Pulmonary Disease	Gareth M Green

Model checklist for Assessment of Scientific papers for publications

Sl.No	Criteria	Distribution of marks	Marks awarded
1	Originality	10	
2	Clarity and quality of presentation	10	
3	Relevance	10	
4	Review of literature	10	
5	Quantum of works involved	15	
6	Methodology, sensitivity, sample size, controlled, not controlled study etc	25	
7	Advancement in knowledge	10	
	Total	90	

Signature of the evaluator

Name

Designation

Chapter IV

Monitoring Learning progress

It is essential to monitor the learning progress of each candidate through continuous appraisal and regular assessment. It not only also helps teachers to evaluate students, but also students to evaluate themselves. The monitoring is to be done by the staff of the department based on participation of students in various teaching / learning activities. It may be structured and assessment be done using checklists that assess various aspects.

The learning outcomes to be assessed should include: (i) Personal Attitudes,(ii) Acquisition of Knowledge, (iii) Clinical and operative skills, and (iv) Teaching skills.

i) Personal Attitudes. The essential items are:

- Caring attitudes
- Initiative
- Organisational ability
- Potential to cope with stressful situations and undertake responsibility
- To understand and communicate intelligibly with patients and others
- To behave in a manner which establishes professional relationships with patients and colleagues
- Ability to work in team
- A critical enquiring approach to the acquisition of knowledge

The methods used mainly consist of observation. It is appreciated that these items require a degree of subjective assessment by the guide, supervisors and peers.

ii) Acquisition of Knowledge: The methods used comprise of Log Book which records participation in various teaching / learning activities by the students. The number of activities attended and the number in which presentations are made are to be recorded. The logbook should periodically be validated by the supervisors. Some of the activities are listed. The list is not complete. Institutions may include additional activities if so desired.

Journal Review Meeting (Journal Club): The ability to do literature search, in depth study. Presentation skills, and use of audio visual aids are to be assessed. The assessment is made by Faculty members and peers attending the meeting using a checklist (see Model Checklist – I, Chapter IV)

Seminars / Symposia: The topics should be assigned to the student well in advance to facilitate in-depth study. The ability to do literature search, presentation skills and use of audio visual aids are to be assessed using a checklist (see Model Checklist II, Chapter IV)

Clinico - pathological conferences: This should be a multidisciplinary case study of an interesting case to train the candidate to solve diagnostic and therapeutic problems by using an analytical approach. The presenter (s) are to be assessed using a check list similar to that used for seminar.

Medical Audit: Periodic morbidity and mortality meetings are to be held. Attendance and participation in these must be insisted upon. This may not be included in assessment.

iii) Clinical skills

Day-to-Day work: Skills in outpatient and ward work should be assessed periodically. The assessment should include the candidates sincerity and punctuality, analytical ability and communication skills (see Model Checklist III, Chapter IV).

Clinical meetings: Candidates should periodically present cases to his peers and faculty members. This should be assessed using a check list (see Model checklist IV, Chapter IV).

Clinical and procedural skills: The candidate should be given graded responsibility to enable learning by apprenticeship. The performance is assessed by the guide by direct observation.

Particulars are recorded by the student in the logbook. (Table No.3, Chapter I

iv) Teaching skills: Candidates should be encouraged to teach undergraduate medical students and paramedical students, if any. This performance should be based on assessment by the faculty members of the department and from feedback from the undergraduate students (See Model checklist V, Chapter IV)

v) Periodic tests: The departments may conduct three tests, two of them be annual tests, one at the end of first year and the other in the second year. The third test may be held three months before the final examination. In case of diploma courses of two-year duration, the departments may conduct two tests. One of them at the end of first year and the other in the second year three months before the final examination. The tests may include written papers, practicals/clinicals and viva voce.

vi) *Work diary / Log Book* – Every candidate shall maintain a work diary and record his/her participation in the training programmes conducted by the department such as journal reviews,

seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any conducted by the candidate.

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CHAPTER IV (CONTD.)

Format of Model Check Lists

Check List – I MODEL CHECK LIST FOR EVALUATION OF JOURNAL REVIEW PRESENTATIONS

Name of the Student: Name of the Faculty / Observer: Date

	Items for observation during presentation	**Poor 0**	**Below average 1**	**Average 2**	**Good 3**	**Very good 4**
1.	Article chosen was					
2.	Extent of understanding of scope & objectives of the paper by the candidate					
3.	Whether cross references have been consulted					
4.	Whether other relevant publications consulted					
5.	Ability to respond to questions on the paper/subject					
6.	Audio-Visual aids used					
7.	Ability to defend the paper					
8.	Clarity of presentation					
9.	Any other observation					
	Total Score					

Check List – II

MODEL CHECK LIST FOR EVALUATION OF SEMINAR PRESENTATIONS

Name of the Student: Name of the Faculty / Observer: Date

	Items for observation during presentation	**Poor 0**	**Below average 1**	**Average 2**	**Good 3**	**Very good 4**
1.	Whether other relevant publications consulted					
2.	Whether cross reference have been consulted					
3.	Completeness of Preparation					
4.	Clarity of presentation					
5.	Understanding of subjects					
6.	Ability to answer questions					
7.	Time scheduling					
8.	Appropriate use of Audio – Visual aids					
9.	Overall performance					
10.	Any other observation					
	Total Score					

Check List – III

MODEL CHECK LIST FOR EVALUATION OF CLINICAL WORK IN WARD/ OPD

(To be completed once a month by respective Unit Heads including posting in other departments)

Name of the Student: Name of the Unit head : Date

Sl No	**Points to be considered**	**Poor 0**	**Below average 1**	**Average 2**	**Good 3**	**Very good 4**
1.	Regularity of attendance					
2.	Punctuality					
3.	Interaction with colleagues and supportive staff					
4.	Maintenance of case records					
5.	Presentation of cases during rounds					
6.	Investigations work up					
7.	Bedside manners					
8.	Rapport with patients					
9.	Counseling patients relatives for blood donation or Post mortem and Case follow up					
10	Over all quality of Ward work					
11.	**Total Score**					

Check List – IV

EVALUATION FORM FOR CLINICAL PRESENTATION

Name of the Student: Name of the Faculty: Date

Sl No	Points to be considered	Poor 0	Below average 1	Average 2	Good 3	Very good 4
1.	Completeness of history					
2.	Whether all relevant point elicited					
3.	Clarity of presentation					
4.	Logical order					
5.	Mentioned all positive and negative points of importance					
6.	Accuracy of General physical examination					
7.	Whether all physical signs elicited correctly					
8.	Whether any major signs missed or misinterpreted					
9.	Diagnosis: Whether it follows logically from history and findings					
10	Investigations required • Complete list • Relevant order • Interpretation of investigations					
11.	Ability to react questioning Whether it follows logically from history and findings					
12	Ability to defend diagnosis					
13.	Ability to justify differential diagnosis					
14	Others					
	Grand Total					

Check List – V

MODEL CHECK LIST FOR EVALUATION OF TEACHING SKILL PRACICE

Name of the Student: Name of the Faculty: Date

Sl No		**Strong Point**	**Weak Point**
1.	Communication of the purpose of the talk		
2.	Evokes audience interest in the subject		
3.	The introduction		
4.	The sequence of ideas		
5.	The use of practical examples and /or illustrations		
6.	Speaking style (enjoyable, monotonous, etc., specify)		
7.	Attempts audience participation		
8.	Summary of the main points at the end		
9.	Asks questions		
10	Answers questions asked by the audience		
11.	Rapport of speaker with his audience		
12.	Effectiveness of the talk		
13.	Uses A V aids appropriately		

Check List – VI

MODEL CHECK LIST FOR DISSERTATION PRESENTATIONS

Name of the Student: Name of the Faculty: Date

Sl No	**Points to be considered**	**Poor 0**	**Below average 1**	**Average 2**	**Good 3**	**Very good 4**
1.	Interest shown in selecting a topic					
2.	Appropriate review of literature					
3.	Discussion with guide and other faculty					
4.	Quality of protocol					
5.	Preparation of proforma					
	Total Score					

Check List – VII

CONTINUOUS EVALUATION OF DISSERTATION WORK BY GUIDE / CO – GUIDE

Name of the Student: Name of the Faculty: Date

Sl No	**Items for observation during presentations**	**Poor 0**	**Below average 1**	**Average 2**	**Good 3**	**Very good 4**
1.	Periodic consultation with guide / co-guide					
2.	Regular collection of case material					
3.	Depth of analysis / discussion					
4.	Departmental presentation of findings					
5.	Quality of final output					
6.	Others					
	Total Score					

LOG BOOK

Table – 1: Academic activities attended

Name: Admission Year:

College:

Date	**Type of Activity** **Specify Seminar, Journal Club, Presentation, UG Teaching**	**Particulars**

LOG BOOK

Table – 2: Academic presentation made by the student

Name: Admission Year

College:

Date	**Topic**	**Type of Presentation** Specify Seminar, Journal Club, Presentation, UG Teaching etc

LOG BOOK

Table –3: Diagnostic and therapeutic procedures performed

Name: Admission Year

College:

Date	Name	ID No	Procedure	Category O, A, PA, PI*

* Key O - Washed up and observed
A - Assisted a more senior Surgeon
PA –Performed procedure under the direct supervision of a senior surgeon
PI – performed independently

Model Overall Assessment Sheet

Name of the college: Academic Year

Sl. No	**Faculty Member & Others**	**Name of Student and Mean Score**									
		A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**
1											
2											
3											
4											
5											
6											
Total Score											

Note: Use separate sheet for each year